Whale Watching Worldwide

Tourism numbers, expenditures and expanding economic benefits

A special report from the International Fund for Animal Welfare

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A special report from IFAW – the International Fund for Animal Welfare

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Preface

Government officials, scientists and advocates from around the world are gathering this week on the sunny island of Madeira, Portugal to debate the future of our planet's great whales. As they do so, new evidence is surfacing of the massive economic contribution living whales now make to coastal economies around the world. Whale Watching Worldwide documents the incredible growth of the global whale watching industry over the past decade and provides a detailed country-by-country analysis of its expanding economic benefits.

What began as a seasonal fluke off the coast of California in the 1950s has grown into a vibrant, profitable sector of the international ecotourism market. Ten years ago, the first IFAW global whale watching report, produced by noted researcher Erich Hoyt, documented 9 million whale watchers in 80-plus countries and territories contributing more than US $1 billion to coastal communities worldwide.

This new IFAW study, painstakingly compiled over the past 18 months by the Melbourne, Australia-based Economists at Large & Associates, shows more than 13 million people took whale watching tours last year in 119 countries worldwide, generating a whopping $2.1 billion in total expenditures during 2008. The report also documents dramatic growth of the whale watching industry in Asia, the Pacific, South America, the Caribbean and Europe, significantly outpacing global tourism growth rates over the past decade. Growth like this means jobs: more than 3,000 whale watching operations around the world now employ an estimated 13,200 people.

As an organization committed to a better world for animals and people, IFAW is proud to have played a part in the development of whale watching worldwide and we are committed to seeing it conducted responsibly. Since first becoming involved in 1980, we have produced 15 whale watching reports, 16 workshops, numerous scientific papers, popular articles and other publications. And we have been pleased to support whale watching projects and networks of operators in Latin America, South Africa, Asia, Australia, the Pacific, Europe, North America and the Caribbean.

While governments continue to debate the future of whaling, the bottom line is increasingly clear: Responsible whale watching is the most sustainable, environmentally-friendly and economically beneficial "use" of whales in the 21st century. At a time when the global economy, our planet's great whales and international whale conservation measures are all under threat, it is encouraging to see coastal communities the world over continuing to reap increasing benefits from this rapidly developing form of ecotourism. Animals and people both do better when whales are seen and not hurt.

Patrick R. Ramage, Whale Program Director, IFAW
Madeira, Portugal
June 2009

Foreword: IFAW and Whale Watching 1980 - 2009

They say that the sea is cold, but the sea contains
the hottest blood of all, and the wildest, the most urgent[1]

Vassili Papastavrou

There is one group which should take the credit for the development of whale watching: it is the whales themselves. Described by Roger Payne as nature's self-publicists, there is nothing more remarkable than seeing a whale for the first time and it is no wonder that whale watching has now grown into a 2.1 billion dollar industry.

A quick scan through campaigning publications such as *The Whale Manual* (Friends of the Earth, 1972) and *Mind in the Waters* (Project Jonah edited by Joan McIntyre, 1974) shows that whale watching is notable by its absence. Whale watching had already started in California some two decades earlier but perhaps the full implications had not been realised. It was only after the adoption of the 1982 moratorium on commercial whaling that the idea of whale watching began to take hold as a realistic financial alternative to whaling. In 1983 the *Global Conference on the Non-consumptive Utilization of Cetaceans* was held in Boston and discussed a number of "uses" of whales, including whale watching. Leading scientists, politicians and non-governmental organisations, led by the host Connecticut Cetacean Society (now Cetacean Society International) attended. The report was presented to IWC meeting the following year to opposition from Japan and the USSR. Better known by its short title, *Whales Alive* was co-sponsored by the International Whaling Commission, IFAW and other conservation organisations and marked the launch of whale watching in the International Whaling Commission.

At around this time, IFAW tentatively started its practical work on whale watching with an aerial survey in The Seychelles in 1980 to see if whale watching might be feasible in the newly established sanctuary. Since then IFAW's whale watching activities have grown as whale watching itself has expanded and developed. Several other organisations, particularly the UK-based Whale and Dolphin Conservation Society, and Humane Society International have also stayed the course. As whale watching expanded, so efforts focused on ensuring that it was conducted in an appropriate fashion, avoiding disturbance to the whales.

IFAW's work on whale watching splits into two parts. There has been a long-running programme to use whale watching as a way of countering whaling and specifically to insert whale watching into the International Whaling Commission as an alternative "use" of whales that is infinitely preferable to whaling. Secondly, country-specific activities have been conducted in a number of key locations, with the present and previous *Song of the Whale* and Team often contributing to that work.

1. Whale Watching and Whaling

Arguably, IFAW's work on whale watching as a way of influencing the commercial whaling debate started in 1988, when work was funded on a feasibility study for whale watching in Iceland. The motivation for this work was to see whether a counterpoint to whaling interests could be established in Iceland. IFAW's work in the

[1] Whales Weep Not by DH Lawrence

Azores which began in 1987, conducted by the first *Song of the Whale* had a similar theme, to change attitudes away from the sperm whaling that was still happening there at the time.

Early in 1994, the IFAW Anti-whaling Campaign Team, as it was then known, developed a programme for IFAW's engagement in promoting responsible whale watching in the context of its long-standing efforts to bring an end to commercial whaling. This was launched at a time when we were campaigning for the IWC to declare the Southern Ocean (south of 40°S) as a whale sanctuary, which was successful later in the year.

The proposed IFAW activities were to promote responsible whale watching in sensitive countries that were either engaged in whaling (Norway and Japan), possibly soon to become re-engaged (Iceland) or had been induced to support Japan in the IWC (such as Dominica within the Caribbean). We also wanted to establish whale watching as a sustainable alternative to whaling and a source of income (particularly for coastal communities). Finally IFAW wanted whale watching to become an activity in which IWC should take a benign interest. This included demonstrating that useful scientific information relevant to the IWC could be collected from whale watching vessels using benign techniques.

With respect to promotion of responsible whale watching in sensitive countries, it was decided to concentrate on the Caribbean, Iceland and Japan. In Iceland today, the main political pressure point is from the whale watching operators and recently, the tourism industry as a whole. Activities in Japan have helped to establish whale watching as a viable activity. The whalers' lobby has changed from flat opposition and obstruction to arguing that commercial whaling and whale watching are compatible.

In the Caribbean, whale watching is growing in Dominica and elsewhere, and though it has been difficult to counter the influence of Japan and its aid in the region, the whale watching operators are increasingly providing a cohesive force against the present whaling policies. In 2008, Dominica announced that it would not vote in favour of whaling and in the event did not attend the 2008 IWC Commission meeting in Santiago de Chile. Voting with Japan in favour of whaling does not sit comfortably with the promotion of Dominica as a nature island.

IFAW's work in the Caribbean began in 1995, following a commitment from Brian Davies (who founded IFAW) that if Dominica did not oppose the Southern Ocean Sanctuary vote then IFAW would assist in promoting Dominica as an eco-tourism destination (at a time when others were threatening to initiate a tourism boycott of the islands because of their pro-whaling stance). That commitment was honoured by IFAW, through a variety of activities including whale/marine conservation awareness raising within schools, local communities, and visitors to the islands, baseline whale research and working with local dive and tour operators.

Through this period, IFAW supported the collation of whale watching regulations and guidelines around the world in a compendium that was updated annually by Carole Carlson (e.g. Carlson, 2004) and assisted in the drafting of new guidelines and regulations for various countries.

Concerning the aim of establishing whale watching as a sustainable activity, it was decided to focus pressure on the IWC to take the various aspects of the subject seriously. In particular, to try to ensure that the rapidly expanding activities were not harmful to the whales, and that the key aspects were seriously considered. Following a suggestion from Erich Hoyt and Giuseppe Notarbartolo di Sciara, IFAW (together with other NGOs) supported what was to become the first of a series of whale watching workshops, on the scientific aspects of managing whale watching.

Sidney Holt, at that time IFAW Science Advisor, then planned a series of other international workshops in which the special characteristics of sperm whale watching, socio-economic issues, educational values and legal issues were addressed. An important feature of this set of activities was that results were reported to the IWC, mainly through sympathetic national delegations, while efforts were made to obtain IWC Resolutions recognising these results. In essence, the IFAW programme became the IWC's programme (an IWC resolution adopted in 1996 was drafted in light of the pre-existing IFAW programme). Particularly with respect to the scientific aspects, the IFAW workshops have driven the discussion within the IWC. The reports are as follows:

- Workshop on the Scientific Aspects of Managing Whale Watching, Montecastello di Vibio, Italy, 30/3-4/4/ 1995 (SC/47/0 18)

- Workshop on the Special Aspects of Watching Sperm Whales, Roseau, Dominica, 8-11/1/1996 (SC/48/0 26)

- Workshop on the Educational Values of Whale Watching, Provincetown, Mass., USA, 8-11/5/1997 (IWC/49/WW2)

- Workshop on the Legal Aspects of Whale Watching, Punta Arenas, Chile, 17-20/11/1997 (IWC/S1/WW1)

- Workshop on Socioeconomic Aspects of Whale Watching, Kaikoura, New Zealand, 8-12/12/1997 (IWC/S0/TGw41)

- Hoyt, E. 2001. Whale Watching 2001: Worldwide Tourism Numbers, Expenditures and Expanding Socioeconomic Benefits

- Report of the Closing Workshop Reviewing Various Aspects of Whale Watching. Tuscany, Italy 6-10 February 2000.

These efforts in the IWC were opposed by Japan at every stage and by every available means which meant we must have been on the right track! Another feature of this campaign is that although IFAW put by far the greater resources into it, we collaborated with Greenpeace, WWF and WDCS, and from time to time some smaller national NGOs.

The last workshop in the series is perhaps the one to look at first (Report of the Closing Workshop Reviewing Various Aspects of Whale Watching). Its stated aim was to “wrap up” the work described in the previous workshop reports. In some cases, the debate had moved on since the earlier reports were published. In addition, the synergy between the various different aspects was considered, together with a discussion of possible future activities. Within the report there is a good summary by Sidney Holt of the history of the issue within the IWC and the context of the discussion on whale watching as it relates to other activities of the IWC.

In order to document both the value of whale watching and to determine its growth rate, IFAW commissioned Erich Hoyt in 1999 to conduct the massive task of a global survey. The resulting report *Whale Watching 2001* documented both the expansion of whale watching around the world and its value on a country by country basis. Hoyt calculated the value of whale watching as more than one billion dollars per annum in direct and indirect expenditure. It was this report that gained by far the most media interest. His report followed an earlier 1995 report to WDCS on the same subject. The present report comes almost a decade later.

So what progress has been made? For a start, whale watching is now taken seriously as an economic activity globally. Long gone are the days of comments, such as that of an Icelandic politician, "whale watching in Iceland – that is the stupidest idea I have ever heard". Whale watching is now woven deeply into the fabric of the IWC (through a number of IWC decisions) as a form of utilisation of whales which in IFAW's view is infinitely preferable to whaling. It should be noted whale watching is not without its own potential impacts on the whales. This has been an issue of obvious interest and concern to IFAW, and one which should be followed very carefully as the expansion of whale watching continues worldwide.

In summary, much of IFAW's work has been to contribute to efforts to encourage the development and running of whale watching that is conducted responsibly, with due respect for the welfare of the whales and to ensure that the maximum educational benefit is gained by whale watchers. In a few specific locations, IFAW has also promoted the development of whale watching while at the same time attempting to ensure that this was done responsibly.

2. Additional IFAW projects related to whale watching

Scientific work

IFAW's scientific work related to whale watching has been with the aim of facilitating data collection relevant to general whale conservation, and to study effects of whale watching on whales. The focus has been on developing benign, non-intrusive techniques on *Song of the Whale* that can be used from whale watching vessels. The Logger software developed by IFAW for data collection is now used around the world by whale watch operations and other researchers. IFAW has also contributed to studies of compliance with regulations and guidelines (Wiley et al., 2004), their scientific basis (Amaral and Carlson, 2005) and techniques for monitoring these more effectively (DeNardo et al., 2001; Leaper et al., 1999; Leaper and Gordon, 2001).

Popular Leaflets, Brochures and Video

Various popular leaflets and posters have been developed, sometimes in several languages, as a contribution to the development of responsible whale watching and to maximise the educational component of whale watch trips. These include sperm whales and whale watching (translated into Japanese and Portuguese and widely distributed in Japan, the eastern Caribbean and the Azores); and the minke whales and whale watching in the British Isles leaflet (provided general interest information, details about responsible whale watching and was reprinted three times with minor updates). In addition leaflets were prepared on whales and dolphins of the Mediterranean; North Atlantic right whales; whales of the wider Caribbean (in English, French and Spanish); harbour porpoises; and whale watching in Tonga. Finally, IFAW produced two waterproof marine mammal identification and whale watching guides for the Pacific Islands region, and for Australia and New Zealand as well as a waterproof species guide for use by E. Caribbean operators. In 2005, IFAW and WDCS produced a small booklet on whale watching in Japan, Hong Kong, Taiwan and Korea (Hoyt, 2005).

IFAW underwrote and helped produce *What to Do About Whales*, a feature-length documentary highlighting the phenomenon of whale watching in four countries (US, Japan, New Zealand and Iceland). IFAW continues to promote and distribute this video production via our websites.

Australia, New Zealand and the South Pacific

IFAW Asia Pacific is involved in a number of Australia-based and South Pacific activities. In Australia, these included the launch of National Whale Day in 2008, a page entitled *follow the whale migration* and a list of locations of whale watching sites. IFAW Asia Pacific has commissioned a series of six reports, written by Simon O'Connor from Economists at Large. The three reports of aspects of whale watching in Australia were on the growth of whale watching tourism in Australia (O'Connor, 2005a), specifically the growth of whale watching in Sydney (O'Connor, 2005b) and a review of whale watching economics and activities on the Gold Coast (O'Connor, 2008). A number of workshops and training activities were conducted as follows; NSW whale watching forum (2005); operator training and industry compliance manager training in five cities in NSW (2006); and operator and government training in Broome, Western Australia (2008).

In New Zealand, IFAW equipment and staff were used to conduct a study for the Department of Conservation (DOC) on the effects of whale watching on sperm whales off Kaikoura, in 1992 (Gordon et al., 1992). At the time the permits for sperm whale watching were limited to a single whale watch operator using four vessels, but there was considerable pressure to allow more permits for other operators. The current moratorium on issuing new permits expires in 2012 and the Government of New Zealand is planning to commission further research on the effects of whale watching using methods that should generate comparable data to the IFAW methods in the initial study. In 2004, IFAW funded the production of a report on whale watching in New Zealand which was presented to the IWC by the government of New Zealand (O'Connor 2005).

Elsewhere in the South Pacific, IFAW's work on whale watching is largely through participation in the Secretariat for the South Pacific Regional Environment Programme's Whale and Dolphin Action Plan, and through the Conservation Committee of the South Pacific Whale Research Consortium. A series of collaborative workshops were held on the management of whale watching, in particular for the development of national whale watching guidelines, and the training of operators, guides and industry managers to implement them. These have included facilitating national workshops in Tonga (2000, 2003), Niue (2001, 2003), Samoa (2004) and Vanuatu (2002). In 2007 IFAW contributed to national workshops in Fiji and Papua New Guinea.

IFAW also co-convened the Pacific Islands Working Group on Whale and Dolphin Watching in Auckland, New Zealand, April, 2008, attended by 35 delegates from 13 countries, which reviewed whale watching activities, impacts, best practice, and saw the development and endorsement of Pacific Regional Guidelines for Whale & Dolphin Watching.

In Tonga, IFAW funded Filipe Tonga who ran a project through the IFAW Marine Awareness Centre on Tonga. Filipe provided technical advice to government and industry on the management of whale watching which focuses on humpback whales.

In April 2008, IFAW launched a report on Pacific Islands whale watch tourism (O'Connor, 2008) which documented the growth of whale watching in the area up to 2005, predicts continuing growth, but also lists some possible constraints to continued growth in the future.

Azores and Madeira

The original IFAW research vessel *Song of the Whale* spent several seasons, starting in 1987, studying cetaceans, particularly sperm whales around the Portuguese island groups of the Azores and Madeira. A local variation of 19th Century Yankee sperm whaling was still being conducted with three whales killed in 1987. There was still a

very strong interest within the islands to continue whaling. Since then, whaling has ended and there has been a gradual shift away from whaling and towards whale watching which involves the former whaling look-outs or vigias. In addition, one of the main families involved in whaling bought into the newly developing whale watching industry. The focus of the *Song of the Whale* work was on studies of the behaviour and distribution of sperm whales and the potential for developing whale watching. Whale watching has now become a successful industry in the Azores. IFAW has maintained an involvement to help ensure that the whale watching is conducted sensitively with minimum disturbance to the whales and *Song of the Whale* returned to the area principally to study beaked whales in 2008. In 1999, IFAW staff contributed to a workshop to determine appropriate regulations for the industry.

Caribbean

As mentioned earlier, the IFAW work in the Eastern Caribbean began in 1995, following a commitment from IFAW that if Dominica did not oppose the Southern Ocean Sanctuary vote then IFAW would assist in promoting Dominica as an eco-tourism destination.

The *Song of the Whale* Team spent several seasons collecting data to investigate the feasibility of whale watching around Dominica starting in 1995 (Gordon and Carlson, 1995; Carlson and Gordon, 1997; Gordon et al., 1998). In January 1996, IFAW held the workshop on *The Special Aspects of Watching Sperm Whales* in Roseau, Dominica. IFAW also organised a regional workshop in 2000 on Dominica for whale watch operators in the Eastern Caribbean. And as this report went to press in May 2009 IFAW organized a floating classroom project in Dominica.

In addition to work in Dominica, IFAW conducted a public awareness programme on whales in schools through the Eastern Caribbean and collected useful baseline survey data on the little known cetacean fauna of the region. In several islands, IFAW provided assistance to whale watching operations in their early stages, often by providing them with hydrophones and other pieces of equipment as well as training. In 2006, the *Song of the Whale* team conducted non-invasive whale research and outreach activities in Trinidad and Tobago and surveys for cetaceans on the Saba Bank. The project was conducted in support of the United Nations Environment Programme's (UNEP) protocol for Specially Protected Areas and Wildlife (SPAW). However, few cetaceans were seen during these surveys, perhaps because of the extensive seismic activity in the area, or former whaling activities. Students and young scientists from the region have taken part in the research as interns working alongside IFAW researchers onboard.

Most recently, IFAW has supported the re-establishment of CARIBWHALE, the Caribbean-wide whale watching association, which is now active with members throughout the region. IFAW provided support to enable a meeting of the key whale watching constituencies in the Caribbean to be held in the fringes of the 2006 IWC meeting in St Kitts.

Just prior to the 2008 IWC, the prime minister of Dominica announced a welcome change away from Dominica's pro-whaling position at the IWC.

Iceland

In 1988, prior to the existence of any whale watching in Iceland, IFAW sponsored a study on the feasibility of whale watching in Iceland (Lindquist and Tryggvadottir 1990). Whale watching has subsequently developed into a major part of the Icelandic tourism industry and plays an important role in the local economy. The whale watching industry now provides an important political counterpoint to whaling interests. In 1991, the first whale

watching trips started (Papastavrou, 1994). IFAW also provided ideas for research that could be conducted from Icelandic whale watching boats. Then, in March 1999, IFAW funded, and participated in, a meeting of whale watching operators in Iceland. This was an opportunity for the operators to get together and discuss their common interests including operating guidelines and research. IceWhale, the Association of Icelandic whale watch operators, grew out of this meeting. Since then IFAW has funded the Husavik Whale Centre and the new *Song of the Whale* visited Iceland to conduct non-invasive whale research and public outreach activities in 2004 and 2006. In early 2008, IFAW held another whale watching workshop in Iceland, which brought together participants from several other countries for a genuinely international meeting.

Japan

Several of the IFAW whale watching reports have been translated into Japanese. These include the reports on the *Scientific Aspects of Managing Whale Watching*; the *Special Aspects of Watching Sperm Whales*; the *Educational Values of Whale Watching* and Erich Hoyt's *Whale Watching 2001* report on the value of whale watching worldwide. In 1995, IFAW visited six whale watching areas (Nachi-katsuura, Ogata, Muroto, Choshi, Muroran and Shibetsu) to review the extent of the industry, which mainly caters for Japanese nationals rather than foreign tourists. Since then IFAW has visited other whale watching locations.

In November 2004 IFAW hosted an international conference on whale watching in Choshi, Japan. Participants included a dozen Japanese whale and dolphin watch operators from across the country and experts from Asia, Iceland, mainland Europe, North America and Latin America. IFAW also created a mailing list of major whale watching operators, guides and scientists to exchange information and ideas on responsible whale watching in Japan.

In 2005, when the IWC was held in Ulsan, South Korea, IFAW, together with WDCS produced a small booklet on whale watching in Japan, Hong Kong, Taiwan and Korea. Also in 2005, IFAW gave a local whale watching operator, Choshi Ocean Institute, a small grant for the first steps in creating a whale watching centre in Choshi. In 2006, IFAW gave a small grant to Zamami Village Whale Watching Association to help with its humpback whale photo ID catalogue.

Latin America

IFAW has organised a number of whale watching workshops in coordination with South American NGOs. In 2003, a Workshop on whale watching activities was held in Punta del Este, Uruguay. The main goal of the workshop was to look at future opportunities in the region but also to identify regional conservation priorities for Southern right whales and develop guidelines.

In 2004, IFAW provided funding to support a Whale Watching Workshop held in Puerto Pirámides, Chubut, Argentina. The workshop discussed regulations and a voluntary code of conduct to minimise impacts on whales at Peninsula Valdes (Sironi et al., 2005). In addition, the workshop on the legal aspects of managing whale watching was held in Punta Arenas, Chile (Birnie & Moscrop, 2000). Then in 2005 IFAW supported the First International Workshop on the Management and Non-lethal use of Cetaceans in Peninsula Valdes, Argentina which was followed by the second international workshop in 2007 which was held in La Pedrera, Uruguay. The recommendations of this workshop were presented by the Argentine Delegation at the 58th Annual meeting of the IWC in St Kitts.

In 2008, IFAW, together with WDCS, launched a report on the state of whale watching in Latin America from México to the southern tip of South America (Hoyt and Iñíguez, 2008), which followed on from earlier work

(Hoyt, 1994). The authors calculated that currently 886,000 people go whale watching each year which brings in US$278 million in direct and indirect expenditure.

Scotland

IFAW helped establish a combined whale watching and research operation from the Isle of Mull, Scotland in 1992 with the first *Song of the Whale*. As well as whale watching and education, research has been conducted on minke whale behaviour and distribution (Leaper et al., 1997; MacLeod et al., 2004). *Song of the Whale* returned in 1996 and again in 2002, in part conducting research on basking sharks in the run-up to the successful CITES listing proposal. The work in Scotland is one of a few long-term studies of minke whales and involves the same population that is also subject to commercial whaling by Norway. It may be possible to use the data obtained to look at long-term site fidelity of minke whales, which will have relevance to the ongoing IWC debate about coastal whaling. IFAW has maintained links with the whale watching companies (who still continue to collect data using Logger) and the Hebridean Whale and Dolphin Trust. HWDT now runs its own research vessel using many of the acoustic and visual research techniques developed by IFAW. Whale watching is now featured in the Lonely Planet travel guide to Scotland with advice from IFAW on ensuring minimum disturbance to whales (Leaper, 2008).

Seychelles

In 1980 IFAW, in support of the newly-designated Indian Ocean Sanctuary, carried out an aerial whale survey. The idea was to establish the feasibility of counting sperm whales in this region from a fixed-wing aircraft and to examine the possibility of small-scale whale watching activity off Mahe. Unfortunately, it appeared from the survey that the sperm whales that had been numerous in the 19th Century seemed to be virtually wiped out and not sufficiently numerous on which to base whale watching operations.

South Africa

South Africa's whale watching was initially shore-based. In 1998, IFAW South Africa funded a fact-finding mission to New Zealand in order to benefit from the NZ experience managing boat-based whale watching. Two representatives from South Africa's Chief Directorate of Sea Fisheries were accompanied by Jason Bell and met with NZ government contacts in the Department of Conservation. New Zealand was chosen because of its largely permit-based regulation of the industry. The visit to New Zealand allowed South Africa to develop good regulations prior to permitting boat-based whale watching.

Since then, IFAW has contributed to a number of local whale watching activities, including launching the Walker Bay "Whale Walk" in 2006 and further enhancing whale watching experiences in South Africa by producing whale conservation awareness boards along the coastline. IFAW's *Whale Show* presentation recently entered its second season in Hermanus.

Taiwan

IFAW co-sponsored the 10th Symposium on *Cetacean Ecology & Conservation-Toward A Sustainable Future of Whale Watching*, held in Taiwan in September, 2004 and though not represented at the meeting did provide information on the development of responsible whale watching.

USA

For the past four years, IFAW has collaborated with Hyannis Whale Watcher, a whale watch operation on the north side of Cape Cod near our HQ office to develop educational displays, educational literature for distribution to customers and general promotion of IFAW. In past years, IFAW has engaged the Hyannis Whale Watcher naturalists as interns, affixed the IFAW logo prominently on the vessel and engaged in significant local outreach. IFAW has also supported research conducted by NOAA/Stellwagen Bank National Marine Sanctuary researcher Dave Wiley monitoring whale watching vessels in New England waters and compliance with speed restriction guidelines (Wiley et al. 2004). The research showed that whale watching boats were routinely exceeding speed limits which were rarely enforced.

Conclusion

In 2009 the IWC is at a crossroads. It could revert to the mindset of 1946 and facilitate the continuation and expansion of commercial whaling, or it could genuinely become the organisation responsible for the "proper conservation of whale stocks". Whale watching provides the lever that could drive the IWC in the right direction. IFAW has been privileged to contribute to that process over the years and we hope that that support will continue well into the future. For whale watching provides the means to change attitudes about whales.

3. Whale Watching and the International Whaling Commission – a Brief History

Summary

The International Whaling Commission has addressed the subject of whale watching since 1975. As the only global body responsible for the conservation of whales, the IWC has provided a focus for all aspects of the discussion regarding whale watching including the scientific, legal, socio-economic and educational aspects. The IWC has provided the function of a clearing house for the collation, analysis and dissemination of information on whale watching to both member and non-member governments.

The IWC has performed a critical function of providing a framework both to help coastal states draft regulations and guidelines and to provide a forum for peer review of the scientific aspects of issues arising from whale watching. This has contributed to the overall sustainability of whale watching and ensuring that the economic and educational benefits are capitalised upon.

Chronology

1975 Concerns were expressed within the IWC Scientific Committee that excursion boats entering Scammon and other breeding lagoons in Mexico, which had started in 1970, might be detrimental to the whales[2].

1976 IWC Scientific Committee asked the Commission to request the US and Mexican Governments to "…establish regulations to reduce harassment of (gray) whales in all their breeding areas"[3]. The Commission responded by adopting a resolution, proposed by Denmark, that noted the Committee's recommendation and that "the gray whales are generally protected", and recommended "… that contracting governments establish such regulations as soon as possible".

[2] Rep. Int. Whal. Commn 28: 209-11, 1976
[3] Rep. Int. Whal. Commn 29: 68, 1977

1982 The USA proposed at the IWC that there should be a special meeting in the northern hemisphere spring of 1983 "to address the non-consumptive utilisation of cetacean resources, giving consideration to research, recreation, education and cultural aspects". The IWC agreed to co-sponsor such a meeting[4].

1983 First whale watching conference "Whales Alive" held in Boston, co-sponsored by the IWC and with participation of the IWC Secretary as an observer.

1984 Outcome of conference was brought to the IWC, including that the new issue of non-consumptive use should be considered by the IWC.

1993 First whale watching resolution adopted by IWC in 1993, establishing a Working Group on Whale Watching to meet prior to the 1994 IWC and, *inter alia*, "assemble and summarise information about whale watching from both party and non-party states"[5].

1994 Whale watching working group meets just prior to the IWC under the chairmanship of F. von der Assen (Netherlands). The main document under consideration was the report prepared by the Secretary on the basis of overviews provided by 11 member governments namely: Argentina, Chile, France, Ireland, Mexico, New Zealand, Oman, Spain, Sweden, UK (including British Virgin Islands, Turks & Caicos Islands and other British territories), and USA. There were in addition late papers from Japan, Brazil, Australia and Norway.

1994 Resolution on whale watching adopted which *inter alia* requests the submission of information by contracting parties on whale watching, requests advice from the Scientific Committee in setting guidelines, and requests the IWC to keep under review all aspects relating to whale watching.

1995 – Present. The IWC Scientific Committee has addressed a large variety of scientific issues concerning whale watching. A standing Whale Watching Sub-Committee of the Scientific Committee was set up in 1998 from the Working Group set up in 1995. Matters addressed include:

- Identifying and assessing the possible effects of whale watching operations on cetaceans/whales;
- Examining current status of methods of assessment of impacts, including assessment of behavioural change;
- Providing advice on the management of future whale watching based on assessment of impacts;
- Reviewing information on noise production from vessels and aircraft and its effects on cetaceans;
- To draw up a set of guidelines to assist coastal states in the management of whale watching, based on the experience of member countries;
- Considering the assessment of possible short and long-term effects of whale watching and some special situations such as "swim-with" programmes and dolphin feeding programmes;
- Utilising the opportunities for scientific research conducted from whale watching boats;

[4] Rep. Int. Whal. Commn 33 31-2, 1983
[5] Rep. Int. Whal. Commn 44: 33-4, 1994

- Research on the effectiveness of, and compliance with, management measures.

1996 IWC Resolution adopted which *inter alia*, committed the Commission to discuss educational, economic and social aspects of whale watching at its Annual Meeting in 1997[6].

1997 IWC considers the educational aspects of whale watching. The USA submitted information indicating the potential educational opportunities that are available through whale watching operations and how to make best use of these opportunities.

1998 IWC considers the socioeconomic aspects of whale watching indicating:

- It offers new development opportunities for coastal communities;
- It can provide substantial economic benefits;
- It is a sustainable, non-consumptive use of cetaceans offering opportunities for non-lethal research;
- It offers opportunities for education and for development of research methods.

1999 IWC considers the legal aspects of whale watching – including a compilation of existing and "model" legislation and guidelines from around the world.

2000 IWC considers the increasing value of whale watching to small island developing states and endorses the continuing work of the Scientific Committee. The Scientific Committee held a special two-day workshop on assessing the long-term effects of whale watching on cetaceans.

2001 IWC continues the discussion regarding the value of whale watching as non-consumptive sustainable use of whales. New Zealand cited IFAW report indicating that whale watching is a global industry worth more than one billion US dollars per annum.

2002 Scientific Committee continued to address research from whale watch operations; the effects of noise on whales and the effectiveness and compliance with national whale watching guidelines and regulations.

2004 The value of whale watching in Australia – IFAW report presented to IWC by the government of Australia.

2005 *Growth of Whale Watching in New Zealand*. IFAW report presented to the IWC by the government of New Zealand.

2007 IWC Commission adopts resolution on the non-lethal use of cetaceans, proposed by Argentina and co-sponsored by 15 other countries. Scientific Committee continues to consider the short and long-term effects of whale watching on cetaceans.

2008 The Scientific Committee held a workshop on strategic planning of large-scale whale watching research in April 2008 to improve long-term efforts to study the impacts of whale watching on whales. These efforts continue to demonstrate that whale watching is an activity that the IWC should take seriously and that discussions of the management of whale watching should be on an equal footing with discussions about setting

[6] Rep. Int. Whal. Commn 47:20-21, 1997

catch limits for whaling. Argentina presents IFAW/WDCS/Global Ocean report on the state of whale watching in Latin America to the IWC Commission meeting.

Acknowledgments

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Executive Summary

Ten years after the last global review of the worldwide whale watching industry, the International Fund for Animal Welfare has commissioned Economists at Large to undertake an update report to measure the change in this industry across the world since 1998. This report presents the findings of a 2008 review of the global whale watching industry[7].

In 1998, the global whale watching industry was already well established, with over 9 million whale watchers across 87 countries and territories spanning every continent of the globe. At that time, the industry was estimated to generate over US$1 billion in total expenditure[8].

Ten years later, in 2008, we see an industry that has grown strongly, expanding across more countries and territories, and continuing to develop in those countries with long established industries.

In 2008, 13 million people participated in whale watching in 119 countries and territories, generating total expenditure of $2.1 billion.

Furthermore, an estimated 3,300 operators offer whale watching trips around the world. The operators employ an estimated 13,200 people.

The most recent decade has been tumultuous for global tourism, with the terrorist attacks of 9/11, the impact of SARS (severe acute respiratory syndrome), and the effects of various wars. This resulted in flat or negative growth globally in international inbound tourism in four of those last ten years.

Across the globe, the whale watching industry has grown at an average rate of 3.7% per year, comparing well against global tourism growth of 4.2% per year over the same period.

But the growth rate of whale watching at a global level tells only part of the story. At a regional level, average annual growth has occurred well above growth in tourism rates in five of the seven regions in this report: Asia (17% per year), Central America and the Caribbean (13% per year), South America (10% per year), Oceania and the Pacific Islands (10% per year) and Europe (7%), evidence of strongly emerging industries.

Concomitantly, the economic activity generated by whale watch tourists has also grown. In 2008, global ticket sales for whale watching trips generated $870 million (direct expenditure), with subsequent indirect expenditure attributed to whale watching generating $1.2 billion resulting in total whale watching expenditure of $2.1 billion.

Clearly, the industry has grown from its place servicing a select niche tourism market, to one that in parts of the globe has hit the mainstream.

[7] Whale watching in this report includes all wild cetaceans – whales, dolphins and porpoises.
[8] All dollars in this report have been converted to US dollars.

Region	Whale watchers		Regional AAGR	Number of countries		2008 Direct Expenditure	2008 Total Expenditure
	1998	2008		1998	2008	millions	millions
Africa and Middle East	1,552,250	1,361,330	-1.3%	13	22	$31.7	$163.5
Europe	418,332	828,115	7.1%	18	22	$32.3	$97.6
Asia	215,465	1,055,781	17.2%	13	20	$21.6	$65.9
Oceania, Pacific Islands and Antarctica	976,063	2,477,200	9.8%	12	17	$117.2	$327.9
North America	5,500,654	6,256,277	1.3%	4	4	$566.2	$1,192.6
Central America and Caribbean	90,720	301,616	12.8%	19	23	$19.5	$53.8
South America	266,712	696,900	10.1%	8	11	$84.2	$211.8
GLOBAL TOTAL:	9,020,196	12,977,218	3.7%	87	119	$872.7	$2,113.1

The regions:
North America remains the world's largest whale watching destination, with over 6.2 million whale watchers in 2008 – nearly 50% of the world's whale watchers. However, annual average growth has slowed to just under 1.5% per annum and proportion of the globe's whale watchers has dropped from 60% in 1998. Unsurprisingly in an area with some of the earliest commercial whale watching in the world, this report finds a very mature industry spread across all North American countries, accounting for a total of $1.2 billion in expenditure.

Oceania, Pacific Islands and Antarctica have continued to establish themselves as global whale watching locations, the region having grown at nearly 10% per year and accounting for nearly 2.5 million whale watchers in 2008 (20% of global whale watchers). 17 countries and territories now offer whale watching (12 in 1998) from Antarctica to Guam, and across the South Pacific, including the largest regional industries in Australia and New Zealand. Whale watching accounted for nearly $330 million total expenditure in this region.

Africa and the Middle East region is also now a substantial player in the global whale watching industry, accounting for over 1.3 million whale watchers (10% of global whale watchers) and $164 million total expenditure. The industry has shown dramatic expansion in extent, increasing from 13 to 22 countries offering whale watching in the region. However, this is also the only region that has decreased in numbers of whale watchers since 1998 at -1.3% per year, mainly due to a sizeable reduction in whale watchers in the Canary Islands. Excluding this one off change, the industry continues to grow strongly across the rest of the region.

Asia has emerged as the world's important new whale watching destination - growing five-fold from 220,000 whale watchers in 1998 to over 1 million in 2008 (8% of global whale watchers), and accounting for $66 million in total expenditure. From 13 countries in 1998, whale watching activities are now offered in 20 countries from the Black Sea to Japan, having grown at an astonishing 17% per annum since 1998.

Europe's whale watchers have doubled in numbers across the decade averaging 7% growth per annum, which is somewhat surprising for a region with a mature tourism industry. Whale watching has expanded by four new countries to a total of 22, and generates nearly $100 million in expenditure, from Cyprus to Greenland. Europe accounts for 6% of global whale watchers.

South America too is showing strong growth, at an average of over 10% per annum. In 2008, nearly 700,000 people undertook whale watching across the continent, in 11 countries (5% of global whale watchers).

And finally, Central America and the Caribbean. Proportionally a smaller region by numbers (300,000 in 2008; 2% of global whale watchers), this is nevertheless a region that has emerged with substantial growth over the last decade of 13% each year and expanding to 23 countries from 19 in 1998.

Largest and fastest:
In 1998, it was reported that three countries could claim to have taken over one million people whale watching in one year. The 'Million Watch Club' comprised the USA, Canada and the Canary Islands. In 2008 we see that club still remains at only three with Australia joining the USA and Canada, with the US the largest of these by far taking nearly 5 million whale watchers in 2008. Canary Islands, although maintaining a large industry, falls beneath one million whale watchers in 2008.

The list of countries with over 500,000 whale watchers adds the Canary Islands, South Africa and New Zealand (table of top 10 whale watching locations by number of whale watchers below).

Country	Whale watchers in 2008	Percentage of total global whale watchers
USA	4,899,809	38%
Australia	1,635,374	13%
Canada	1,165,684	9%
Canary Islands	611,000	5%
South Africa	567,367	4%
New Zealand	546,445	4%
China (Mainland)	307,000	2%
Argentina	244,432	2%
Brazil	228,946	2%
Scotland	223,941	2%
TOTAL	10,506,620	81%
GLOBAL TOTAL	12,977,218	100%

Countries with the fastest growing whale watching industries (based on average annual growth rate calculations) are led by mainland China (107% growth per annum since 1998), Maldives (86%), Cambodia and Laos together (79%), St. Lucia (74%), Madeira (73%), Venezuela (58%), Costa Rica and Nicaragua (both 56%) and Panama (53%).

Long-term growth:
The industry's substantial growth in the last ten years is a continuation of a much longer growth pattern. Data has been estimated for the whale watch industry since 1981 (Hoyt, 2008) and when assessed together, the numbers show an impressive continuing strength in the global whale watching industry, albeit with growth slowing in the recent decade compared to its early explosion in the 80s and 90s.

Year	Number of whale watchers	Average annual growth rate	Direct Expenditure millions	Total Expenditure millions
1981	400,000		$4.1	$14
1988	1,500,000	20.8%	$11 – 16	$38.5-56
1991	4,046,957	39.2%	$77	$317.9
1994	5,425,506	10.3%	$122.4	504.3
1998	9,020,196	13.6%	$299.5	$1,049
2008	12,977,218	3.7%	$872.7	$2,113.1

Regional Employment:
As detailed in the table below, the global whale watching industry is currently estimated to support over 13,000 jobs worldwide. A large proportion of these jobs are likely to be seasonal, particularly in those locations where the whale watching industry is based on migratory patterns. Where whales or dolphins are resident (which is the case in many dolphin watching locations in particular), the jobs are more likely to be permanent. The lack of permanency of employment is not uncommon in tourism-reliant coastal communities around the world, where much of the local economic activity tends to be based on peak tourist seasons.

Of note is the complementary role the whale watching industry plays in many global coastal communities. In many cases, whale watching employment supplements other industries such as fishing or general nature cruises, with operators undertaking other occupations out of whale season. In some locations, the industry helps to balance out the seasonal fluctuations of coastal tourism industries, where whale arrivals peak in traditionally off-peak seasons such as mid-winter.

Region	Number of jobs supported by whale watching	Number of whale watchers per employee
Africa and Middle East	1,065	1,060
Europe	794	867
Asia	2,191	1,078
Oceania and the Pacific Islands	1,868	543
North America	6,278	750
Central America and Caribbean	393	2,051
South America	615	1,272
GLOBAL	13,205	1,183

Conclusion:
These top line results only begin to reveal the strength of the industry. It is the stories at the local level where we see the best of what this industry can achieve. The picture that emerges is of an industry that provides a new model for use of natural resources - an industry that relies on whales in a non-extractive way. That, when well managed, can be truly sustainable and provide a sharp contrast to the days when whales were seen solely as a resource to be hunted and consumed.

The results in this report make the case that the protection of whales in their natural environment has driven a secondary benefit of significant economic activity in thousands of communities around the world.

Map of the global distribution of whale watching countries:
Countries marked in black had whale watching activities in 2008

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Undertaking a study of this scope takes a collective effort well beyond the demands of a standard day job. The only way this could have been achieved was by the applaudable efforts of the core international team of economists who have ably assisted me on this project for the last year and a half – Tristan Knowles, Roderick Campbell and Hernan Cortez – all exceptionally talented and diligent researchers.

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Importantly, this report builds on many years of very dedicated whale watch socioeconomic research, the majority of which has been undertaken by Erich Hoyt. This report depends on his earlier data, undertaken predominantly for IFAW and the Whale and Dolphin Conservation Society, as the critical baseline. To undertake this project, we were fortunate to have Erich's assistance at hand. I would like to acknowledge Erich's long history of work on this topic, and thank him for his reviews, comments and advice throughout this project. Specific thanks must go to both Erich and Miguel Iñíguez for allowing us to use their data from the 2008 Latin America report.

It would be remiss of me not to acknowledge the International Fund for Animal Welfare. This is an organisation that continues to work tirelessly for the protection of the main asset that underpins this industry - the whales. Some clever modelling may be able to attribute a proportion of the $2.1 billion in total expenditure to IFAW, but that would miss the point. IFAW continues to put its own funding into important pieces of work such as this to support its advocacy for the protection of whales. In particular, I would like to thank Patrick Ramage for his many late night consultations and support in delivering this project, as well as Jake Levenson and Ellie Dickson. Two important former IFAW staff to thank for their assistance early on in this project are Mick McIntyre and Darren Kindleysides.

But probably most importantly for this research are those on the ground (or the sea) in 119 countries and territories. We have spoken to thousands of people and organisations who work with whales over the last year and a half - researchers, operators, scientists, conservationists, government officials, tourism experts – and without their willingness to offer us their insight and data, we could not have completed this report. Many of these people have been incredibly generous in their time and assistance from gathering data, verifying data and aswering a range of questions. In particular, the 3,300 global whale watching operators, many of whom have been kind enough to assist us providing often confidential business data.

Throughout this report we attempt to acknowledge those who have been particularly helpful in specific countries and regions, however the list is far from complete. We would like to offer our sincere thanks to all of those people we have been in contact with for this report.

Simon O'Connor
June 2009

Introduction

Cultures across the globe have interacted with whales and dolphins for centuries. Cetaceans have been both feared and revered alongside being hunted and observed. Across the world, cetaceans (whales, dolphins and porpoises) are rarely referred to without passion.

Throughout much of the last century, cetaceans were largely seen as a resource to be harvested for the many products that could be extracted from these largest of mammals. This large-scale harvesting of marine mammals came close to an end in the 1980s as the globe witnessed the collapse of whale populations. This led the International Whaling Commission to declare a moratorium on commercial whaling in 1986, designed to protect whales from the threat of extinction.

Since this moratorium, the predominant interaction between cetaceans and humans has changed fundamentally for the majority of the globe. And so has the economics of this relationship. Once these animals were used as an economic commodity of a gargantuan scale - a phenomenon that reached its peak on the factory ships of the 1960s. Now there is strong support across much of the globe for seeing whales as an intrinsically valuable global public asset that should be protected for their own benefit and those of the marine ecology.

This shift towards conservation need not require economic sacrifice. As this report, and earlier research, shows conserving whales for conservation purposes has also proven to be sound economic policy, albeit unintentionally.

This Whale Watching Worldwide report demonstrates that there is massive economic activity occurring precisely because of the conservation of whales. Furthermore, this activity occurs across the entire globe - from our most built-up metropolises to the most remote corners of the world, from the largest oceans to the longest rivers.

This is indicative of a wider movement. For too long, our consideration of the environment significantly under valued the benefits we derive from it, including life itself. This is to our own detriment and for that of the globe. This report forms a part of a movement to re-balance those scales. A movement to show the world's people – and policy makers in particular – that it is not only a moral and biophysical imperative to ensure a healthy and balanced environment, but it is also an economic one. Conservation and environmental protection equate more closely with the protection of our economies than has previously been acknowledged.

The economics of a niche tourism industry such as whale watching can be read purely as a good news story of continued strong growth over a decade when tourism globally was thrown some significant challenges such as war, terrorism and pandemics. Although significant, that would underplay the real value of the story told within these pages: this is a story of strong and effective conservation policy delivering economic and development opportunities in all corners of the globe whilst the population of wild cetaceans recovers.

Economists at Large are pleased to present Whale Watching Worldwide, an assessment of the economic contribution of whale watching across the globe in 2008, a special report from the International Fund for Animal Welfare (IFAW). Whale Watching Worldwide tracks the growth of this industry since the early 1990s, just five years after the IWC voted to put in place a moratorium on commercial whaling.

This report is a ten-year update of a seminal report released by IFAW a decade ago that mapped the global whale watching industry in 1998[9]. That report, by Erich Hoyt, showed a burgeoning industry reaching maturity in some regions, but in its infancy in most parts of the globe. Still, at that time, only

[9] Hoyt, E. 2001. Whale Watching 2001: Worldwide tourism numbers, expenditures, and expanding socioeconomic benefits. International Fund for Animal Welfare, Yarmouth Port, MA, USA, pp. i–vi; 1–158.

12 years after the end of commercial whaling, the industry was responsible for a billion dollars of economic activity and attracted more than nine million participants across 87 countries and territories around the world. It is likely that given this level of economic activity, the industry of watching whales had already surpassed the revenues of harvesting whales pre-moratorium.

The Whale Watching Worldwide presents the latest chapter recounting the story of the global whale watching industry. It estimates the breadth of cetacean watching across the globe, examines the countries and territories involved in this activity, the numbers of tourists participating, and calculates the economic expenditure associated with the industry.

The following pages reveal the findings of this ten year update. This industry remains a fine example of the benefits that can be derived by treating our environment with care and respect. Provided that the post-moratorium recovery of cetacean populations continues, and that the industry is appropriately managed so as to not put at risk the animals upon which it depends, the industry's future looks bright indeed.

Welcome to the IFAW and Economists at Large Whale Watching Worldwide report.

Research Methods

Extensive research was undertaken by Economists at Large, and their global team of economists, to assess and evaluate the global whale watching industry in the 2008 calendar year.

The core methods employed for this research involved surveying tourism operators, government tourism offices, academics, researchers and organisations (including non-government organisations) involved in whale and dolphin research, tourism and conservation across all countries and territories covered in this report. Secondary research from resources of relevance including literature reviews and interviews was also gathered. Using this data the economic contribution of the global whale watching industry on a country-by-country basis was modelled and evaluated.

In this report, the term 'countries' also refers to non-sovereign territories and dependencies. This is because it can be more useful to derive detailed information on a geographic level, rather than by sovereignty. For this reason, territories and dependencies have been included in the region in which they are located. For instance, whale watchers in the (Spanish) Canary Islands have been attributed to Africa rather than to Europe to allow more meaningful comparisons and groupings.

Within this report, the globe is split into seven regions, defined to allow consistency with earlier work and for simplicity of reporting: Africa and Middle East; Europe; Asia; Oceania, Pacific Islands and Antarctica; South America; Central America and the Caribbean; and North America.

In order to research effectively on a global scale, the primary research tool - a survey of whale watching operators (see Appendix 1) - was translated into seven languages: English, French, Spanish, Russian, Chinese – traditional and simplified – and Japanese. Our team of researchers was qualified in 11 languages. Over 200 countries and territories were researched in total – those without a whale watching industry are obviously not featured in this report, but they were nevertheless examined to confirm that no such industry existed.

Surveying of whale watch tourism operators around the globe was essential to the research process. In every country, researchers aimed for a minimum operator response rate of 25%. For each of the seven regions covered, this target response rate

was achieved. Responses in many countries were well above this rate, often close to 100%.

In total, many hundreds of operators and stakeholders around the globe were contacted and contributed valuable information for this report. For all countries reported on in this report, local in-country or in-region sources were used to verify final data.

By applying this methodology, the figures reported in this report are by nature estimates and should be treated as such. They should be applicable as an indicator of magnitude and comparison only.

Definitions of whale watching

For the purposes of this report, **'**whale watching**'** includes the viewing of all cetacean species, including whales, dolphins and porpoises (but not whale sharks nor basking sharks). It does not include captive animals or swimming with trained animals, only watching of wild animals in their natural environment.

Whale watching usually involve boat-based tours, but other whale watching occurs from land or by air (helicopter or plane). Boat-based research trips are included whether involving voluntary or paid participation. There are some locations around the world where whales are very close to the shore, allowing for observation from well-placed vantage points, often promoted by local tourism offices. Land-based whale watching can be part of a formal tour, but the locations often have no entry ticket price. In the latter situation there is no direct expenditure from participants, but indirect expenditure can be accounted for (see below for a discussion of direct and indirect expenditure). These locations are stipulated in the report where they occur.

A participant on a whale watching trip is termed a whale watcher. That is, the person who decides to participate in a whale watching trip/episode – usually buying a ticket to do so.

In this report, a distinction is made between 'dedicated' and 'opportunistic' whale watch trips and operators.

Dedicated
This refers to trips that are advertised explicitly as whale watching experiences, whereby whale or dolphin viewing is the primary intention of the experience and the motivation for participants to undertake the trip.

Opportunistic
Those activities whereby the viewing of whales is not the primary intention or motivation for taking the trip, yet provides a part of the attraction for tourists to participate. For example, an opportunistic whale watching trip may be a nature cruise that visits seal colonies as well as porpoises, or where whale watching is undertaken on one day of a multi-day trip.

Operator numbers
Whale watching operators are extremely diverse across the many countries. Some are big businesses heavily capitalised with many or large boats, while in other areas an operator can be a local boat owner or fisherman who takes people on trips when demand from tourists exists. As a result, the number of operators reported can be misleading. Some countries can have few operators (i.e. whale watch businesses) but these are large businesses (with many vessels), while others can have more operators but only small numbers of whale watchers. Numbers of whale watch operators are therefore only part of the scale of whale watch businesses in a country.

ECONOMICS

This report sets out the following key data points to evaluate the global whale watching industry:

- Growth of the whale watching industry;
- Economic contribution of the industry; and
- Total whale watchers participating in the industry.

For each of these points a detailed explanation follows.

Growth

This report aims to provide estimates of growth patterns of the whale watching industry over the past decade. Growth is based on numbers of whale watchers. Patterns are assessed based on numbers of whale watching participants undertaking trips in the 2008 calendar year, where 2008 data was available. This report was undertaken over one and a half years (late 2007 to early 2009), but data for 2008 whale watch seasons was not available for all locations**,** and so in a minority of cases, data relates to 2007.

Growth is measured against the equivalent numbers of whale watch participants reported in the 2001 IFAW report (Hoyt, 2001) and is presented as an annual average growth rate (AAGR) – see below on how this was calculated.

For Japan, Australia, New Zealand, Oceania and Latin America, interim data between the years of 1998 and 2008 was available in some instances and is reported if so.

In both Oceania and Latin America, recent reports were relied upon as the source data used in this report (Economists at Large, 2008; Hoyt & Iñíguez 2008). Data has been updated to 2008 figures, either by new research or by projecting growth trends based on prior growth combined with tourism arrivals growth. Where growth is projected in this way, there is a note in the country text.

The research estimates whale watching visits or activities and so counts a whale watcher repeatedly if he/she undertakes more than one trip. This methodology follows the 2001 IFAW Report distinction between whale watch 'visits' and 'visitors' and captures the additional expenditure for each whale watch episode. However, the distinction would rarely involve counting one person multiple times, as most occurrences of whale watching tend to be a one-off activity.

Average annual growth rate (AAGR)

The AAGR is calculated assuming a geometric rate of growth from 1998 results to those for 2008. This is interpolated across the intervening period on the assumption that the rate of growth in participant numbers follows a constant pattern. This therefore assumes a linear rate of growth.

One particularity of the AAGR calculations is worth noting. Where in a figure of 'Minimal' or 'None' was reported for the number of whale watchers in a country, a figure of 250 was substituted in order to enable us to calculate the AAGR. The reason for doing this was to reflect a rate of growth in the interpolated period, as growth rates cannot be calculated using zero. A low rate of 250 is assumed reasonable as an average low and insignificant figure, under which it is only a few countries that specific numbers of whale watchers are counted (as opposed to 'Minimal' being reported). Where this is used in the report (regional summaries), it is noted, however we reflect this in country summaries by using the simple '~' before the AAGR figure to signify an estimated growth rate.

Economic Contribution

This report provides an estimate of the economic activity generated by the worldwide whale watching industry in 2008. This estimate is based on a calculation of the direct economic expenditure on whale watching activities PLUS an estimate of indirect expenditure by the participant ('whale watcher') that can be attributed to the whale watching activity.

In calculating the economic benefits of whale watching, therefore, expenditure attributable to the activity is being calculated. For this discussion, a range of issues needs to be clarified:

Economic literature in general draws a distinction between direct and indirect expenditure. Direct expenditure is that made by a participant in relation to an activity. For instance, the sale of tickets to travel on a whale watching vessel provides a gross financial benefit resulting from whale watching, and constitutes direct expenditure. Normally, the cost of food, accommodation, travel etc to participate in a whale watching event would also (subject to conditions) be attributed to the whale watching activity even when not included in the price.

Generally in economics, 'indirect' expenditure is generated when the business that earns the direct expenditure then spends that revenue on goods and services as inputs to their activities.

The 2001 IFAW report, however, uses a definition of expenditure different to that used in the general economic literature. The 2001 report, drawing on conventions from previous assessments, defines indirect expenditure as expenditure by the participant which supports the whale watch trip. In other words, costs such as accommodation, transport and food not included in the ticket price. Direct expenditure is expenditure on tickets and items directly related to the trip itself.

This report adopts the methodology of the 2001 Report, both for the sake of consistency and because this method reflects more closely a gross expenditure benefit derived from whale watching activity.

The fact that the costs incurred by the businesses involved are not calculated has been a criticism of this methodology in the past. However, this is more a criticism of using the term economic values to be something that it is not. In this case, the gross expenditure calculated using the current methodology and that of previous reports reflects an important gross figure for economic activity due to the existence of a whale watching industry. Like the calculation of gross domestic product, the figure is unashamedly gross, not net. It is therefore not an inaccurate method for demonstrating the level of economic contribution to a region or country.

A second criticism that has been offered of this methodology is the issue of determining how much additional expenditure (in this report termed indirect expenditure) can be attributed to the whale watching activity. For this report, a very conservative percentage of average daily inbound tourist expenditure was attributed to the whale watching activity. This estimate is likely to undervalue the total contribution of the whale watcher to the local economy rather than overvalue it, as the percentage used is usually well below accepted tourism multipliers. Economists at Large believe this is a strongly defensible methodology to employ.

As noted above, this report adopts the same approach as the 2001 IFAW report to allow direct comparison with that report. Therefore, direct and indirect expenditure are defined as follows:

Direct expenditure
The direct whale watch ticket purchase price paid by participants. Where direct expenditure is reported in the country summaries, it has been determined by detailed modelling of operator survey results, rather than by simply taking an average ticket price and multiplying by the number of whale watchers. The direct expenditure figure calculated is determined by reference to whether the whale watching activity is dedicated or opportunistic as below:

For *dedicated whale watching participants*, 100% of the ticket's price is multiplied by the total number of dedicated whale watchers purchasing said tickets. Ticket price information is taken from operator responses to surveys – where this is unavailable, the data used is that available through secondary sources, or an average price of a ticket for the country as a whole. The ticket price is separated into adult and children's tickets, and the appropriate price applied.

For *opportunistic whale watching participants,* in general 50% of the ticket price is multiplied by the number of opportunistic whale watchers, accounting for the fact that whale watching is not the primary reason for purchasing the ticket. In some case where more detail was known, a more precise proportion is attributed.

Indirect expenditure
The expenditure into the local economy that can be attributed to the person participating in the whale watch activity. In addition to direct expenditure on the ticket, the other expenditure the whale watcher makes on the day they undertake the whale watching activity can in part be attributed to that activity. For example, a tourist may undertake a

whale watching trip and another activity on the same day of their holiday (depending on the length of tour). The expenditure the tourist makes for the rest of that day can in part (~50%) be attributed to the whale watch activity.

In order to attribute an appropriate portion of this indirect expenditure to the whale watching industry, a portion of the average daily expenditure for international inbound tourists in the relevant country was attributed to the whale watch activity. Where the country did not publish its average daily inbound tourist expenditure figures, data was taken from either operator responses, the World Tourism Organisation statistics, or an average for the region. In certain countries, much more detailed local visitor daily expenditure figures were used when available.

The tourist expenditure figure was used as follows:

For *dedicated whale watching participants*, 50% of the daily average tourist expenditure was attributed to those participants on whale watch trips up to two hours long, and 100% for trips from 2.5 hours to a full day.

For *opportunistic whale watching participants,* 25% of the average tourist daily expenditure was attributed.

The use of the inbound tourist expenditure figure is seen to be a conservative estimate of level of expenditure by whale watch tourists for two main reasons:

Whale watch tourists tend on average to be 'higher-end' tourists with higher levels of expenditure than average inbound tourists. This has been demonstrated by data collected for this report and previous reports (Hoyt, 2001 and Economists at Large, 2004, 2005, 2008a,c), as well as by the fact that a whale watching ticket is itself often priced above the average daily expenditure figure, demonstrating that whale watch tourists have a higher than average expenditure level.

Furthermore, the average inbound tourist figure groups together different classes of tourists – those visiting on business, those seeking leisure and those visiting friends and relatives (VFR). The latter group has very a low average expenditure level, as they tend not eat out at restaurants or rent hotel accommodation as readily as leisure travelers. Including these visitors in overall average figures leads to a lowering of that figure overall.

The combination of these two facts indicates that the level of economic expenditure attributed to whale watching in this report remains at a very conservative level.

This methodology for calculating indirect expenditure has been applied across this global study in order to allow us to steamline the research to meet the large task of covering the broad scope of the report. However, because we have not gained more precise indirect expenditure data from operators and tourism offices in each country, there are some instances where the ratio of indirect to direct expenditure in 2008 is much lower to that reported in the previous time periods. This is usually due more to a different calculation methodology used in this report rather than a substantial drop off in expenditure levels of whale watch tourists.

Importantly, as stated above, growth of the industry is measured based on tourist numbers rather than dollar values for this reason. Direct expenditure, as it is a close proxy for operator revenues, is a better measure of growth of the industry than indirect, as it is modelled precisely, rather than extrapolated.

Total expenditure

Total expenditure is the sum of direct and indirect expenditure by whale watchers. By aggregating these figures, the additional benefit gained by the industry to the host country can be reflected rather than merely the ticket price.

Currency

Dollars in this report are all produced in US dollars (unless otherwise stipulated). They have been converted from local currency to US dollars in

February 2009 for consistency. Despite care being taken, fluctuations in global currencies against the US dollar will lead to some distortion of the value of whale watching in certain countries and therefore make comparison from year to year difficult. This is further justification for growth calculations based on whale watch numbers rather than dollar values. Additionally, due to these currency fluctuations, dollar values for the industry should be seen as indicative rather than precise.

Employment Levels

To calculate regional and global employment estimates for the global whale watching industry, regional revenue-per-employee figures were calculated where data was available (i.e. from operator survey results). From these regional revenue-per-employee figures, we then estimated the employment levels for countries where actual employee estimates were unavailable. Estimates were calculated by dividing direct expenditure (revenue) by the regional revenue-per-employee calculations. From this, country level employment, regional and then global employment estimates were calculated.

For these purposes, employment does not distinguish between permanent and seasonal employment; it is based on full-time equivalent employment levels.

Limitations

The data in this report provide an estimation of the economic contribution of the whale watching industry to countries around the globe from an expenditure basis and is provided as best available data within the limits of scope, time and budget. In light of this, the data reported within is provided as an estimate of the size of the whale watching industry across the world, and is best used to identify trends rather than precise numbers.

Data for this report were collected through a survey process and desktop review of available information, and as such depends on those primary and secondary sources for its reliability. There was no on-the-ground data collection or verification undertaken by Economists at Large. Instead local in-country sources were used to verify data in all countries. For all data used in this report, a variety of sources were consulted in order to calculate average values. Where possible, data are averaged across operator survey responses, tourism data and other stakeholder discussions.

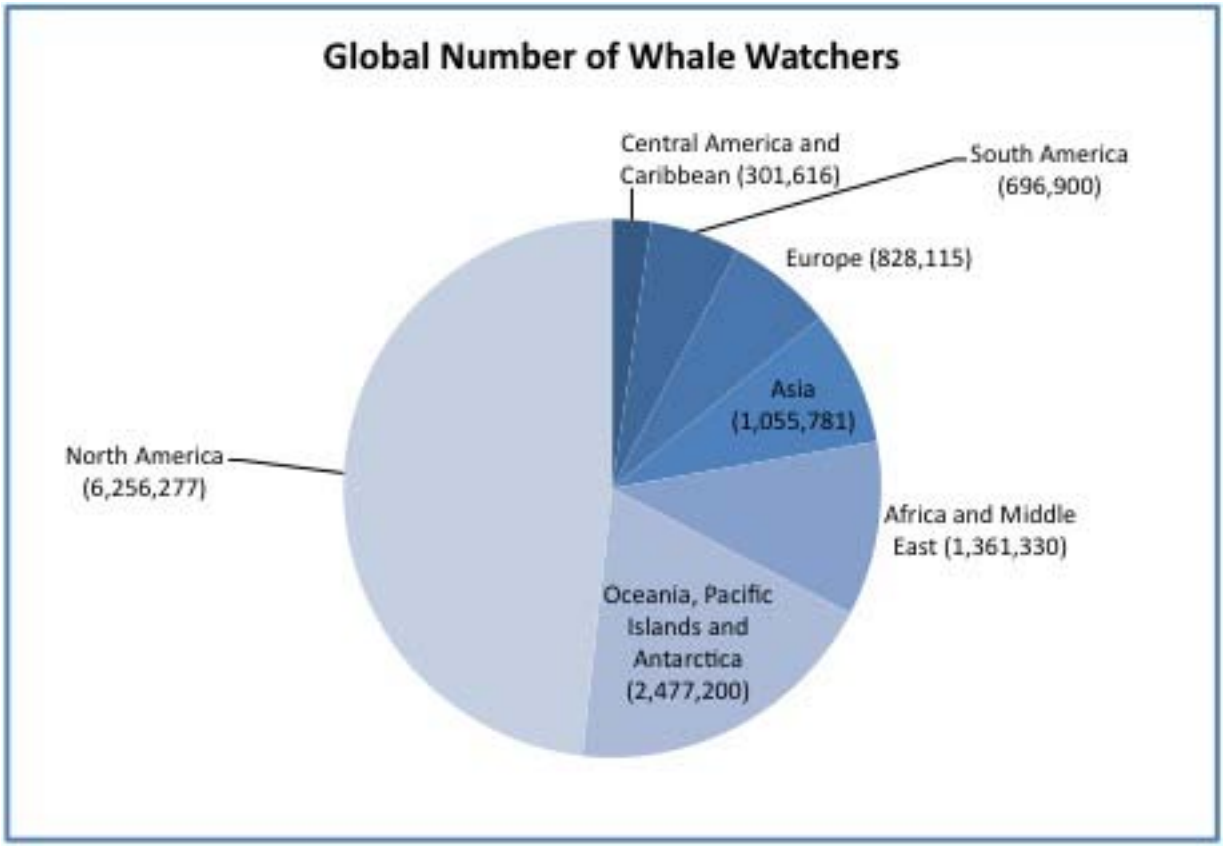
As mentioned above, currency conversions across the significant number of countries covered in this report can lead to some distortions in the dollar values reported. This is particularly the case at the time of writing due to the high volatility of currencies during the global financial crisis. To mitigate for this, growth is based on tourist numbers, not expenditure values.

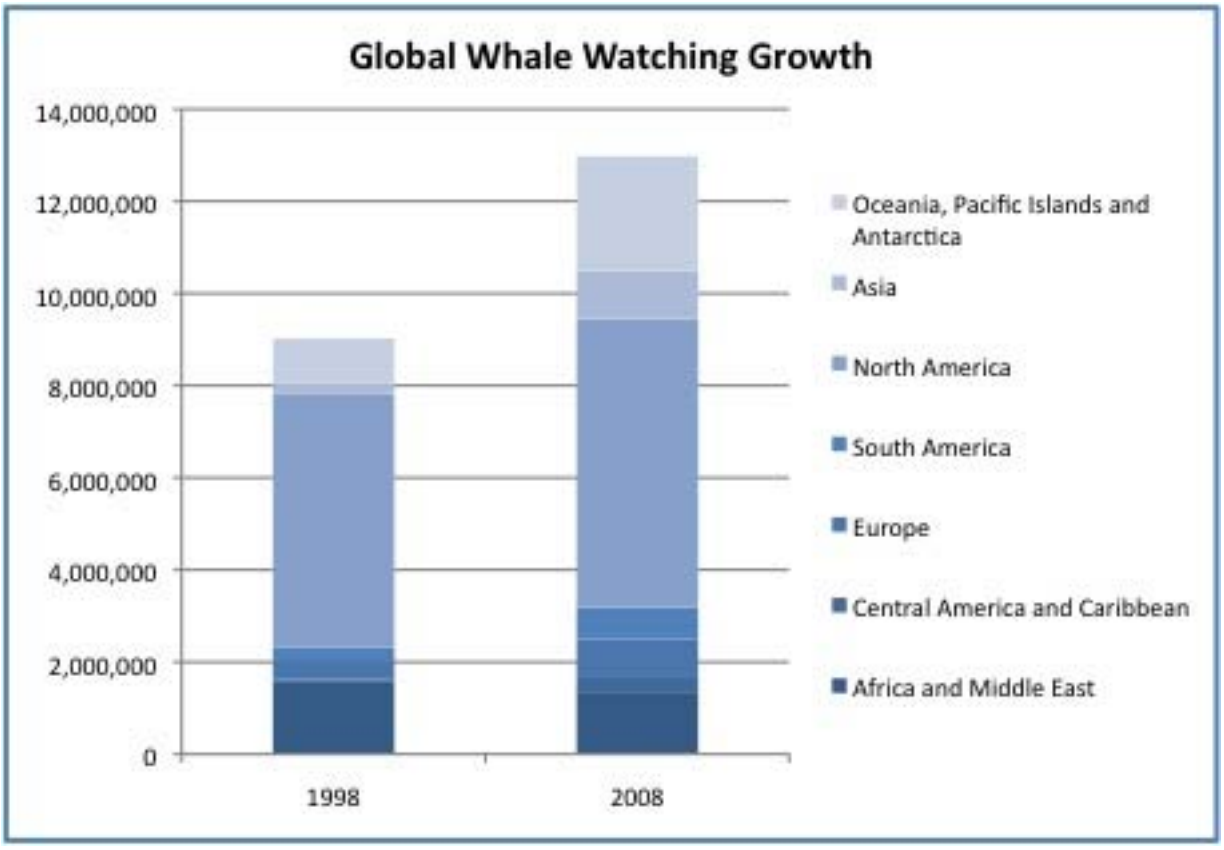
This report reflects the views of the authors Economists at Large.

GLOBAL WHALE WATCHING 2008

Region	Whale watchers		Regional AAGR	Number of countries		2008 Direct Expenditure	2008 Total Expenditure
	1998	2008		1998	2008	millions	millions
Africa and Middle East	1,552,250	1,361,330	-1.3%	13	22	$31.7	$163.5
Europe	418,332	828,115	7.1%	18	22	$32.3	$97.6
Asia	215,465	1,055,781	17.2%	13	20	$21.6	$65.9
Oceania, Pacific Islands and Antarctica	976,063	2,477,200	9.8%	12	17	$117.2	$327.9
North America	5,500,654	6,256,277	1.3%	4	4	$566.2	$1,192.6
Central America and Caribbean	90,720	301,616	12.8%	19	23	$19.5	$53.8
South America	266,712	696,900	10.1%	8	11	$84.2	$211.8
GLOBAL TOTAL:	9,020,196	12,977,218	3.7%	87	119	$872.7	$2,113.1

NOTE: Figures for 1998 may differ slightly when compared to Hoyt 2001 due to slight realignment of regions – this is the case for Asia and Africa.


Global Number of Whale Watchers
Central America and Caribbean (301,616)
South America (696,900)
Europe (828,115)
Asia (1,055,781)
North America (6,256,277)
Africa and Middle East (1,361,330)
Oceania, Pacific Islands and Antarctica (2,477,200)


Global Whale Watching Growth
14,000,000
12,000,000
10,000,000
8,000,000
6,000,000
4,000,000
2,000,000
0
1998
2008
Oceania, Pacific Islands and Antarctica
Asia
North America
South America
Europe
Central America and Caribbean
Africa and Middle East

Regions

The following section of the report outlines findings of this global whale watching study by region and country/territory. The regions are set out in the order as below, with countries organised alphabetically. Whale watching countries with large numbers have been divided into states or local regions for a more detailed overview.

Africa and Middle East

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	46,150	N/A	3	$1,150,000	$2,996,000	$4,146,000
1994	282,550	82.9%	8	$7,379,000	$19,268,000	$26,647,000
1998	1,552,250	53%	13	$19,022,000	$115,882,000	$134,904,000
2008	1,361,330	-1.3%	22	$31,681,343	$133,736,516	$163,475,695

Europe

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	158,763	N/A	8	$2,161,000	$3,429,000	$5,690,000
1994	204,627	8.8%	16	$4,123,000	$17,862,000	$21,985,000
1998	418,332	19.6%	18	$11,048,000	$34,981,000	$46,029,000
2008	828,115	7.1%	22	$32,346,906	$65,290,135	$97,637,041

Asia

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	10,992	N/A	2	$371,000	$4,377,000	$4,748,000
1994	73,192	88.1%	12	$3,887,000	$20,714,000	$24,601,000
1998	220,465	31.7%	13	$7,735,000	$36,969,000	$44,704,000
2008	1,055,781	17.2%	20	$21,573,315	$44,365,015	$65,938,330

Oceania, Pacific Islands and Antarctica

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	376,375	N/A	3	$10,051,000	$36,518,000	$46,569,000
1994	540,200	12.8%	6	$18,622,000	$49,088,00	$67,710,000
1998	976,833	15.9%	12	$35,494,000	$87,766,000	$123,260,000
2008	2,477,200	9.7%	17	$117,180,363	$210,688,889	$327,869,252

North America

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	3,430,225	N/A	3	$46,230,000	$179,045,000	$225,275,000
1994	4,074,195	7.9%	4	$65,791,000	$227,606,000	$293,397,000
1998	5,500,654	7.8%	4	$194,575,000	$399,692,000	$594,267,000
2008	6,256,277	1.3%	4	$566,200,198	$626,352,749	$1,192,552,947

Central America and Caribbean

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	2,034	N/A	6	$1,524,000	$210,000	$1,734,000
1994	19,212	111.4%	12	$3,526,000	$3,831,000	$7,357,000
1998	90,720	47.4%	19	$5,968,000	$5,117,000	$11,085,000
2008	301,616	12.8%	23	$19,500,388	$34,267,141	$53,767,529

South America

Year:	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	22,418	N/A	5	$15,447,000	$11,245,000	$29,692,000
1994	231,530	117.8%	8	$19,117,000	$43,464,000	$62,581,000
1998	266,712	3.6%	8	$25,667,000	$69,141,000	$94,808,000
2006	582,547	10.3%	10	$63,614,528	$102,367,103	$165,981,631
2008 Projection	696,900	9.2%[10]	10	$84,210,754	$127,576,320	$211,787,074

[10] AAGR for ten years 1998 to 2008 is 10%; for 2006-2008 it is 9.2%

AFRICA AND MIDDLE EAST

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	46,150	N/A	3	$1,150,000	$2,996,000	$4,146,000
1994	282,550	82.9%	8	$7,379,000	$19,268,000	$26,647,000
1998	1,552,250	53%	13	$19,022,000	$115,882,000	$134,904,000
2008	1,361,330	-1.3%	22	$31,681,343	$133,736,516	$163,475,695

Africa and the Middle East have a large whale watching industry that has expanded into more countries in the region since 1998 – the number of countries with whale watching activities has risen from 13 to 22. In terms of tourist numbers, overall, whale watching tourist numbers have decreased slightly between 1998 and 2008 at an average rate of -1.3%.

The decrease in aggregate numbers for Africa and the Middle East largely obscures the real story of whale watching in this region which is of an industry that continues to expand across more countries. The key reason for the slight drop in whale watchers over this decade is due to a reduction in numbers in the Canary Islands (see Canary Islands section below for more detail).

To highlight this, when looking only at boat-based whale watching (excluding land-based estimates for South Africa), and excluding the Canary Islands, the region has experienced a rapid expansion over the decade, growing at 16% per year from approximately 50,000 tourists in 1998 to over 220,000 in 2008.

Although South African tourists account for a large proportion of overall whale watchers in southern Africa (both in South Africa and neighbouring Namibia and Mozambique), whale watching in Africa is for the most part reliant on international visitors. With increasing international arrivals to Africa in the last decade, the industry has clearly benefited. Between 1995 and 2005, international arrivals in Africa have increased from 20 million to 37 million, a growth rate of over 6% per year (World Tourism Organization, 2006).

Since 1998, Bahrain, Benin, The Gabon, Mauritius, Mayotte and Réunion have emerged as new whale watching countries, with a combined annual passenger count of over 40,000 and resulting direct expenditure of approximately $1.5 million. The Gambia, Egypt, Namibia, Mozambique, South Africa and Madagascar, which already had emerging whale watching industries in 1998, have also shown high growth rates, accounting for over 160,000 whale watchers and $6.1 million in direct expenditure in 2008.

Where cetaceans are present and a stable tourism industry exists, cetacean watching has developed in this region as successfully as any other. Egypt provides an exciting example of a young, well-managed dolphin watching industry. Oman has a growing number of operators, a wide variety of cetaceans and active conservation, government and industry organisations.

However, issues affecting further development of whale watching tourism in Africa and the Middle East are the same issues affecting development more broadly in the region. Regional political instability often hinders the development of a climate that would encourage further capital investment to develop and promote industries. Insufficient funds are then available to properly manage marine resources and often contribute to a general lack of information regarding species present in coastal waters. Industries that have developed and may impact on cetacean populations – tourism or otherwise – are often under managed due to this lack of resources, which past experience would indicate can quickly lead to unsustainable practices that can impact adversely on cetacean populations.

Kenya presents an example of a country that, due to political instability early in 2008, saw its overseas tourism industry rapidly shrink in 2008. With it went as many as 10,000 potential whale watching tourists (anecdotally reported for 2007), along with the associated revenues that would have accrued to an estimated 23 local boat owners and four dedicated operators. In 2009, whale watching tourism in Madagascar may also suffer from political instability, which has so far impacted adversely on tourism. With nearly 16,000 whale watchers in Madagascar, contributing just over $1.8 million to the economy, such political instability impacts adversely on both investor and tourist confidence in a country.

In the long run, if sustainably managed, whale watching holds great potential in Africa and the Middle East, with many species and a variety of whale watching experiences available along the vast coastlines of the region. If appropriately managed, whale watching could present an important ecotourism industry to further develop African economies while contributing to preserving the marine environment and biodiversity.

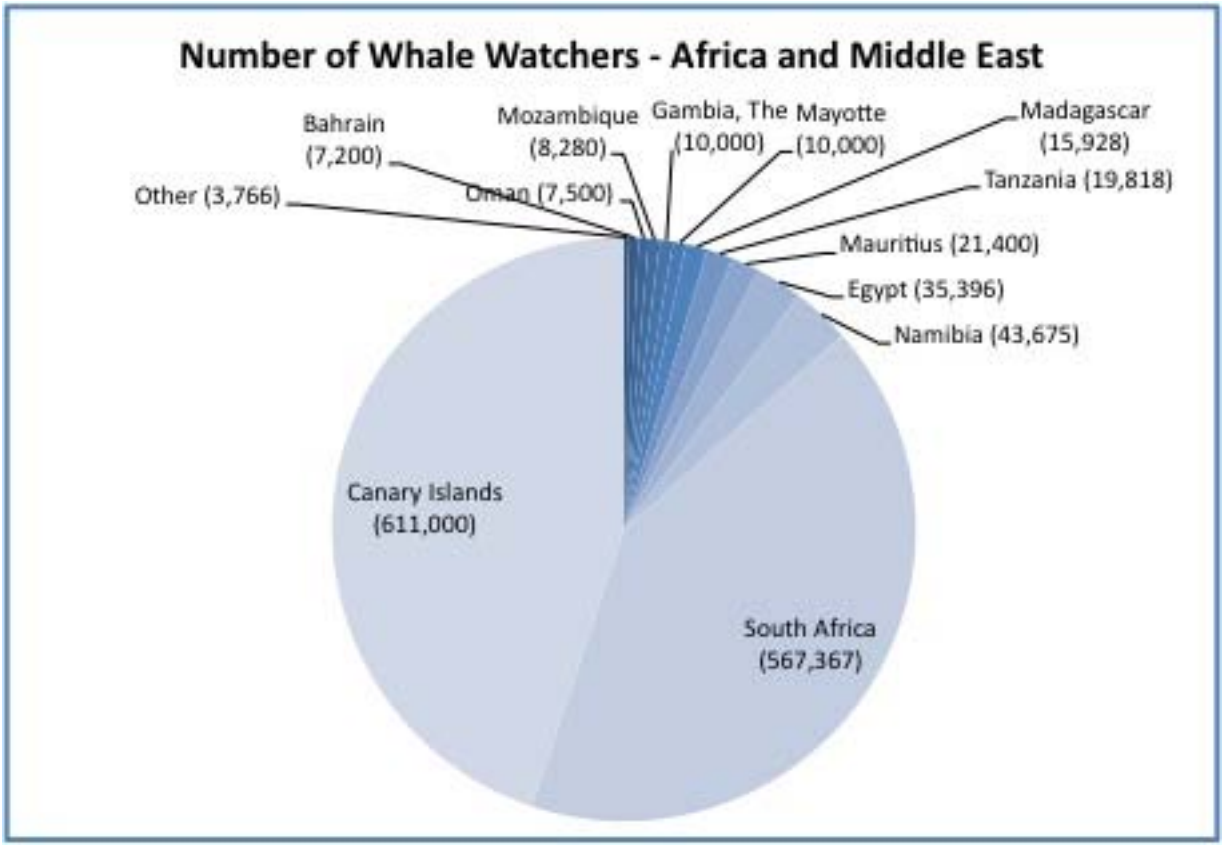
Regional Acknowledgements:
The following people offered particular assistance across many of the countries in the region and we would like to acknowledge their important contribution –Koen Van Waerebeek (Centro Peruano de Estudios Cetológicos), Tim Collins (Wildlife Conservation Society) and Yvette Razafindrakoto (Wildlife Conservation Society).

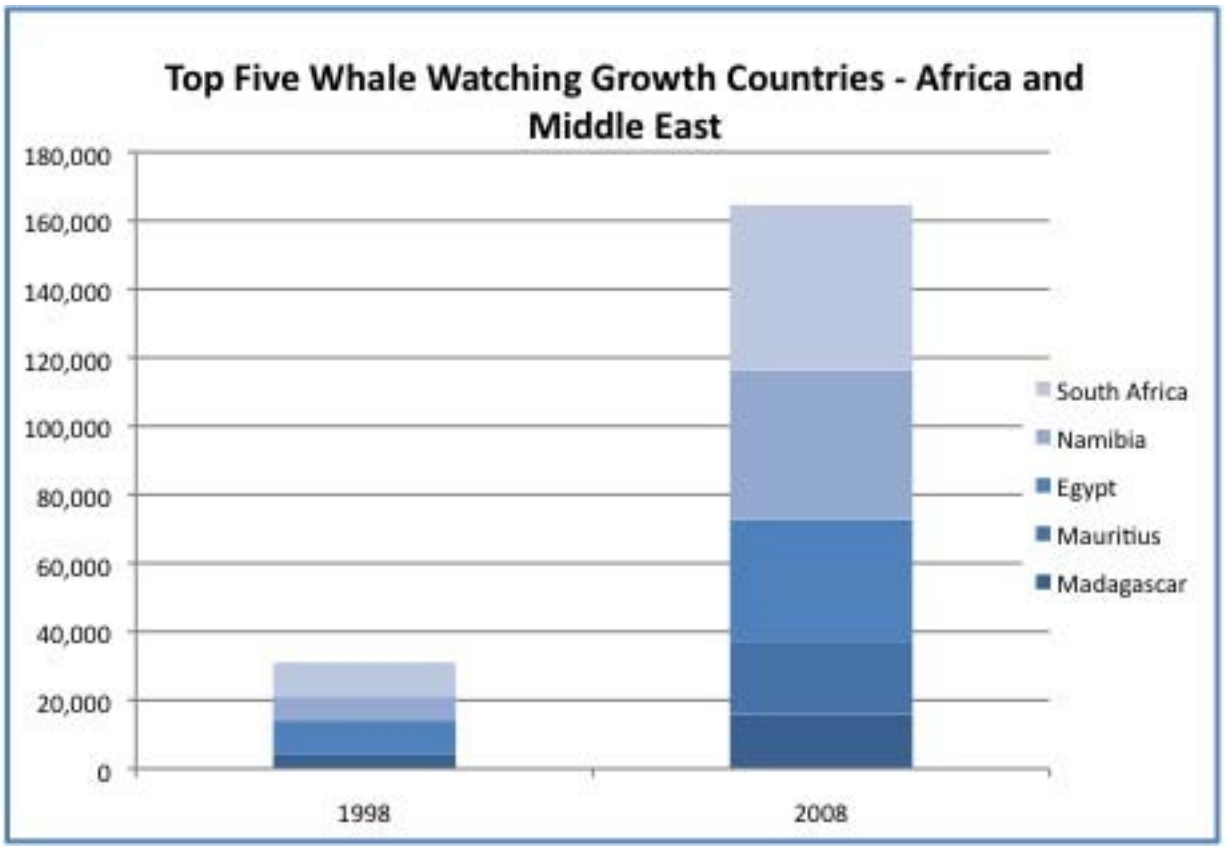
References (used in all countries):
World Tourism Organization, 2006, Tourism Market Trends, International Tourist Arrivals by Country of Destination – Africa, World Tourism Organizational (UNWTO)

Summary of country results

Country	Number of whale watchers		Growth between 1998 and 2008
	1998	2008	AAGR
Bahrain	None	7,200	39.9%
Benin	None	218	N/A
Canary Islands	1,000,000	611,000	-4.8%
Egypt	10,000	35,396	13.5%
Eritrea	Minimal	None	N/A
Gabon	None	300	1.8%
The Gambia	1,000	10,000	25.9%
Kenya	Minimal	Minimal	N/A
Madagascar	4,000	15,928	14.8%
Mauritania	50	Minimal	0%
Mauritius	None	21,400	56%
Mayotte	None	10,000	44.6%
Morocco	None	Minimal	
Mozambique	500	8,280	32.4%
Namibia	7,000	43,675	20.1%
Oman	4,700	7,500	4.8%
Réunion	None	3,248	29.2%
São Tomé and Príncipe	None	Minimal	N/A
Senegal	Minimal	Minimal	N/A
Seychelles	None	Minimal	N/A
South Africa	510,000	567,367	1.1%
Tanzania	15,000	19,818	2.8%
REGIONAL TOTAL	1,552,250	1,361,330	-1.3%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.


Number of Whale Watchers - Africa and Middle East
Bahrain (7,200)
Mozambique (8,280)
Gambia, The (10,000)
Mayotte (10,000)
Madagascar (15,928)
Other (3,766)
Oman (7,500)
Tanzania (19,818)
Mauritius (21,400)
Egypt (35,396)
Namibia (43,675)
Canary Islands (611,000)
South Africa (567,367)


Top Five Whale Watching Growth Countries - Africa and Middle East
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1998
2008
South Africa
Namibia
Egypt
Mauritius
Madagascar

Bahrain

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	7,200	39.9%	1	$175,680	$270,000	$445,680

★ Capital City: Manama
Whale Watch Locations:
01: Al Dar Islands

Bahrain has a small dolphin watching industry with one operator. The operator is a marina business, with dolphin watching being only one of the activities that the business offers. The trips run all year round and can be organised any day when there are customers, except Sunday – weekends are particularly popular (the weekend being Friday and Saturday in Bahrain).

Trips were formerly offered by the Bahrain Yacht Club to see three pods of Indo-Pacific humpback dolphins with up to ten dolphins in each group. The dolphins feed in the shallow waters of the Alba Terminal near Al Dar Island from around 10:30 each morning and head back out to sea around 3pm.

At present, dolphin watching trips are mainly for long-term residents of Bahrain. Although dolphin watching is not an activity that attracts tourists to the region, the trips seem popular and the industry may grow in the future.

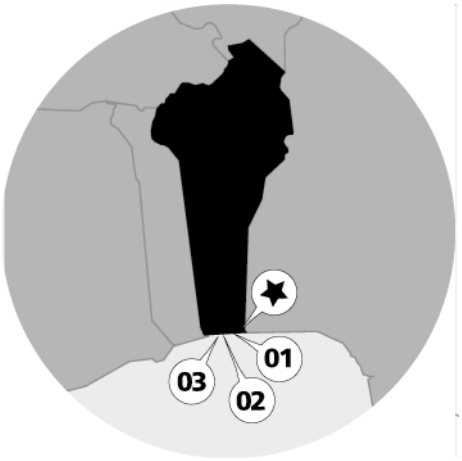
Main species:	Small cetaceans: *Indo-Pacific humpback dolphin*
Tourists:	
International	While most customers are not born in Bahrain, many are long term residents
Domestic	
Types of tours:	Boat-based cruises to see pods of dolphins
Average adult ticket price:	$27
Estimated employment numbers:	2
Main whale watch season:	Year-round

Acknowledgements:
Thanks to the operator and Peter Watt, formerly of Bahrain Yacht Club.

Benin

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	218[11]	N/A	1	$6,377	$16,350	$22,727

★ Capital City: Porto-Novo
Whale Watch Locations:
01: Cotonou
02: Oudah
03: Grand-Popo



Benin has one operator that runs whale watching trips, mostly for expatriate workers from France, the United States, The Netherlands and Belgium[12]. The trips are still exploratory in nature and a local non-government organisation (NGO) has struggled to find a boat to run consistent trips. The average ticket price for adults is $35 and up to eight full-time jobs are directly supported during the peak season. Most whale watching occurs from the towns of Cotonou, Oudah or Grand-Popo, in the Bight of Benin.

The industry is focused mainly on humpback whales due to tourist demand, although bottlenose dolphins are also commonly sighted.

While the industry is currently small, cetacean surveys conducted from 2000 onwards indicated that as many as 15 different cetacean species are present in the waters off Benin. Studies of cetaceans in these waters also revealed that the population of humpback whales in the area is perhaps one of only two humpback populations in the world that migrate across the equator annually to breed[13]. Results from these exploratory surveys also indicated that while sightings occurred on each trip, the sighting rate is only one whale per two hours (approximately). Survey results from operators indicated a sighting rate of 70%, which is lower than most regions globally where whale watching industries have developed.

While increased whale watching tourism in Benin is possible, a lack of capital to invest in boats, low levels of awareness of the tourism potential of whale watching and low levels of tourism to Benin more generally present significant barriers. While Benin experienced negative tourism growth between 1990 and 2000, tourism between 1995 and 2004 grew at an average annual rate of 2.6%. Increasing shipping activity in the Bight of Benin, plans to construct a second container port and the deployment of region-wide underwater gas-pipelines may present a risk to populations of cetaceans and could hinder the further development of a whale watching industry.

[11] Not including land-based figures, which only occur infrequently when there is an exceptional whale watching opportunity and hence are very inconsistent in nature and not included in this report.
[12] Exploratory surveys conducted between 2000 and 2002 included local Beninise tourists. These tours were free but participants were requested to provide information on their enjoyment of the trip and willingness to pay for whale watching.
[13] The other humpbacks that migrate across the equator to breed are the Southeast Pacific population.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin*
Tourists:	
International	100%[14]
Domestic	
Types of tours:	Boat-based, dedicated, exploratory tours to assess interest in whale watching tourism
Average adult ticket price:	$31
Estimated employment numbers:	8
Main whale watch season:	July to November

Acknowledgements:
Joséa S. Dossou-Bodjrènou (Natural Tropical ONG) and Sévérin Tchibozo (CERGET)

References:

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Van Waerebeek, K., 2003, A newly discovered population of humpback whales in the Northern Gulf of Guinea, Convention on the Conservation of Migratory Species and Wild Animals (CMS) Bulletin, No. 18, United Nations Environmental Programme.

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[14] Mostly expatriate workers from Europe and the USA. Test tours conducted in 2001 indicated that locals would also be willing to go whale watching if the ticket price were around US $10.

Canary Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	40,000	N/A	N/A	1,144,000	2,860,000	4,004,000
1994	425,000	120%	N/A	7,150,000	17,875,000	25,025,000
1998	1,000,000	24%	24	17,770,000	44,425,000	62,195,000
2008	611,000	-4.8%	29	$21,542,800	$34,984,700	$56,527,500

★ Capital City: Las Palmas, Gran Canaria
Whale Watch Locations:
01: Los Gigantes (SW Tenerife Island)
02: Los Cristianos (SW Tenerife Island)
03: Puerto Colon (SW Tenerife Island)
04: Valle Gran Rey (La Gomera Island)
05: Puerto Rico & Puerto Mogan (Gran Canaria Island)

The Canary Islands, administrated as part of Spain, attract the highest number of cetacean watchers within the African region. Conservative estimations for 2008 result in 611,000 whale watchers, representing a negative AAGR of 4.8% against an estimated 1,000,000 whale watchers in 1998. However, it has to be taken into account that, according to local organisations and authorities surveyed for this report, estimations made at that time were influenced by an exceptionally good season in terms of poor weather impacting on days available to take whale watching tours - estimated at 300-315 clear whale watching days in 1998, a particularly long season rarely found in any whale watch locations around the world (Urquiola et al, 1999). It is considered that the 2008 season was much shorter due to weather impacts. In addition, 1998 saw a booming number of vessels on the water with dedicated and opportunistic whale watchers, but also there were reports of illegal boat trips occurring at the time. These factors combined led to the large numbers reported in 1998.

The reduction in numbers of whale watch tourists in 2008 can be explained in part also by current regulatory issues, specifically the number of boat licenses having been reduced from 52 in 1998 to around 35-37 in 2008. Whale watching tours have over the last decade also improved in quality, with higher standards enforced through regulations. It is reported that the earlier illegal operators have now ceased their operations.

Whale watching in the Canaries is strongly focused on Tenerife Island, which accounts for an estimated 85% of total whale watchers. Twenty-one of the 29 tour operators identified for this report are located in Tenerife, and at least 10 of these offer dedicated whale watching with many others offering trips with a split focus of snorkelling and whale watching. Cetaceans are spotted off Adeje coast in the southwest, where a high number of operators are based, departing from the localities of Los Cristianos, Los Gigantes and Playa de Las Americas. In general, the type of trips seem to share the large-scale tourism characteristics of the island, they are short (some of them even for only one hour on board large catamarans or fast rubber inflatable boats), cheap (starting form $31 per adult) and run often (up to five trips per day).

In Gran Canaria, trips are offered from Puerto Rico and Puerto Mogan, while in Lanzarote tours depart from Puerto del Carmen y Puerto Calero. Each island contributes approximately 7% of the Canaries' total whale watchers. Tours from Gran Canaria and Lanzarote generally last longer (half a day), are carried out by larger vessels and are complemented with general nature watching and sailing. These services are therefore

classified as opportunistic cetacean watching tours. These trips are considerably more expensive, at an average cost of $70 per adult.

La Gomera Island presents a different scenario, with lower levels of tourism and less developed port infrastructure influencing the type of whale watching trips available. Trips are carried out by mid-sized and small boats (carrying 50 and ten passengers respectively), last up to four hours, and are exclusively dedicated to whale watching. Operators charge an average of $54 per adult. La Gomera is also home to the cetacean research conducted by a local German NGO.

According to information collected from this NGO, the enlargement of the harbour of Vueltas, Valle Gran Rey, is already planned. A larger port infrastructure is likely to stimulate the traffic of fast ferries and cruise ships, and therefore may well attract more operators to establish whale watching facilities. The waters in La Gomera are at present still relatively pristine, with only two tour operators running whale watching with up to five to six boats. As such, as well as the possibility of stimulating more whale watching, the expanded port infrastructure also carries the risk of increased pressure on the local marine environment.

The main species sighted in the Canaries include bottlenose dolphins (resident to the waters off the southwest coast of Tenerife), short-finned pilot whales and rough-toothed dolphins. Resident sperm whales also occur between Tenerife and Gran Canaria.

Figures for total whale watchers reported for 2008 are consistent with data collected in 2004, where the number of whale watchers counted for Tenerife reached 475,000 (Elejabeitia et al 2004). With this accounting at the time for an estimated 75% of total Canary Islands whale watching, it can be estimated that at the time, a total maximum of around 620-630,000 would have been possible across the country.

Main species:	Large cetaceans: *sperm whale* Small cetaceans: *bottlenose dolphin, rough-toothed dolphin, short-finned pilot whale*
Tourists:	
International	80%
Domestic	20%
Types of tours:	Boat-based, short trips (1-2 hours), half-day trips, dedicated, opportunistic, research.
Average adult ticket price:	$55
Estimated employment numbers:	157
Main whale watch season:	January to March, July to September

Acknowledgements:
Carlos Elejabeitia, Fabian Ritter, Domingo Castro, Jose Antonio Hernández, Susanne Braack.

References:

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Elejabeitia, C. y Servidio, A. Sociedad Española de Cetáceos. 2004. 'Estudio de Seguimiento de las Actividades de Observación de Cetáceos en Tenerife' Dirección General del Medio Natural de la Consejeria de Medio Ambiente y Ordenación Territorial del Gobierno de Canarias. INTERREG OGAMP project (not published).

Egypt

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	10,000	165.9%	N/A	$100,000	$325,000	$425,000
2008	35,396	13.5%	52	$2,052,968	$1,415,840	$3,468,808

★ Capital City: Cairo
Whale Watch Locations:
01: Marsa Alam/ Samadai Reef

Egypt has a strong dolphin watching industry, which has changed considerably since the 1998 survey. At that time, the industry was established, but largely based on a single charismatic dolphin. Since then a major dolphin watching, swimming and diving site has been established at Samadai Reef, or 'Dolphin House', at Marsa Alam on the Red Sea.

Samadai is a horseshoe-shaped reef in which spinner dolphins shelter during the day. The combination of plentiful dolphins, warm waters and easy access meant the area soon became popular after dolphin watching was established in 2001. During 2002, arrangements were made with local stakeholders to manage the area, with moorings being installed and a simple management scheme implemented. The fame of Samadai's dolphins soon spread and began to attract hundreds of people daily to Samadai. Tourist activities resulted in pressure on the dolphins, leading to their dispersion and reduced sightings as the animals' day-time resting behaviour was disturbed.

In 2003, local authorities suspended all visits to Samadai until a management scheme was put in place. A plan was prepared in consultation with different stakeholders, approved by authorities and implemented in January 2004. The site management plan included a zoning plan for the area, with areas exclusively for dolphins, along with areas for snorkelling, boat mooring and diving. Monitoring programmes and enforcement strategies were also implemented, alongside a public awareness campaign. A service fee system has also been implemented, which raises over $500,000 per year for the local government. These fees go to the ongoing management of Samadai, maintenance and conservation programmes. Beyond these fees, however, dolphin watching has had a deep impact on the local economy, creating over 200 direct jobs in the field of conservation, up to 600 indirect jobs and raising the profile of conservation issues in the area (Sarhan et al. 2004, Hanafy pers com, 2009). Furthermore, the industry is estimated to support 106 jobs directly through employment by the operators surveyed for this report.

Most importantly, the management plan has been successful in allowing dolphins to return to the area, while maintaining an important asset (with significant economic benefit) for the community. Before the management plan was implemented only around 32 dolphins were using the reef daily. A year later that number had grown to 78.

Some dolphin watching also occurs farther south on the Egyptian Red Sea coast, such as at Sattaya. This is mainly opportunistic watching by scuba divers and has not been included in this analysis. The area may be developed for dolphin watching in the future.

Main species:	Small cetaceans: *spinner dolphin*
Tourists:	
International	99%
Domestic	1%
Types of tours:	Boat-based dolphin watching as well as swim/snorkel/dive-with dolphin experiences.
Average adult ticket price:	$40 (plus $18 management fee)
Estimated employment numbers:	106
Main whale watch season:	Year-round

Acknowledgements:
Many thanks to Mahmoud H. Hanafy and Yasser Saeid at Red Sea Protectorates, Giuseppe Notarbartolo di Sciara at Tethys Research Institute. Thanks also to Daphna Feingold and Dani Kerem at the Israel Marine Mammal Assistance and Research Centre, and several operators.

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Local Case Study: Samadai Reef, Egypt

The successful establishment of the Samadai Reef dolphin protected area is a great story combining the conservation of marine biodiversity with local economic benefit. During its establishment, the people involved will have encountered great personal and organisational difficulties, but when compared to establishing marine protected areas (MPAs) elsewhere, the implementation of the management scheme at Samadai seems to have been remarkably easy. Why has Samadai been successful where so many MPAs fail? Looking at Samadai is a good opportunity to look more deeply into the wider economic costs and benefits of protected areas.

The direct benefits of an MPA at Samadai are obvious – a booming dolphin watch and diving industry. These values, as we have shown in this report, are easily converted to dollar values and, importantly, to financial values that accrue to local people and organisations. Other, indirect benefits of MPAs are often more difficult to assess, including biodiversity or environmental services, such as the value of storm protection that reefs provide. Other benefits include option values and non-use values – for example, the intrinsic value of nature – are still more difficult to evaluate. MPAs that are established to protect these latter values may be no less valid in ecological ***and*** economic terms, but these benefits will be harder to measure, monetise and distribute appropriately.

Similarly, the costs of establishing an MPA are often poorly understood. While the management costs and wages of the Samadai area seem considerable, these costs are only part of the costs of protected areas. If people are going to be denied access to the natural resources of an area, there is an opportunity cost – for example, local people may no longer be allowed to catch fish for subsistence and commercial purposes. This opportunity cost can be many times the operating cost of the MPA, but is often not considered by the proponents of protected areas. Importantly, this opportunity cost will almost certainly be borne by local people, while benefits may accrue to small numbers of tour operators and international tourists.

Looking at the costs and benefits of Samadai protection, we see that it has been relatively easy to weigh the costs and benefits of conservation, and ensure that sufficient benefits are retained locally. The benefits described accrue largely to local people through tourism, but also through increased capacity of local administration to implement environmental programmes. Physical infrastructure, such as mooring installation and maintenance also bring local benefits and jobs. Some benefits of conservation will accrue to – but will be largely unfelt by – the wider Egyptian and global community.

Aside from the operating costs, the costs of conservation at Samadai seem to be small. The area was not used for fishing, although small fishing boats sheltered there during the rough sea conditions. The only opportunity costs are incurred by operators who formerly had free access to the site. As we have mentioned, the industry is not long-established and the costs to these operators of finding other activities or buying permits is therefore not great. Some operators have left the industry, and local observers note that the fees system at Samadai serves to ensure businesses with an interest in the sustainability of the area remain and suffer less competition from cheap, opportunistic operators seeking short term gains. There was considerable stakeholder consultation leading up to implementation of the system, further giving operators time to make decisions about their businesses.

Further Reading:

Emerton, L, Bishop, J & Thomas, L 2006, 'Sustainable Financing of Protected Areas: A global review of challenges and options', Gland, Switzerland and Cambridge, UK: IUCN.

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Eritrea

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	None	Minimal	Minimal	Minimal
2008	None	N/A	None	None	None	None

★ Capital City: Asmara

In the last global report, it was found that although minimal, some dolphin watching did occur opportunistically on dive trips operating along the Red Sea Coast. Conflict with Ethiopia and unresolved tension over borders has now resulted in a significant reduction in tourism to Eritrea.

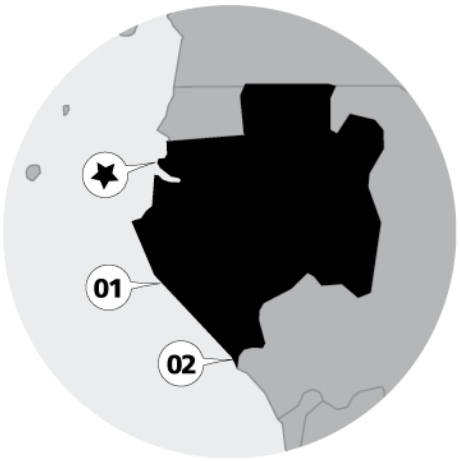
Research undertaken for this report indicates that no whale watching tourism took place in 2008.

Acknowledgements:
Giuseppe Notarbartolo di Sciara

Gabon

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	300	~1.8%	2	$16,000	$7,500	$23,500

★ Capital City: Libreville
Whale Watch Locations:
01: Loango National Park
02: Mayumba National Park



Gabon has two operators that run small-scale seasonal whale watching trips from Mayumba and Loango National Park. The Mayumba National Park was declared in 2002 and is the only dedicated marine park among Gabon's 13 national parks. The park is situated in the far south of Gabon, between the town of Mayumba and the Congolese border. The Loango National Park is located farther north of Mayumba, but still south of the Capital, Libreville.

The operator in Mayumba National Park, a conservation NGO, has been running exploratory tours to demonstrate the feasibility of whale watching tourism in the hope of establishing a more permanent attraction for tourists in the Park. Anecdotal evidence suggests that with proper marketing, a dedicated operator could potentially be running daily trips during the whale watching season, as there has been a high level of interest in whale watching by tourists to the National Park (R. Parnell, pers. comm., 2009). The operator in Loango National Park runs eco tours including boat-based whale watching from mid-July to mid-September.

Humpback whales are the main focus of the tours although other marine wildlife including dolphins can be sighted.

While the industry is currently small, the consistency of sightings (95% to 100% sighting rates) and growing inbound tourist arrivals to Gabon indicate there is potential for increased whale watching tourism. International tourism arrivals to Gabon grew at an average annual rate of 7.4% between 1995 and 2003 (World Tourism Organisation, 2006). The general lack of awareness of whale watching in Gabon and difficulties finding suitable boats and captains continue to hinder further growth in whale watching.

Main species:	Large cetaceans: *humpback whale*
Tourists:	
International	20%
Domestic	80%
Types of tours:	Boat-based, dedicated, exploratory tours to assess interest in whale watching tourism
Average adult ticket price:	N/A[15]

[15] No ticket price is available since tours are mostly informal or exploratory

Estimated employment numbers:	2
Main whale watch season:	July to October

Acknowledgements:
Richard Parnell (Wildlife Conservation Society) at the Mayumba National Park.

References:
Mayumba National Park, http://mayumbanationalpark.com/

Gambia, The

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	1,000+	~49.5%	3	$30,000	$75,000	$105,000
2008	10,000	25.9%	4	$650,000	$1,500,000	$2,150,000

★ Capital City: Banjul
Whale Watch Locations:
01: Gambia River mouth

The Gambia has four operators that run trips primarily around the mouth of the Gambia River. The trips are generally opportunistic in nature and focus on small cetaceans, primarily bottlenose and Atlantic humpback dolphins. No large cetacean watching trips are offered, although minke whales are occasionally seen in the harbour area.

Since 1998, the industry has grown at an average annual rate of 25.9%, with an estimated 10,000 whale watching tourists in 2008.

Main species:	Small cetaceans: *bottlenose dolphin, Atlantic humpback dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Boat-based, opportunistic
Average adult ticket price:	$85
Estimated employment numbers:	30
Main whale watch season:	November to April

Acknowledgements:

Mervyn Baldwin (Pleasuresports Gambia Ltd.), and Ruth Leeney (Namibian Dolphin Project)

Kenya

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	Minimal	N/A	27	Minimal	Minimal	Minimal

★ Capital City: Nairobi
Whale Watch Locations:
01: Kisite Mpunguti Marine Park

Political unrest in 2008 severely damaged tourism to Kenya, resulting in minimal whale watching for the year. In recent years however, whale watching tourist numbers have reportedly been as high as 10,000[16] - a massive growth since 1998 when minimal opportunistic whale watching was found only as part of dive tours.

Twenty-seven operators are known to run trips in Kenya, four of which are dedicated operators and 23 of which are local boat owners who run trips depending on tourist demand. The principal location for dolphin watching tourism is the Kisite Mpunguti Marine Park (Kisite Marine Park and adjacent Mpunguti Marine Reserve) in the south of Kenya, close to the border with Tanzania. Dolphin watching tours usually depart from nearby Shimoni village on the mainland.

The principal species encountered is the Indo-Pacific bottlenose dolphin which is present year-round and is regularly encountered both within the Kisite Mpunguti (KM) MPA and in the Wasini channel, around the eastern end of Wasini Island which constitutes the main tour route. A small resident population of Indo-Pacific humpback dolphins are also present year-round but the dolphins rarely frequent the KM MPA and are most often sighted on the mainland side of the Wasini channel around in to Funzi bay and so are not often encountered by tour boats. Spinner dolphins are seasonal visitors in February and March but are not often encountered within the KM MPA itself. Humpback whales are also seasonal visitors between July and September and mother-calf pairs may be encountered within both the KM MPA and Wasini channel during this period though not on a daily basis.

Since 2006, Global Vision International, a UK based NGO with operations in Kenya has been undertaking research on dolphin populations in and around KM MPA, on behalf of the governmental agency, Kenya Wildlife Service. The research programme addresses population size and distribution of dolphin species with longer-term objectives of monitoring population trends and the impact of tourism as the basis for reviewing a national code of conduct for dolphin watching introduced by Kenya Wildlife Service in 2007 under the UNEP / CMS Year of the Dolphin initiative. The code of conduct prohibits explicit swimming with dolphin activities, feeding of dolphins and regulates the number, proximity and approach of tour boats around dolphins, however compliance has declined since its introduction.

[16] Prior to the political unrest, in recent years as many as 10,000 whale watching tourists per annum may have undertaken trips in Kenya, with one operator alone accounting for as many as 6,000 of these.

As the political situation in Kenya improves and international tourism recovers, the whale watching industry is likely to recover too, with operators expressing enthusiasm for the industry, despite obvious disappointment at the events of 2008.

Acknowledgments:
Nina Wambiji (Kenya Marine and Fisheries Research Institute), Graham Corti (Global Vision International) and three operators.

Madagascar

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	150	N/A	N/A	$6,000	$15,000	$21,000
1994	7,500	268.4%	N/A	$200,000	$910,000	$1,110,000
1998	4,000	-14.5%	12	$120,000	$554,000	$774,000
2008	15,928	14.8%	41	$814,495	$1,011,133	$1,825,628

★ Capital City: Antananarivo
Whale Watch Locations:
01: Île Sainte-Marie
02: Maroantsetra, Antongil Bay
03: Toliara

The majority of whale watching tours in Madagascar involve hotels running organised trips for guests. Local boat owners also conduct less formal whale watching trips when demand exists. The industry is focused on the humpback migration between June and October, but dolphins are also seen opportunistically during whale watching trips.

There has been significant growth in the whale watching industry in Madagascar since 1998, when only 12 operators took 4,000 tourists whale watching. In 2008, there were an estimated 15,928 boat-based whale watchers. This represents an annual growth of 14.8%. This growth correlates closely with growth in inbound tourism to the island country, which grew at 13.2% per annum (World Tourism Organization, 2006), putting it in the top five fastest growing countries for tourism in Africa between 1995 and 2004.

The main area for whale watching in Madagascar is the Île Sainte-Marie, off the island's northeast coast. Approximately 13 operators took an estimated 14,200 tourists on whale watching tours in the waters between Île Sainte-Marie and mainland Madagascar in 2008. Whales migrate through these waters for calving. The average vessel capacity for these tours is 10 passengers, although capacities range between 3 and 35 passengers. The large majority of vessels are small motorised boats and pirogues[17], but some operators also have larger boats and catamarans.

Trips generally last half a day, with an average ticket price for adults of $56. Whale watching activities also exist in many other locations across Madagascar, but usually on a smaller scale. At least 13 operators are based in Maroantsetra and 7 in Toliara, but the industries in these two locations are relatively small, with fewer than 1,000 whale watching tourists in 2008.

[17] A flat-bottomed fishing boat traditionally propelled by paddles or small sails. Some operators still offer sail propelled pirogues although most are now motorised.

In February 2009, political protests in Antananarivo, the country's capital, turned violent, which has resulted in ongoing uncertainty around the political and security situation in Madagascar. This might mean that 2009 will be a difficult year for the tourism industry. However, the long-term outlook for tourism and whale watching in Madagascar remains strong, provided the political situation stabilises.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin, long-beaked common dolphin*
Tourists:	
International	94%
Domestic	6%
Types of tours:	Boat-based, dedicated, opportunistic, general nature cruises
Average adult ticket price:	$56
Estimated employment numbers:	197
Main whale watch season:	June to October

Acknowledgements:
Yvette Razafindrakoto (Wildlife Conservation Society) and all the operators who participated.

References:
Ausseill, F 2009, 'Madagascar's tourism industry faces ruin', *Mail & Guardian Online*, accessed March 2009, available online at: http://www.mg.co.za/article/2009-02-18-madagascars-tourism-industry-faces-ruin

Local Case Study: Antongil Bay, Madagascar

Analanjirofo Region, Toamasina Province, Madagascar

Located in the northeast of Madagascar, Antongil Bay is the largest protected bay in the country and home to four cetacean species. As many as 13 whale watch operators run trips in Antongil Bay, operating out of Masoala National Park or the town of Maroantsetra.

In 2008, whale watch numbers in Antongil Bay were relatively low by global standards, with an estimated 450 boat-based whale watchers visiting the area. Revenues accruing from these 450 whale watchers amounted to an estimated $24,000, with prices varying from local boat owners charging around $10 to resorts charging as much as $65. Despite its relatively small size, this activity is not to be disregarded. Considering that per capita gross domestic product for Madagascar is estimated at $1,000, the whale watching industry is responsible for a significant amount of revenue for local resorts and individuals.

Although humpback whales, southern right whales, bottlenose dolphins and spinner dolphins can all be found in Antongil Bay, the migration of humpback whales is the primary focus of trips offered. These humpbacks are known to migrate up along the east coast of Madagascar, and the semi-protected waters of Antongil Bay are an important location for them - analysts believe it is a calving area for the whales. Population estimates for the whales visiting Antongil Bay have been estimated at between 4600 and 7700 (Cerchio et al, 2008). The whales visit these waters between June and October each year, with peak concentrations occurring between July and early September.

The Tampolo Marine Park has been designated within Antongil Bay and is located off the coast of the Masoala National Park, which looks out over the bay. Masoala National Park is the largest national park in Madagascar and is home to several endemic species, and the combined protected areas create a significant and important land and sea protected area network.

Land-based whale watching around Antongil Bay holds potential, but a lighthouse that previously offered a good vantage point is in need of repairs and without other adequate infrastructure, land-based whale watching will remain incidental and informal.

Regardless, efforts are being made to increase the amount of whale watching tourism in the region. Since 2004, an annual whale watching festival has been organised by local operators, the Wildlife Conservation Society (WCS) and Madagascar National Parks (formerly ANGAP). The festival involves cultural performances, environmental education on whales and biodiversity and whale watching tours for the local community.

Although it has a long way to go to get to the size of the industry in Île Sainte-Marie, further efforts to develop tourism in the region would contribute to the growth of whale watching in Antongil Bay. With the country's tourism arrivals growing rapidly in recent years (13.2% between 1995 and 2004) according to the World Tourism Organisation), there appears a strong case for continuing growth in this pocket of Madagascar. Resident bottlenose and spinner dolphin populations also provide potential for cetacean watching outside of humpback whale season.

Local economic benefits:

As for other areas in Africa, lack of capital to invest in infrastructure and vessels has the potential to inhibit growth in whale watching. Lack of local capital, in particular, can often mean that foreign-owned operators tend to play a bigger part in putting an industry in place. Our research indicates that even when this is the case, there are nevertheless many potential local benefits:

- Local people make up a significant portion of total employees and thereby develop additional skills and training.
- Local communities also benefit through investment in public infrastructure, while higher tourist numbers lead to benefits that flow into surrounding businesses, such as procurement for hotels and spending at local shops and markets.
- Local boat owners (such as fishermen) often supplement their incomes with occasional whale watch tours, and importantly,
- the tourism marketing networks that foreign investors bring to these regions is often a critical contribution to the growth and promotion of tourism and whale watching in some of the world's most remote locations.

Many additional benefits accrue to local communities due to the foreign investment, rather than in spite of it. And so, where there is agreed community acceptance of whale watching, an effectively managed industry has the potential to bring wide economic, social and environmental benefits.

Acknowledgements:
Wildlife Conservation Society, and in particular, Yvette Razafindrakoto

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Mauritania

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	0	None	None	None
1994	50	N/A	0	Minimal	Minimal	Minimal
1998	50	N/A	0	Minimal	Minimal	Minimal
2008	Minimal	N/A	0	Minimal	Minimal	Minimal

★ Capital City: Nouakchott

The potential for developing a whale watching industry still exists in Mauritania, although there is no formal industry at present. A feasibility study into small-scale, community-based cetacean watching may be undertaken for the wider region (West Africa) but has not been commissioned yet (Diallo, pers. comm., 2008).

However, there have been some small-scale ecotourism ventures operating along the coastline of Mauritaina that at times include some opportunistic dolphin watching from land. Certain local villages use dolphins to assist in their fishing, drumming on wood to attract the dolphins to herd schools of fish into nets in shallow waters.

Mauritania attracted 30,000 inbound visitors in 2000, (World Tourism Organization, 2006); no data are available from the World Tourism Organization for more recent years.

References:

Mamadou Diallo (WWF West African Marine Eco Region)

Mauritius

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2008	21,400	56%	25	$597,976	$2,064,650	$2,662,626

★ Capital City: Port Louis
Whale Watch Locations:
01: Tamarin Bay

Mauritius has approximately 25 whale watching operators, most of whom offer dolphin watching and swim-with trips. The industry is primarily focused on dolphin watching and swim-with tours and the majority of activities occur in Tamarin Bay, off the southwest coast of Mauritius. Potential for watching large cetaceans also exists with humpbacks and occasional sperm whales recorded in the waters off Mauritius; however, only one operator is currently offering these trips. The average cost for a dolphin watching trip is around $35 for adults and $23 for children. Whale watching or combined whale and dolphin watching trips will usually cost more.

Since 1998, whale watching has grown from a small informal industry to one that is now estimated to take over 21,000 tourists annually on dolphin watching trips, with very minimal large cetacean watching occurring. Between 1995 and 2005, international arrivals to Mauritius grew at an average of 6.1% annually, increasing from 422,000 tourists in 1995 to 761,000 tourists in 2005 (World Tourism Organization, 2006). Since 1998, the whale watching industry has outpaced the growth of inbound tourism by a staggering figure, growing at an average annual rate of 56%.

Unfortunately, there are ongoing concerns about the sustainability of dolphin watching in Tamarin Bay, due to the number of operators and the behaviour of some operators around the dolphins. In 2006, the Mauritian Government published dolphin watching guidelines to be adhered to by all operators, but is unclear how successful the guidelines have been to date.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin, spinner dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Boat-based, swim-with, dedicated, opportunistic
Average adult ticket price:	$35
Estimated employment numbers:	35

Main whale watch season:	July to October

Acknowledgements:
Two operators

References:
Dolphin Watching Guidelines, Government of Mauritius, accessed March 2009, available online at: http://www.gov.mu/portal/site/tourist/menuitem.e2330d7a351ad42dadbea610a0208a0c/

Mayotte

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	10,000	~44.6%	5	$670,919	$882,000	$1,552,919

★ Capital City: Mamoudzou

Mayotte has five whale watching operators that runs trips mostly for expatriate workers from France, the United States, The Netherlands and Belgium. Trips are boat-based with vessels generally accommodating around ten passengers. Trips are offered daily during the humpback migration season (July and November), while outside of this season, operators run several trips per week, which include opportunistic dolphin watching as part of the cruises.

Other cetaceans sighted in the waters around Mayotte including blue whales, sperm whales, Indo-Pacific humpback dolphins, pantropical spotted dolphins, Fraser's dolphins, short-finned pilot whales and orcas.

The industry has grown from nothing in 1998 in the Whale Watching 2001 report to an estimated 10,000 boat-based whale watchers in 2008, representing an annual growth of nearly 45%, the second highest growth rate in Africa after Mauritius. The industry is promoted by the national tourism body, with the official tourism guide highlighting whale watching as an activity in Mayotte.

Currently an overseas collectivity of France, in March 2009 Mayotte voted in a referendum to become an overseas department, beginning in 2011. This will result in a deeper level of integration into France and the European Union.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin*
Tourists:	
International	60%
Domestic	40%

Land-based whale watching:	None
Types of tours:	Boat-based, dedicated, opportunistic
Average adult ticket price:	$31
Estimated employment numbers:	7
Main whale watch season:	July to November

Acknowledgements:
Nils Bertrand (Sea Blue Safari)

Morocco

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	Minimal	N/A	Minimal	Minimal	Minimal	Minimal

Capital City: Rabat

There is no formal whale or dolphin watching in Morocco at the time of research, but local researchers suggest that tourism operators and promoters have been investigating possibilities for dolphin watching. Some general cruises around the Straits of Gibraltar from Morocco encounter cetaceans. Whale watching from Spanish ports is already well established in the Strait.

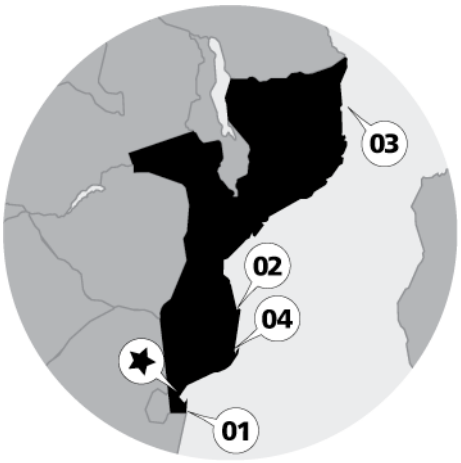
Swiss-based Foundation for Information and Research on Marine Mammals (firmm), which focuses on marine mammals in the Straits of Gibraltar with trips from Tarifa, Spain, is planning to establish operations in Morocco from 2010 that will include some cetacean watching.

Acknowledgements:
Katharina Heyer at firmm and Najih Mohamed at Institut National de Recherche Halieutique

References:
http://www.firmm.org

Mozambique

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	500+	~25.7%	1	$100,000	$50,000	$150,000
2008	8,280	32.4%[18]	21	$481,080	$700,088	$1,181,618



★ Capital City: Maputo
Whale Watch Locations:
01: Ponta do Ouro
02: Bazaruto Archipelago
03: Quirimbas Archipelago
04: Inhambane City

There has been significant growth in Mozambique's whale watching industry since 1998, when around 500 tourists generated approximately $150,000 in expenditure. In 2008, 8,280 tourists generated nearly $1.2 million in total expenditure, an average annual growth rate in tourist numbers of 32.4%. Inbound tourism receipts to Mozambique grew at 11.9% annually between 2000 and 2005, which suggests that whale watching tourism is growing at a faster rate than the broader tourism industry. This is despite the fact that cetacean watching activities are not heavily marketed, with most tourists only finding out about whale watching activities after arriving in Mozambique.

Mozambique has as many as 21 whale watching operators. The vast majority are dive centres or boutique hotels that offer opportunistic and dedicated dolphin and whale watching. Some operators also engage in 'swim-with' dolphin activities. The average ticket price is $35 for adults and $28 for children. An estimated 30 full-time jobs are supported by whale watch operators.

Vessels range from sea kayaks, to motorised boats, recreational fishing boats and dive boats. Although the majority of the operators are local, because of the close proximity to South Africa dive operators from across the border also run trips into Mozambique, often conducting swim-with trips.

The industry is focused mainly on bottlenose dolphins, although humpback whales are also seen on their migration between the months of June and October. The main area for whale watching is Ponta do Ouro on the southern tip of Mozambique. Resorts and boutique hotels in the Bazaruto Archipelago, Quirimbas Archipelago and at Inhambane also offer dedicated seasonal whale watching trips and opportunistic dolphin watching. [19]

Two operators are involved in research projects. One operator is collecting data on humpback whales for research being carried out at Cape Town University. Another has been carrying out research for over 10 years as the non-profit organisation DolphinCare-Africa. This research organisation collaborates with the Natural History Museum of Maputo and the Eduardo Mondlane University and is funded through commercial tours and volunteering programmes. DolphinCare-Africa has actively campaigned for increased

[18] For the purpose of calculating this rate, we assume 500 whale watchers in 1998.
[19] Other locations where whale and dolphin watching may be possible include Praia do Tofo and Jangamo, although no data was available from these areas.

regulation of the industry and has contributed to the development of a marine mammal code of conduct for operators. As yet, the code of conduct remains voluntary and is not adhered to by the large majority of other operators in the area. Further campaigning for additional regulations has included efforts to encourage licensing and limitations on hours of operations for operators, to allow rest time for cetacean populations.

Ongoing concerns have been raised by some operators about the sustainability of the industry in Mozambique, particularly in the south, in part due to large numbers of jet skis being operated in any one day (up to 30) in regions where the cetacean populations are present. There is clearly potential in Mozambique for continual growth in whale watching tourism, but also the need for regulation of the number and type of vessels operating, along with stricter guidelines for encounters with cetaceans. There is hope that in the near future a marine protected area will be declared in the southern waters, which may contribute to the continued sustainability of whale watching tourism in the region.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin*
Tourists:	
International	70%[20]
Domestic	30%
Land-based whale watching:	None
Types of tours:	Boat-based, dedicated, opportunistic, general eco cruises
Average adult ticket price:	$35
Estimated employment numbers:	30
Main whale watch season:	Year-round for dolphin watching June to October for whale watching

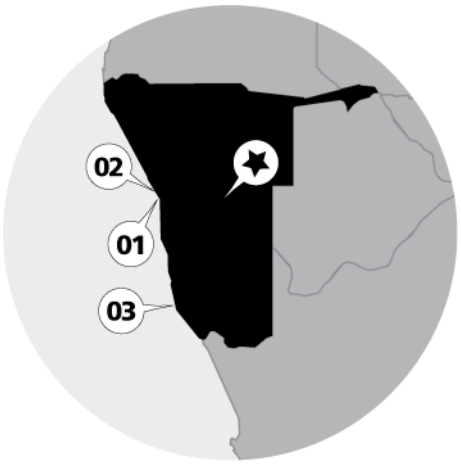
Acknowledgements:
Almeida Guissamulo (Natural History Museum), Angie Gullan (Dolphin Encountours, DolphinCare-Africa), Isabel Marques da Silva and all operators who participated in our research.

[20] Comprising a large percentage of South African tourists

Namibia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	7,000	~143.2%	3	$216,000	$540,000	$756,000
2008	43,675	20%	10	$983,806	$2,104,875	$3,088,681

Capital City: Windhoek
Whale Watch Locations:
01: Walvis Bay
02: Swakopmund
03: Lüderitz



Namibia has ten whale watching operators, all of whom run general nature trips that include sightings of cetaceans (predominantly dolphins) and other wildlife, including fur seals, turtles and sunfish. Humpback and southern right whales are seen opportunistically between June and October on their annual migration. The main area for whale watching is Walvis Bay with tour companies based both in Walvis Bay and in the nearby coastal town of Swakopmund. There are also two boats based in Lüderitz, 400km south of Swakopmund.

There has been significant growth in the industry since 1998, when Namibia had an estimated 7,000 whale watchers. Since then, whale watching tourist numbers have increased dramatically at an average annual growth rate of 20%. This is almost double the rate at which the number of inbound tourists increased between 1995 and 2006 (11%)[21]. As in 1998, the trips are general nature/eco trips with cetaceans not being the sole focus of the trips. Different operators put varying levels of emphasis on the dolphin and whale component of their trips.

Trips are generally three to four hours in duration and, for trips in Walvis Bay, follow a similar route that includes fishing or mining vessels moored in the bay, one of the oyster farms, Pelican Point (for Heaviside's dolphins), the fur seal colony at Pelican Point, and Bird Island (a man-made guano platform), with other wildlife sighted opportunistically along the way. Heaviside's dolphins are a unique attraction to this area as they are endemic to the region, being found only off the coast of Namibia and the western coast of South Africa.

Vessel capacity ranges from two-person kayaks to catamarans that can accommodate up to 40 passengers. The average vessel capacity is 18 passengers. The average ticket price is $51 for adults and $30 for children.

The Namibian Dolphin Project, initiated in 2008, aims to assess the conservation status of Namibian dolphin populations, with particular focus on the two most commonly encountered dolphin species, Heaviside's dolphins and bottlenose dolphins. The project is investigating the size of the populations, documenting habitat use and critical habitat areas for these and other dolphin and whale species, using visual surveys and

[21] Operators in Namibia are well marketed and promoted which may be part of the reason they experience a higher than average growth rate.

novel Static Acoustic Monitoring techniques. The organisation works in collaboration with local government agencies, conservation groups and operators in Walvis Bay.

Main species:	Large cetaceans: *humpback whale, southern right whale* Small cetaceans: *bottlenose dolphin, dusky dolphin, Heaviside's dolphin*
Tourists:	N/A
International	88%
Domestic	12%
Land-based whale watching:	None
Types of tours:	Boat-based, dedicated, opportunistic, eco-tours, kayaking
Average adult ticket price:	$51
Estimated employment numbers:	60
Main whale watch season:	July to November for whale watching, year-round for dolphin watching. Peak season for international (non-South African) tourists is July and August; December and January are the peak months for South African tourists.

Acknowledgements:
Simon Elwen and Ruth Leeney (Namibian Dolphin Project), Rod Braby (NACOMA), Heidi Skrypzeck (Ministry of Fisheries and Marine Resources) and all the operators, agents and tourism bureaus who assisted with our research.

Oman

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	4,700	~120.2%	6	$320,000	$180,000	$500,000
2008	7,500	4.8%	15	$376,875	$862,500	$1,239,375

★ Capital City: Muscat
Whale Watch Locations:
01: Muscat

Oman has an exciting and expanding cetacean watching industry that is experiencing strong growth and allows viewing of a range of species. Whale and dolphin watching happens on a daily basis (tourists and weather permitting) with a concentration of trips around the tourist season when the weather is cooler from October to April.

Approximately 15 operators offer whale and dolphin watching, each with different degrees of dedication. Some operators offer dolphin watching on a daily basis while others focus on other activities and offer whale and dolphin watching on request. No operators in Oman focus solely on cetacean watching but tend to offer tourists a variety of marine activities such as scuba diving, snorkelling, game fishing, coastal tours and yacht charters. Opportunistic whale and dolphin watching also occurs when tourists are in transit to other marine activities. Some operators work closely with major hotels whereby guests are referred to certain operators.

Whale and dolphin watching operators are concentrated around the capital, Muscat, with a few operators also found in Musandam (in the north) and Salalah (in the south). Casual trips are also offered by local fishermen from the public beach of Bandar al Jissah and will take passengers out to watch dolphins in a fibreglass skiff when approached. The safety of these trips has been questioned by local conservation groups.

An impressive variety of species are encountered by trips off Oman. Commonly encountered species include spinner dolphins, long-beaked common dolphins, bottlenose dolphins, Bryde's whales, sperm whales. According to the Environmental Society of Oman (ESO) Whale and Dolphin Research Group, many other species have been sighted, such as humpback whales, Risso's dolphins, false killer whales, blue whales and Indo-Pacific humpback dolphins, among others.

Oman's tourism industry has been growing strongly and whale watching trips attract around 80% international tourists. Whale watching is not a main reason tourists visit Oman; however, those that discover the opportunity once in Oman are normally pleasantly surprised by their whale/dolphin watching experience.

Main species:	Large cetaceans: *Bryde's whale, sperm whale* Small cetaceans: *bottlenose dolphin, long-beaked common dolphin, spinner dolphin*
Tourists:	
International	80%
Domestic	20%
Land-based whale watching:	None
Types of tours:	Boat-based trips with a range of dedicated and opportunistic operators.
Average adult ticket price:	$50
Estimated employment numbers:	75
Main whale watch season:	October to April

Acknowledgements:
Robert Baldwin, Nida Helou and Howard Gray (Environment Society of Oman) and four operators.

Réunion

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	3,248	29.2%	12	$94,127	$366,077	$460,204

★ Capital City: Saint-Denis

Numbers of whale watching tourists in Réunion are currently at approximately 3,000, but indications are that the industry is beginning to grow in popularity, with increasing awareness of the activity and the tourism opportunities presented by whales.

GLOBICE (Groupe Local d'Observation et d'Identification des Cétacés) is an NGO currently undertaking research into cetaceans in the waters of Réunion to assess cetacean diversity around the island, including specific studies on humpback whales and Indo-Pacific bottlenose dolphins. Since 2004, year-round surveys to assess cetacean diversity have been conducted by GLOBICE off the coast of Réunion, and a total of ten cetacean species has been observed. Photo-identification data showed a small resident population of Indo-Pacific bottlenose dolphins, while the humpback whale appears seasonally, between June and November. Frequent sightings of mother-calf pairs indicate that Réunion is a breeding area for humpback whales. Both humpback whales and Indo-Pacific bottlenose dolphins in the area typically inhabit coastal waters, making them particularly exposed to human activities.

The whale watching that does occur in Réunion is undertaken off the country's west coast, with dedicated and opportunistic tours running out of Saint Gilles and opportunistic trips being run out of Saint Leu. Trips are generally available through charter operators or diving operators. Vessel capacities range from ten to 30 passengers and include catamarans, motor-boats and yachts. Between June and October, dedicated humpback whale watching trips are offered. Indo-Pacific bottlenose dolphins and spinner dolphins are seen opportunistically throughout the year. Whale watching activities in Réunion are currently unregulated.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *Indo-Pacific bottlenose dolphin, spinner dolphin*
Tourists:	
International	90%
Domestic	10%
Land-based whale watching:	N/A
Types of tours:	Boat-based, dedicated, opportunistic
Average adult ticket price:	N/A
Estimated employment numbers:	17
Main whale watch season:	June to October

Acknowledgements:
Violaine Dulau, Laurent Mouysset (GLOBICE)

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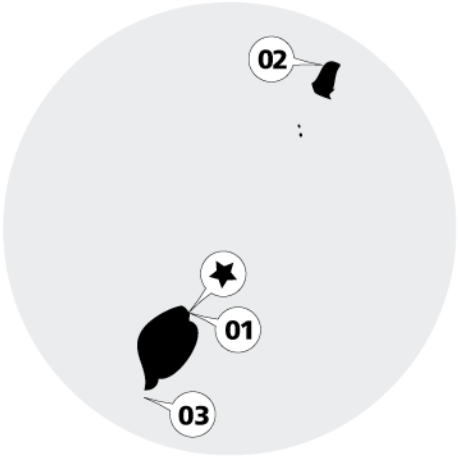
Dulau-Drouot, V Boucaud, V & Rota, B 2008, 'Cetacean diversity off La Réunion Island (France)', *Journal of the Marine Biological Association of the United Kingdom*, vol 88, pp. 1263 – 1272.

São Tomé and Príncipe

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	Minimal	N/A	5	Minimal	Minimal	Minimal

★ Capital City: São Tomé
Whale Watch Locations:
01: São Tomé
02: Rolas Island
03: Bom Bom Island



Whale watching occurs from the islands of both São Tomé Island and Príncipe Island but only at minimal levels. In São Tomé, whale watching takes place from São Tomé city along the east coast or from Rolas Island in the south. In Príncipe, whale watching occurs from a resort on Bom Bom Island.

Trips are generally run or organised by hotels, fishing or diving operators, and generally involve small capacity vessels such as motorized pirogues and speedboats. Between June and October, dedicated humpback whale watching trips are offered and bottlenose and pantropical spotted dolphins are seen opportunistically throughout the year. Numbers of whale watching tourists in São Tomé and Príncipe are likely to increase alongside growth in international arrivals and improved awareness of tourism and whale watching in São Tomé and Príncipe.

Since 2002, Projecto Delfim (a Portuguese cetacean research organisation) has been carrying out a project studying the occurrence and distribution of cetaceans (dolphins and whales) in the waters around São Tomé and Príncipe, with a special focus on humpback whales. Between 2002 and 2006, research by Projecto Delfim has identified six different species of cetaceans in the area, although humpback whales, bottlenose dolphins and pantropical spotted dolphins remain the focus of tourism activities.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin, pantropical spotted dolphin*
Tourists:	
International	90%
Domestic	10%
Land-based whale watching:	None
Types of tours:	Boat-based, dedicated, opportunistic
Average adult ticket price:	N/A
Estimated employment numbers:	7
Main whale watch season:	July to October

Acknowledgements:
Ines Carvalho (Projecto Delfim) and two operators

Senegal

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	Minimal	N/A	N/A	Minimal	Minimal	Minimal

Capital City: Saint-Denis

As in Mauritania, the potential for developing a whale watching industry may exist in Senegal, although no formal industry has developed yet. A feasibility study into small-scale, community based cetacean watching may be undertaken for the wider region (West Africa) but has not been commissioned yet (Diallo, pers. comm., 2008).

Between 1995 and 2005, inbound tourist arrivals to Senegal increased from 280,000 to 769,000, an annual average growth rate of 10.6%. As of 2008, it doesn't appear that this large increase in inbound tourism has led to the growth in, or development of, a more formal whale watching industry.

Acknowledgements:
Mamadou Diallo (WWF West African Marine Eco Region)

Seychelles

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	Minimal	N/A	4	Minimal	Minimal	Minimal

★ Capital City: Saint-Denis

Whale watching in Seychelles is mostly opportunistic or incidental as part of diving trips arranged by resorts or operators running live-aboard trips in the region. The main species present in local waters include spinner dolphins, humpback whales and sperm whales, although other species are known to inhabit the waters of Seychelles. Dolphin watching occurs off the outer island groups of Amirante and Alphonse, while whale watching occurs off the northern and southern shelf edge. Although a figure of four operators is given in this report, little other data was available on the industry in Seychelles to estimate number of whale watchers or expenditure.

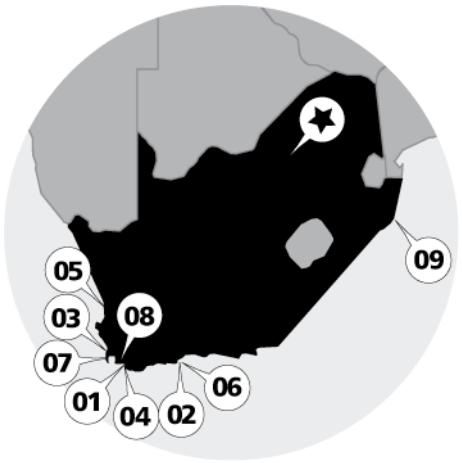
Inbound international arrivals to the Seychelles have remained relatively flat in recent years, increasing from 121,000 arrivals in 1995 to 129,000 arrivals in 2005.

Acknowledgments:
David Rowat (Marine Conservation Society Seychelles)

South Africa

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	6,000	N/A	N/A	None	None	None
1994	25,000	61%	N/A	None	None	None
1998	510,000	113%	15	$311,000	$68,875,000	$69,186,000
2008	567,367	1.1%	12	$2,762,427	$58,780,707	$61,543,133

★ Capital City: Pretoria
Whale Watch Locations:
01: Hermanus
02: Plettenberg Bay
03: Cape Town
04: Gansbaai
05: Lambert's Bay
06: Knysa
07: St. Lucia
08: Simon's Town
09: Kleinmond



South Africa is a popular destination for both boat and land-based whale watching with fantastic whale viewing opportunities along the coastline. In 2008, we see a slight increase in overall numbers of whale watch tourists compared to 1998, at a rate of 1.1% per annum over the decade. However, boat-based whale watchers have dramatically increased over the last decade in South Africa, at a rate of 14% per annum, as was projected in the last global report and following the licensing of boat-based whale watching in 1998.

In 1998, fifteen boat-based operators took 6,176 whale watchers and generated $174,500 in direct expenditure and $1,000,800 in indirect expenditure. In 2008, twelve boat-based whale operators took an estimated 48,000 whale watchers who generated $2,762,427 in direct expenditure and $8,192,104 in indirect expenditure. This represents an AAGR in boat-based whale watcher numbers between 1998 and 2008 of 14%.

Boat-based whale watching predominantly occurs from Hermanus, Plettenberg Bay, Cape Town, Gansbaai, Lamberts Bay, Mosselbay, and Knysna in the Western Cape Province. The tours are mainly focused on the southern right whale, although other species such as humpbacks, Bryde's whale, orcas and dolphins are seen opportunistically. Heaviside's dolphin, a species endemic to the western coast of South Africa and Nambia is seen in Lambert's Bay. Tours are also run from St. Lucia in the KwaZulu Natal Province, and focus mainly on migrating humpback whales.

Most tours also offer opportunistic sightings of other wildlife including seals, pelagic birds and oceanic sharks. Boat-based trips are generally half-day trips with vessel capacities ranging between ten and sixty passengers. The average ticket price is $68 for adults and $35 for children.

All of the boat-based operators in South Africa are required to hold permits issued by the Department of Environmental Affairs and Tourism (DEAT). According to DEAT, three 'experimental' dolphin watching permits will also be issued within the next five years in the Plettenberg Bay area and further expansion of the industry is planned for Port Elizabeth, Durban and the south coast of KwaZulu Natal.

Land-based whale watching also continues to be a huge tourist drawing card, particularly to the Western Cape. Land-based whale watching in South Africa is almost exclusively focused on southern right whales. Across the Western Cape, it is estimated that there were 519,150 land-based whale watchers in 2008. Hermanus is estimated to receive approximately 70% of these, or 369,232 tourists in 2008, down from 500,000 in 1998.

The reason for the drop in numbers in Hermanus is possibly due to increased land-based whale watching from other locations along the coast, as populations of whales are continuing to increase along the South African coastline and other locations become increasingly popular for land-based whale watching. The use of different data sources for estimation of land-based whale watchers for this report may have also led to a difference in estimates. In previous studies, data from tourist counts was available for use, however, no updated studies of a similar nature were available, and so, the methodology below was used to calculate land-based numbers in Hermanus.

Land-based estimates for Hermanus are based on the town's estimated overnight capacity between June and November, 114,616, combined with an estimated 70,000 tourists to the whale festival, a total of 184,616 whale watchers. To estimate day-trip tourists, we assumed that the same number again of day-trip tourists would visit Hermanus over the whale watching season. This is based on previous data that indicated that at least 50% of visitors to Hermanus were domestic, and that the majority of overnight tourists were international. Our survey results from hotels in Hermanus and other locations around Walker Bay indicate very high proportions of international visitors make up overnight visitors. Based on this – representing best available data – we estimate a further 184,616 day-trip whale watching tourists to Hermanus in 2008. This results in a total estimated number of whale watching tourists in Hermanus of 369,232.

In any case, Hermanus still remains central to whale watching tourism in South Africa and continues to hold an annual whale festival, which can attract as many as 100,000 people in a weekend.

With population increases and sightings occurring more frequently from many locations along the Western Cape coast, land-based whale watching is now also popular from Cape Town, Plettenberg Bay, De Kelders, Gansbaai, Fish Hoek, Hangklip-Kleinmond, Simon's Town, as well as Table Mountain National Park[22]. Other National Parks where whale watching is possible, but for which no data has been included, are Addo Elephant, Agulhas, Tsitsikamma, West Coast and Wilderness.

With whale populations and sightings increasing, the long-term outlook for whale watching is positive, with whale watching tourism likely to parallel general tourism growth.

[22] From Boulders Beach and Cape Point

Main species:	Large cetaceans: *Bryde's whale, humpback whale, southern right whale* Small cetaceans: *bottlenose dolphin, long-beaked common dolphin, Heaviside's dolphin*
Tourists:[23]	
International	77%
Domestic	22%
Land-based whale watching:	519,150
Types of tours:	Boat-based, dedicated, land-based, package tours along 'whale routes', land-based eco-tours which include whale watching, incidental land-based whale watching.
Average adult ticket price:	$68
Estimated employment numbers:	139
Main whale watch season:	July to October for whale watching, August, September, December, January for dolphin watching.[24]

Acknowledgements:
Herman Oosthuizen (Department of Environmental Affairs and Tourism), Paul Warmeant (EconNomics, Integrated Development Solutions), Christina Pretorius (IFAW), Wilfred Chivell (SABBWWA), Ian Stewart (Four Ball Plus Adventure Safaris), Vic Cockcroft (Centre for Dolphin Studies), Storm Kreusch (Hermanus Tourism Bureau) and all the members of the SABBWWA and all other boat and land-based operators, tour companies and tourism bureaus that assisted with our research.

[23] These figures are for boat-based whale watchers; results from land-based whale watchers are likely to include a higher percentage of domestic compared to international tourists.
[24] Dolphins are usually resident populations and can be seen all year round; these are the peak months for tourism.

Local Case Study: Hermanus, South Africa

The Western Cape of South Africa is one of the premier spots for land-based whale watching in the world, and the town of Hermanus, overlooking Walker Bay, is perhaps South Africa's best-known whale watching location. Like many whale watching regions around the world, in days gone by Hermanus was better known for whaling than whale watching. These days, nearly 400,000 tourists visit the town annually for land and boat-based southern right whale watching. Other cetaceans such as humpback whales, and some dolphin species, including the endemic Heaviside's dolphin, are also occasionally seen.

As it did in 1998, the town continues to hold an annual whale festival that attracts up to 100,000 people in a weekend. In the past, the festival ran for up to two weeks, but now takes places over a four-day weekend, usually in late September.

Hermanus is the only known whale watching town in the world to have an official 'Whale Crier'. Zolile Baleni is the town's current Whale Crier – his job is to sound a kelp horn when whales are sighted in Walker Bay. Different series of horn blows indicate the location and number of whales sighted. Zolile is the third person to work as a Whale Crier in Hermanus – the first, Pieter Claasens, was appointed in 1992. As well as sounding the kelp horn when whales are sighted, Zolile the Whale Crier is also a popular and iconic character during the whale watching season and a great source of information on Hermanus and the whales.

In 2008, the town's whale watching industry generated approximately $60m in total expenditure. A significant proportion of this expenditure is indirect expenditure, given the large numbers of land-based whale watching tourists visiting Hermanus. Our calculation of this expenditure is based on the estimated overnight capacity in Hermanus between June and November, combined with an estimated 70,000 tourists to the whale festival.

With high cliffs overlooking several favourite mating and calving spots for southern right whales along the South African coastline, in the peak months of September and October, daily sightings are practically guaranteed. And with value added events such as the whale festival, Hermanus will continue to benefit from whale watching, having firmly established itself as a premier destination for tourists interested in seeing these majestic animals in their natural environment.

Further reading:
http://www.whalefestival.co.za

Tanzania

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	15,000	194%	Unknown	$375,000	$938,000	$1,313,000
2008	19,818	2.8%	44	$201,011	$1,486,350	$1,888,372

★ Capital City: Dar Es Salaam
Whale Watch Locations:
01: Kizimkazi

Whale watching in Tanzania occurs within the Menai Bay Conservation Area, southwest of Unguja island, the larger of the two islands of Zanzibar. Forty-four boats, with an average capacity of eight passengers, operate out of the villages of Mkunguni and Dimbani, Kizimkazi. They primarily offer dolphin watching and 'swim-with' tours, together with short snorkelling on coral reefs on the return trip. Seasonal opportunistic whale watching is also offered.

The boats are operated mainly by local villagers, although in Mkunguni, as many as 50% of the boats are owned by individuals or tour companies operating out of Zanzibar town, about 40km northwest of Kizimkazi. These tour companies or individuals rent the boats to the local villagers to take tourists out. The average ticket price is approximately $20 for trips arranged in Zanzibar town. However, trips arranged locally in Kizimkazi cost approximately $40 per boat, with boats accommodating up to 8 people.

The Menai Bay Conservation Area covers an area of 467km^2 and was established with assistance from the WWF. The area is a marine park and is protected by the local communities, who depend on Menai Bay for their livelihoods. The need for the conservation area arose in the 1990s as destructive fishing practices started to have adverse impacts on local fishing industries. At the same time, the tourism potential of the local dolphin populations was also realised, with the value of tourism quickly becoming greater than that of fishing (dolphin meat was traditionally used as a bait for shark fishing). The Menai Bay Conservation Area is still actively managed and is now financed through the Tanzania Marine and Coastal Environmental Management Project, supported by the World Bank.

Because of ongoing concerns regarding the sustainability of the industry and the health of the cetaceans and the marine environment, the Kizimkazi Dolphin Tourism Operators Association (KIDOTOA) was established in 2005. The organisation focuses on research, education and conservation regarding cetaceans and dolphin watching tourism. Various stakeholders, including government, local institutions and community groups, as well as operators and local businesses were involved in the establishment of KIDOTOA.

The industry has continued to grow since 1998 from 15,000 tourists and $1.3 million in expenditure to almost 20,000 tourists and $1.9 million in expenditure in 2008. This represents an annual average growth rate in tourist numbers of 2.8%. The number of boats in the area has also increased by 2.3% between 1999 and 2008. The growth rate is almost half of inbound tourism arrivals to Tanzania between 2000 and 2004, or 5.4%.

Although the industry is clearly important to Zanzibar, supporting approximately 150 jobs, concerns remain regarding the sustainable number of boats and tourists viewing the dolphins. There are also concerns regarding how much the benefits actually flow back to the local communities. Women in the community apparently feel that they aren't benefitting; their incomes have actually been reduced due to dolphin watching tourism displacing them from their traditional fishing locations (Amir and Jiddawi, 1999). In June 2004, an entrance fee of $3 came into effect for tourism activities in Menai Bay (Berggren et al., 2007). The fee is paid per tourist and 30% of the revenue is provided to 19 villages around Menai Bay, including Kizimkazi-Mkunguni and Kizimkazi-Dimbani. The other 70% goes to the Menai Bay Conservation Area head office in Zanzibar town. Although there are some complaints from boat operators in Kizimkazi over the use of the collection fee (Amir, pers. comm.), initiatives such as this may improve the equitable distribution of benefits to local communities and may provide a good model for whale watching industries in developing countries.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *Indo-Pacific bottlenose dolphin, Indo-Pacific humpback dolphin*
Tourists:	
International	N/A[25]
Domestic	N/A
Land-based whale watching:	None
Types of tours:	Boat-based, dedicated, opportunistic
Average adult ticket price:	$20 if arranged from Zanzibar town, $7 if arranged in Kizimkazi
Estimated employment numbers:	150
Main whale watch season:	Year-round for dolphins, June to October for whales. Peak tourism season is between July and October.

Acknowledgements:
Omar Amir and the Institute of Marine Sciences of the University of Dar es Salaam.

References:

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Berggren, P, Amir, Amir, OA, Guissamulo, A, Jiddawi, NS, Ngazy, Z, Stensland, E, Sarnbland, A & Cockcroft. VG 2007, 'Sustainable Dolphin Tourism in East Africa'. MASMA Technical Report. WIOMSA Book Series No. 7, ix.+72pp.

[25] No data available from operators but the majority of tourists are likely to be international.

EUROPE

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	158,763	N/A	8	$2,161,000	$3,429,000	$5,690,000
1994	204,627	8.8%	16	$4,123,000	$17,862,000	$21,985,000
1998	418,332	19.6%	18	$11,048,000	$34,981,000	$46,029,000
2008	828,115	7.1%	22	$32,346,906	$65,290,135	$97,637,041

The European region has shown considerable growth in whale watching tourism in the last ten years; the number of whale watch tourists has almost doubled. From 418,000 whale watchers in 1998, it is estimated that almost 830,000 whale watchers undertook tours in 2008, representing an annual growth of 7.1%.

Only Ireland experienced a significant reduction in participants over that period. However, this appears due to bad weather conditions in the 2008 season impacting on whale watching opportunities. Greece and Croatia remain approximately at the same levels as in 1998.

Importantly, Scotland, Iceland, Spain, Portugal, the Azores Islands and the Madeira Archipelago have all witnessed a notable growth in whale watch activity in the last decade. In some cases, current estimates have more than doubled the number of whale watchers reported in 1998.

The type of cetacean watching shows clear differences depending on the location, from dedicated whale watch visitors following large cetaceans almost exclusively (Iceland, Norway, the Azores) to dolphin spotting amongst massive seasonal tourism (Spain, Portugal).

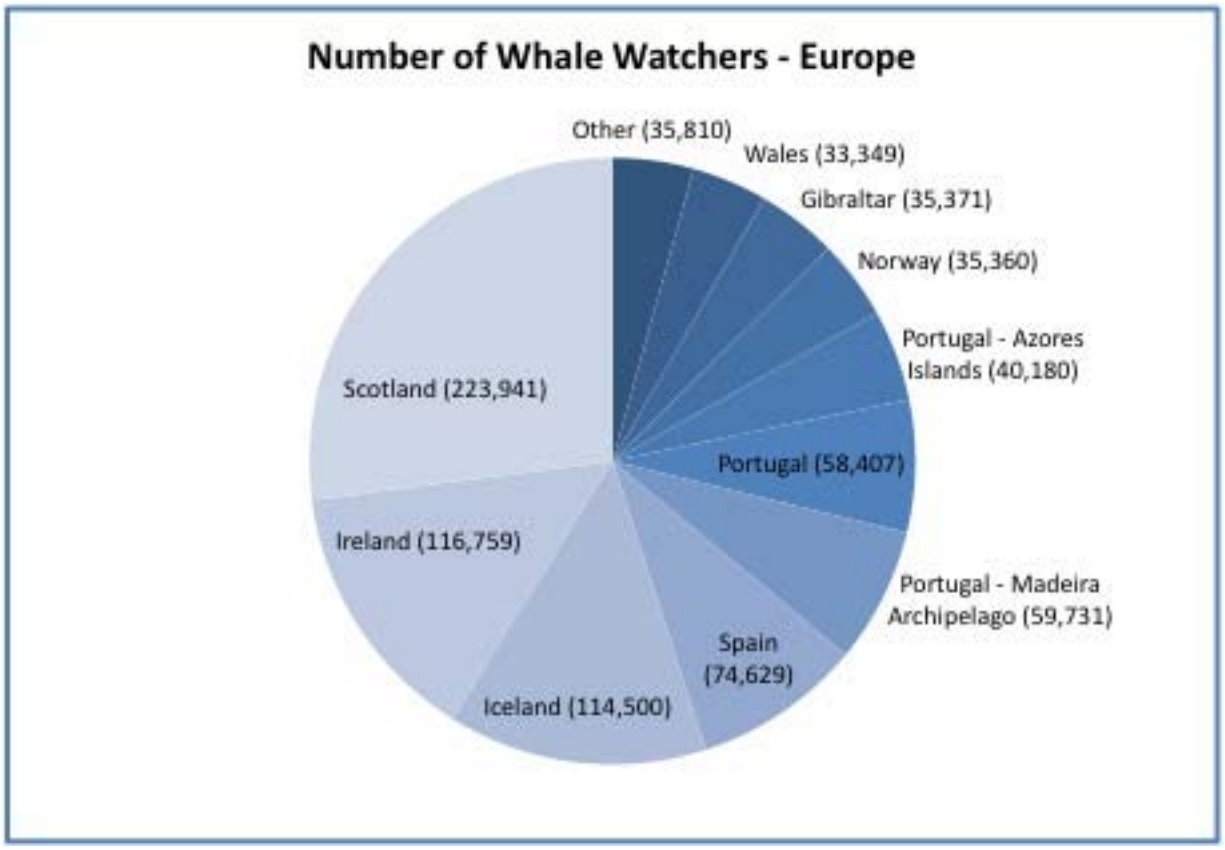
Two previously unreported locations are added for Europe: the Madeira Archipelago (which already accounts for 7% of Europe's whale watchers) and Slovenia. It's important to note that unlike the IFAW's 2001 report, which presented the UK as a single entity, this report examines Wales, England and Scotland separately.

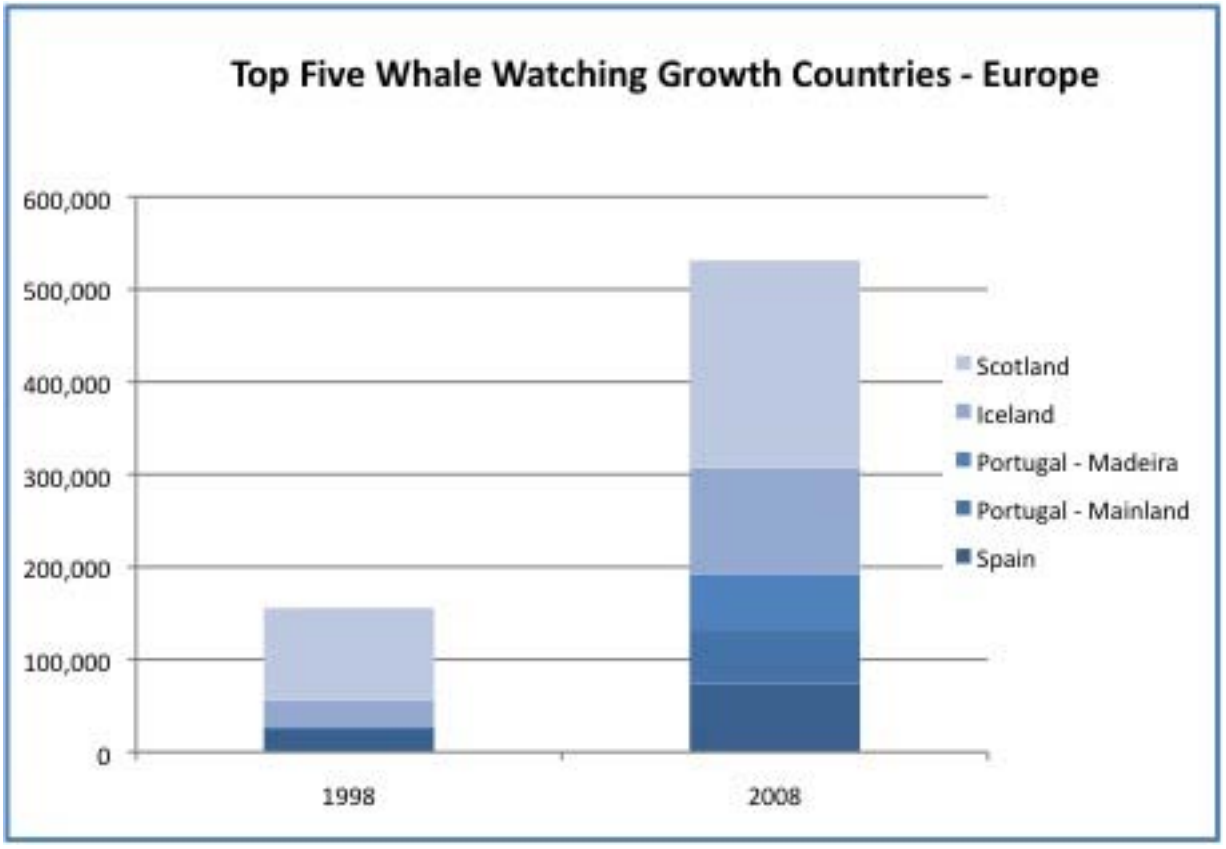
In total, we have reviewed 22 countries and territories in Europe; these countries' industries have a total value of approximately $93 million. Scotland has the largest proportion of Europe's whale watchers – approximately 27%. Iceland and Ireland account for 14% each, followed by Spain at 9% and Madeira and Portugal with 7% each. In monetary terms, Scotland and Iceland share the major proportion of Europe's whale watching revenues with 19% and 17% respectively, followed by Norway, Ireland, Spain, the Azores, Madeira and mainland Portugal with approximately 8-9% each. The remaining countries do not surpass 2-3%. Notably, Portugal as a whole (both mainland and Madeira and Azores islands) claims a total of approximately 23% of total revenues – the largest portion for Europe.

Summary of country results

Country	Number of whale watchers		Growth between 1998 and 2008
	1998	2008	AAGR
Croatia	21	24	1.3%
Cyprus	Minimal	100	N/A
Denmark	N/A	100	N/A
England	5,125	9,160	6.0%
Faroe Islands	Minimal	Minimal	N/A
France	750	5,535	22.1%
Germany	Minimal	Minimal	N/A
Gibraltar	18,750	35,371	6.6%
Greece	3,678	3,283	-1.1%
Greenland	2,500	3,250	2.4%
Iceland	30,330	114,500	14.2%
Ireland	177,600	116,759	-4.1%
Italy	5,300	14,415	10.5%
Monaco	Minimal	Minimal	N/A
Norway	22,398	35,360	4.8%
Portugal - Azores Islands	9,500	40,180	15.5%
Portugal – Madeira Archipegalo	None	59,731	72.9%
Portugal - Mainland	1,380	58,407	45.4%
Scotland	99,000	223,941	8.5%
Slovenia	None	21	N/A
Spain	25,000	74,629	11.6%
Wales	17,000	33,349	7.0%
REGIONAL TOTAL	418,332	828,115	7.1%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.


Number of Whale Watchers - Europe
Other (35,810)
Wales (33,349)
Gibraltar (35,371)
Norway (35,360)
Portugal - Azores Islands (40,180)
Portugal (58,407)
Portugal - Madeira Archipelago (59,731)
Spain (74,629)
Iceland (114,500)
Ireland (116,759)
Scotland (223,941)


Top Five Whale Watching Growth Countries - Europe
600,000
500,000
400,000
300,000
200,000
100,000
0
1998
2008
Scotland
Iceland
Portugal - Madeira
Portugal - Mainland
Spain

Croatia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	60	N/A	1	$24,000	$0	$24,000
1998	21	-23%	1	$15,000	$3,000	$18,000
2008	24	1.3%	1	$29,090	$8,093	$37,178

★ Capital City: Zagreb
Whale Watch Locations:
01: Veli Lošinj

Numbers of whale watchers remain low and are derived entirely from one cetacean research NGO located in Veli Lošinj, on Lošinj Island in the Cres-Lošinj archipelago of western Croatia. This organisation, Blue World Institute of Marine Research and Conservation, carries out scientific research and conservation projects focused on the bottlenose dolphin, and as part of this research it offers research trips to volunteers. The organisation aims to promote environmental awareness in the Cres-Lošinj archipelago, Croatia and the Adriatic region as a whole.

Journeys cost an average of $1,210 for a 12-day trip, with a maximum of five participants per programme. In 2008, seven multiple-day trips were offered with 70% occupancy rates. 20% of the participants in these trips were Croatian and 80% international – mainly from Italy, Austria, Spain and Slovenia. The season runs from June to September.

Trips are designed to allow viewing of resident population of bottlenose dolphins. Sightings and research are developed in the declared Lošinj Dolphin Reserve (in place since 2006), in the waters of the eastern part of the Cres-Lošinj archipelago.

According to the State Institute for Nature Protection, occasionally boats in Cres-Lošinj archipelago undertake dolphin watching as a side activity to their regular boat-based tours. These numbers are likely to be very low, and as little data are available due to the highly opportunistic manner of these operators, numbers are not quantified in this report.

Main species:	Small cetaceans: *bottlenose dolphin*
Tourists:	
International	80%
Domestic	20%
Types of tours:	Boat-based, multiple day research trips, dedicated.
Average adult ticket price:	$1,210/adult (12 days trip)
Estimated employment numbers:	1
Main whale watch season:	June to September

Acknowledgements:
Peter Mackelworth of Blue World Institute of Marine Research and Conservation and Ana Maricevic of the State Institute for Nature Protection.

Cyprus

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2008	< 100	N/A	1	$2,906	$2,522	$5,428

★ Capital City: Nicosia
Whale Watch Locations:
01: Ayia Napa

According to the United Nations World Tourism Organisation, Cyprus attracts 2.4 million tourists a year – approximately three times its population. Tourism is responsible for around 20% of the country's GDP (Clerides & Pashourtidou, 2007), and is clearly a major part of the Cypriot economy. 57% of these tourists are British and 6% German, followed by Greeks, Russians and Swedes with approx 5% each.

Within this context, whale watching is occasionally undertaken as an opportunistic tourist attraction. In 1998, only one NGO operator – based in Greece – was identified, offering trips on cetacean surveys through the waters of Cyprus. Currently, this programme is no longer in place. However, one operator based in Ayia Napa Harbour (Famagusta District, East Cyprus) promotes boat-based nature cruises, where dolphin watching is one of the attractions. The tour is a three-hour cruise on a vessel of around 25 passengers.

Main species:	Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, striped dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Boat-based, opportunistic, short trips
Average adult ticket price:	$63
Estimated employment numbers:	1
Main whale watch season:	N/A

Acknowledgements:
Myroula Hadjichristophorou, Cyprus Department of Fisheries and Marine Research.

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Clerides S. and Pashourtidou N. 2007. Tourism in Cyprus: Recent Trends and Lessons from the Tourist Satisfaction Survey. Department of Economics and Economics Research Centre, University of Cyprus. *Cyprus Economic Policy Review*, Vol. 1, No. 2, pp. 51-72.

Denmark

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	100	N/A	2	$1,962	$1,778	$3,740

★ Capital City: Copenhagen
Whale Watch Locations:
01: Kerteminde

Denmark does not have any significant established whale watching industry in place, despite the occasional sightings of cetaceans along the coastline, including harbour porpoises, white-beaked dolphins and the less frequently sighted minke whale.

A marine centre at Kerteminde on the Island of Funen in central Denmark organises guided trips to the Kerteminde Fiord where three resident porpoises are visited. A three hour tour costs $44 per adult/$22 per child. Some porpoise watching also occurs in Strib, on the same island.

Due to the existence of other species of cetaceans in the waters around Denmark, other more opportunistic whale watching does occasionally occur during long cruises in the western region of the country.

Main species:	Large cetaceans: *minke whales* Small cetaceans: *harbour porpoise, white-beaked dolphin*
Tourists:	
International	10%
Domestic	90%
Types of tours:	Boat-based, short trips (1 hour), opportunistic, education and research
Average adult ticket price:	$44
Estimated employment numbers:	3
Main whale watch season:	July to mid-August

Acknowledgements:
Magnus Wahlberg of Fjord and Baelt

Faroe Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal
2008	Minimal	Minimal	Minimal	Minimal	Minimal	Minimal

★ Capital City: Tórshavn

According to the local tourism board, no dedicated whale watching activities are offered in the Faroe Islands.

Occasional sightings are possible when boat cruises stop in the Faroe Islands during their journey from Denmark to Iceland as well as occasional sightings as part of other nature cruises. The main species that those on the cruises may see are long-finned pilot whales, Atlantic white-sided dolphins and orcas.

Although whale watching could have potential as an industry in the Faroes due to the presence of cetaceans in local waters, the local cetacean hunt, the Grind, contradicts the conservation motivations of many nature tourists and therefore the Faroes is not a destination of choice for those wishing to see whales in their natural environment.

Main species:	Small cetaceans: *Atlantic white-sided dolphin, long-finned pilot whale, orca*
Tourists:	
International	N/A
Domestic	
Types of tours:	opportunistic/incidental
Average adult ticket price:	N/A
Estimated employment numbers:	None
Main whale watch season:	N/A

France

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	1,000	N/A	N/A	$100,000	$103,000	$203,000
1994	800	-7.2%	N/A	$80,000	$200,000	$280,000
1998	750	-1.6%	13	$411,000	$101,000	$512,000
2008	5,535	22%	23	$778,494	$854,279	$1,632,773

★ Capital City: Paris
Whale Watch Locations:
01: Sanary and Hyères
02: Carry-le-Rouet
03: Ajaccio
04: Fréjus
05: Nord-Pas de Calais

France continues to offer a small whale watching industry based mainly on the Mediterranean Sea. Previous studies since 1991 have found a small, niche whale watching industry that has supported a steady number of around 1,000 whale watchers. In the last decade, the industry has recorded an average growth rate of 22% per annum, reaching 5,535 whale watch tourists in 2008. This estimate is based primarily on a 2007 report that found 4,840 whale watchers for 2005 (Mayol et al.), from which a constant trend projection was made to ascertain a 2008 figure (combined with average tourist arrival growth statistics to France in this period).

There are three main French coastal zones where cetaceans are regularly sighted: the Mediterranean Sea, the English Channel and the Atlantic Ocean. Some less regular sightings also occur in Nord-Pas de Calais in the North Sea. 95% of the 5,535 whale watchers recorded in 2008 were concentrated on the Mediterranean, focused around the Provence-Alpes-Côte d'Azur region. Boat-based whale watching trips depart mainly from Carry-le-Rouet, Sanary and Hyères, Fréjus and Beaulieu (Côte d'Azur), and Ajaccio on Corsica.

Cetaceans are spotted on a stretch of coastline from Marseille to Saint-Tropez, predominantly between Sanary and Le Levant, outside the boundaries of the Pelagos Sanctuary for Mediterranean Marine Mammals, as well as waters close to shore around the Îles d'Hyères and the west coast of Corsica (Gulf of Ajaccio and Scandola nature reservation). The activity extends to the west to the Gulf of Lion (Mayol et al, 2007).

The remaining 5% of whale watchers are found in Nord-Pas de Calais region (North Sea), Cherbourg Octeville (Normandy, the English Channel), La Rochelle and Capbreton (Aquitaine region) off the Bay of Biscay. Whale watching in these regions is organised exclusively by local marine research and conservation NGOs without commercial purposes. These regions also attract some land-based whale watchers.

On the French Mediterranean coast, 23 tour operators were identified (Mayol et al, 2007), undertaking both commercial and research based whale watching trips. A variety of tours are offered, from half-day trips to three- or four-day journeys. All of these trips are combined with sightseeing and nature watching. Prices range from $52 to $520.

In addition to these commercial ventures, research organisations offer six-to seven-day dedicated whale watching trips, with prices ranging from $800 to $1,000. According to Mayol et al, while a code of conduct for whale watching is in place, there are reports of frequent non-compliance with this code by many of the commercial operators. More recently, there has been an attempt to put in place a certification label for responsible whale watching.

Recreational whale and dolphin watching is a highly seasonal activity in France, beginning in April-May and peaking from June to September. However, a significant number of operators keep working until the end of November.

Species sighted depend on the coastal zone. Short-beaked common dolphins are common in the English Channel and Atlantic coast. Sperm and fin whales are sighted in the Atlantic and in the Mediterranean Sea. Striped and Risso's dolphins are more frequent off the Mediterranean coast. Bottlenose dolphins are common to all of these locations.

Main species:	Large cetaceans: *fin whale, sperm whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, long-finned pilot whale, Risso's dolphin, striped dolphin*
Tourists:	
International	25%
Domestic	75%
Types of tours:	Boat-based, land-based, half-day trips, full-day trips, multiple-day trips, dedicated & research, opportunistic.
Average adult ticket price:	$52 to $520, depending on trip.
Estimated employment numbers:	32
Main whale watch season:	May to September

Acknowledgements:
Pascal Mayol of Souffleurs d'Ecume, François Gally & Philipe Robert of Groupe d'Etude des Cétacés du Cotentin, Olivier Van Canneyt of Centre de Recherche sur les Mammifères Marins, Université de la Rochelle.

References:
Mayol P, Beaubrun P, Dhermain F, Richez G 2007, 'Commercial whale watching off the French Mediterranean coast', 59th International Meeting Commission (IWC/59/10), Anchorage, USA, p. 14.

Germany

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2008	Minimal	N/A	Minimal	Minimal	Minimal	Minimal

Capital City: Berlin
Whale Watch Locations:
01: Sylt

Despite having regular and popular sightings of harbour porpoises on the German island of Sylt in the North Sea, there remains no real formal whale or dolphin watching industry in Germany.

Only very minimal cetacean watching occurs off the German coast. No established formal tours are present but porpoises are a popular attraction during the months of April to October on Sylt and are occasionally seen also from boats. In particular, according to Hoyt (2003), harbour porpoises can be seen regularly from the ferry that travels between the Danish Island of Rømø and the northern end of Sylt.

References:

Hoyt, E 2003, 'The Best Whale Watching in Europe –a guide to seeing whales, dolphins and porpoises in all European waters', WDCS, Unterhaching, Germany, 60pp.

Gibraltar

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	2,500	N/A	N/A	$52,000	$128,000	$180,000
1994	10,000	58%	N/A	$243,000	$607,000	$850,000
1998	18,750	17%	5	$450,000	$2,250,000	$2,700,000
2008	35,371	6.6%	8	$834,077	$1,664,551	$2,498,628

★ Capital City: Gibraltar

The British overseas territory of Gibraltar has a whale and dolphin watching industry based around the waters of the Strait of Gibraltar and Algeciras Bay. In 2008, the territory attracted an estimated 35,370 whale watchers, an increase of 6.5% per year since the last estimate made in 1998.

A total of eight companies run whale watch operations in Gibraltar, seven of which can be classified as dedicated whale and dolphin watching operators. The industry focuses mainly on dolphin sightings, though two companies offer whale watch trips when whales are present in the Strait of Gibraltar. Tours run for approx 60-90 minutes, costing on average $28 per adult and $16 per child. The activity is concentrated between April and November, with its peak in July and August. Some operators run business all year around, and are mostly patronised by Western Europeans. The main departure points for these activities are Marina Bay and Queensway Quay.

The Bay of Gibraltar (or Algeciras Bay) is a breeding and nursery area for short-beaked common dolphins, and striped and bottlenose dolphins are also sighted. Other whales seen include humpback whales, with occasional sightings of sperm, killer, false killer, minke and long-finned pilot whales.

Main species:	Large cetaceans: *fin whale, sperm whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, striped dolphin, long-finned pilot whale*
Tourists:	
International	10%
Domestic	90% (most are British however considered domestic in this case)
Types of tours:	Boat-based, half-day trips, full-day trips, dedicated, opportunistic.
Average adult ticket price:	$28
Estimated employment numbers:	42
Main whale watch season:	February to August

Greece

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	80	N/A	N/A	$36,000	$0	$36,000
1998	3,678	160%	3	$140,000	$121,000	$261,000
2008	3,283	-1.1%	7	$297,546	$407,897	$705,443

★ Capital City: Athens
Whale Watch Locations:
01: Island of Kalamos
02: Gulf of Corinth
03: Crete

Commercial whale and dolphin watching in Greece does not form a significant tourism attraction – rather, it is undertaken as a complement to nature and sight-seeing cruises.

The slight decrease in whale watching numbers between 1998 and 2008 can be explained by some unsuccessful attempts to develop a whale watching industry in southwest Crete. According to information collected from one local cetacean research organisation, some of the early whale watch trips resulted in some disturbance of species' habitats and had negative impacts on research efforts due to their poor management. The industry now remains more geared towards the multiple-day eco-tourism and research programmes with fewer participants and higher costs.

Dedicated NGO research programmes offer long multiple-day trips (generally around six days) to tourists who want to participate in research. These trips are focused on the Gulf of Corinth, eastern Ionian Sea and southwest Crete. Costs range from $800 to $1,000 depending on the season, and trips generally cater for groups of up to six people (although one of the research organisations potentially carries up to 50 participants).

Commercial multiple-day boat tours that allow for opportunistic viewing of cetaceans are offered in the Aegean Sea and Ionian Sea. These tours cost approximately $940 per person for a seven-day cruise, and have a capacity of up to six passengers. Short tours of three hours' duration are offered in Paleochora in southwest Crete, costing around $23 per adult.

A variety of dolphins – including bottlenose, short-beaked common, Risso's and striped dolphins – is the main focus of these trips. Cuvier's beaked whales are found in the waters of the Aegean, Ionian and Libyan Sea, and southwest Crete is of special biological significance for an important sperm whale population in the Mediterranean Sea (Pelagos Cetacean Research Institute).

Main species:	Large cetaceans: *sperm whale (north west of Crete)* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, Cuvier's beaked whale, Risso's dolphin, striped dolphin*
Tourists:	
International	70%
Domestic	30%
Types of tours:	Boat-based, multiple-day trip, opportunistic, dedicated, short excursion trips, research trip
Average adult ticket price:	$22.50 (3 hour trip) $900 (6 day trip)
Estimated employment numbers:	10
Main whale watch season:	April to September

Acknowledgements:
Alexandros Frantzis of Pelagos Cetacean Research Institute

Greenland

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	100	N/A	N/A	$16,000	$41,000	$57,000
1998	2,500	124%	8	$832,000	$1,918,000	$2,750,000
2007	3,250	2.9%	10	$313,500	$646,700	$960,200

★ Capital City: Nuuk
Whale Watch Locations:
01: Ilulissat
02: Qeqertarsuaq
03: Sisimiut
04: Nanortalik
05: Tasiilaq

Like tourism in Greenland overall, the number of whale watch tourists has increased steadily since 1998. Overall inbound tourism has grown at a rate of 3.8% per annum to a total of 33,100 in 2005, mirroring the growth in whale watchers, the number of which has risen to 3,250 at 2.9% per annum.

In Greenland, whale watching tours are promoted by, and can be arranged through, local tourism offices. They are usually combined with other nature cruises. Most of the activity is concentrated in the Disko region on the country's central west coast, with trips departing from Ilulissat, Qeqertarsuaq, Qasigiannguit, Aasiaat, Uummannaq and Kangaatsiaq.

There is also a whale watching industry in western Greenland; in the locality of Sisimiut, several operators and one agency are presently offering whale watching trips from the capital, Nuuk, and from Maniitsoq. Trips are also offered at Qaqortoq and Nanortalik in the south and Kuummiut and Tasiilaq in the east.

Although the numbers of whale watch participants have increased over the past ten years, findings in 2008 had average ticket prices lower than in 1998, and calculated indirect expenditure figures lower due to a slight change in methodology applied (for example, no additional travel expenses were attributed to whale watching in 2008, relying purely on average daily tourist expenditure, despite the acknowledged long distances people must travel to reach whale watch destinations). Despite average daily expenditure in Greenland potentially being very high for tourists, our research indicates an average daily rate of $200 to be most appropriate and supported by local data.

Data on the nationality of whale watching tourists was unavailable, but general tourism statistics indicate that 60% of the Greenland's tourists are Danish, with German, North American and British tourists accounting for 5% each (Market Analysis of Tourism, 2006-2007. Statistic Greenland, July 2008).

No exclusively dedicated whale watching operator was identified. Most of the tourists to Greenland are seeking a broad array of nature experiences, rather than just one specific attraction. Some companies who undertake a range of trips do promote dedicated cetacean watching trips once or twice a week during peak season (July – August). However, this is within the range of different tours available (icecap trekking, dog sledge, fishing, nature-cultural cruises, and whale watching). Most companies undertake half- or full-day excursions, combining whale watching with nature sighting and cultural visits. The duration of these trips tends to be between three and six hours on average, costing around $140.

The season for whale watching peaks from late July to end of September. Humpback whales, minke whales and fin whales, in particular, can be seen close to the towns and in the fjords in the west of Greenland, whilst beluga whales and narwhals are more common in north and east Greenland.

Main species:	Large cetaceans: *fin whale, humpback whale, minke whale – others occasionally sighted* Small cetaceans: *beluga whale, narwhal, orca*
Tourists:	
International	100%
Domestic	
Types of tours:	Boat-based, half-day trips (four hours), excursion trips, opportunistic.
Average adult ticket price:	$138
Estimated employment numbers:	12
Main whale watch season:	Late July to the end of September

Acknowledgements:
Two local tour operators: Brigitta Dahlberg of Greenland Tours, and Kai Drastrup of Maniitsoq Adventures Incoming.

Iceland

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	100	N/A	1	$17,000	$43,000	$60,000
1994	200	26%	4	$32,000	$114,000	$146,000
1998	30,330	251%	12	$2,958,000	$3,512,000	$6,470,000
2008	114,500	14%	10	$6,618,087	$10,090,900	$16,708,987

★ Capital City: Reykjavík
Whale Watch Locations:
01: Reykjavík
02: Húsavík
03: Vestmann Islands

In 1998, Iceland had already shown an explosive growth in the whale and dolphin watching industry compared to 1994 (251% per year). Since then, the number of whale watchers has continued to grow, from 30,330 in 1998 to 114,500 in 2008 (an annual average increase of 14%), although the number of tour operators remains relatively stable. Whale watching activity is concentrated in Reykjavík (which accounts for 51% of whale watch visitors) and Húsavík in the north (36%). Other locations are Dalvík and Hauganes, also in the country's north, which account for 6% of whale watchers; Olafsvik and Drangsnes in the northwest, with 5%; and the Vestmann Islands in the south, with around 2%.

Whale watching is well established in Iceland, with nine tour operators offering dedicated cetacean watching trips from April to October (one of them operates during June and July only, focusing on the northern bottlenose whales from Akureyri in the north), along with one opportunistic operator. Recently, one operator has also reportedly started to offer trips on weekends in winter from Reykjavík, targeting white-beaked dolphins and humpbacks. Trips last approximately three hours and cost an average of $60 per adult. Most operators utilise large vessels, some of them with a capacity of up to 145 passengers, but the average vessel capacity is 59 passengers.

The best time to go whale watching is from June – August. Iceland is home to diverse populations of whales, although many of them only spend the summer months in Icelandic waters according to the Whale Museum in Húsavík. Up to 11 species can frequently be spotted, including minke, blue and humpback whales, white-beaked dolphins, orcas, sperm whales, northern bottlenose whales, long-finned pilot whales, harbour porpoises and, according to one of the operators, less frequently sei and fin whales.

Main species:	Large cetaceans: *blue whale, humpback whale, minke whale, northern bottlenose whale, sperm whale* Small cetaceans: *harbour porpoise, orca, white-beaked dolphin*
Tourists:	
International	94%
Domestic	6%
Types of tours:	Boat-based, half-day trips (three hours), charters, dedicated, opportunistic, photo identification and educational research.
Average adult ticket price:	$60
Estimated employment numbers:	104
Main whale watch season:	June to August

Acknowledgements:
Rannveig Grétarsdóttir of Reykjavík Whale Watching, Elke Wald of Húsavík Whale Museum, Kristrun Konradsdottir of Seatours, and Torunn Hardardottir of North Sailing.

Local Case Study: Húsavík, Iceland

The village of Húsavík is a traditional sub-Arctic fishing community of only 2,500 inhabitants located in northeast Iceland. In 2008, this small community was host to approximately 41,500 whale watchers.

From its earliest beginnings, the village has based its local economy on fishing, fish processing and the trade of fish products (such as herring, cod, haddock and shrimp), developing close social and cultural links to the activity and its natural environment. The hunting of whales, dolphins and seals as a source of food for the village has been also a local tradition. Thus, when foreign travel companies looking to develop whale watching as well as foreign organisations promoting the conservation of cetaceans directed their attentions towards Iceland, it was in these kinds of communities where they often focused.

Fishing conditions have been changing in Iceland since the early 1960s, when this sector represented 90% of all exports. Nowadays, it reaches only 51%. The decrease in cod fish quotas (the most valuable species) has had significant effects on businesses, communities and individual fishermen and fish workers, with a loss of income and employment opportunities (Einarsson, 2009). Likewise, in 1984, the individual transferable quota (ITQ) system introduced in Iceland aimed at developing an efficient fisheries management model resulted in the concentration of fishing licenses in few hands, mostly away from the fishing villages, reducing fishery related employment even more. These factors required local families to adapt and look for new reliable economic alternatives.

In 1995, after an intensive 3-day whale watch training workshop held near Reykjavík for prospective operators from all over Iceland, given by the Whale and Dolphin Conservation Society, whale watching started to emerge as one of these economic alternatives for Húsavík (Hoyt, 2001). Some 2,200 tourists participated that summer, although there were still doubts about its viability. From there, whale watching took off, doubling in numbers almost every year through the 1990s when Iceland had one of the highest growth rates for whale watching in the world. In 1998 the state-of-the-art Húsavík Whale Centre opened, attracting nearly 6,000 tourists the first year. New restaurants, B&Bs and whale watch ticket offices followed. Soon after, a big road sign on the remote road leading to the turnoff to Húsavík proudly proclaimed 'Husavik: Whale Watching Capital of Europe'.

Despite there being little data available to estimate the total benefits that the activity brings to villages such as Húsavík, the 40,000 cetacean watchers present in 2007 (from a total of 104,000), buying tickets, using local services and visiting local attractions such as the whale museum make a significant contribution to strengthen the local economy. During the 2007 season, the two whale watching companies had some 35-40 employees and 7 boats in operation between them. In addition, there were between 12-14 people working in the Húsavík Whale Museum (Einarsson, 2009). Recent data collected in 2008, shows that 41,500 tourists embarked on whale watching tours from the port of Húsavík, out of 114,500 countrywide.

Certainly, whale watching has been growing, but not without local conflicts. Due to the reduction in fish catch and quotas, some see whales more as competitors for fishing resources than as a natural resource for tourism. Most locals seem to be in favor of hunting whales and were initially quite skeptical of any whale watching success. During the first years of whale watching, several incidents occurred in which fishermen had been disturbed during hunting, and tourists were upset when seals were hunted close to their boats (Einarsson, 2009). More recently, during the industry's consolidation phase, increasing movements of whale watching boats, tourists, private cars, buses and general traffic have overcrowded the foreshore and the limited port installations. Fishermen complain with some reason that their work is being affected by whale watchers operating close to the harbour.

An adaptation has already started to emerge to meet the needs of both the fishermen and the whale watchers. In particular, the territorial conflicts where whale watching and hunting crossed paths were

solved through dialogue with fishermen deciding to take their hunting farther away from the village.

According to the regional economic development office, whale watching has considerable relevance for the socioeconomic viability of the community. In particular, the industry has led to new jobs being created in an internationally oriented enterprise where few such jobs previously existed. These have been filled largely by the younger members of the population. The decrease in fisheries revenues in the village has been, to some extent, compensated via the new tourism activity.

New office and service facilities built by one of the tour companies reflects the ideology of whale watching as a natural and embedded extension of local marine culture. The use of traditional Icelandic timber houses (Siberian driftwood gathered on the nearby coastline) reveals an awareness of traditions and environmental consciousness as Einarsson (2009) describes.

A remarkable aspect during this adaptation has been the boat infrastructure incorporated in the whale watching business. After the ITQ system caused the under-utilization of a sizable number of fishing boats, many of them were available at considerably low costs, facilitating an economic adaptation and the establishment of the new activity. Some of these vessels had been previously used for whaling, carrying reminders of a genuine coastal culture. In spite of high restoration costs, the new owners have often decided to restore them for their whale watching trips. The use of wood, crafted by skilled artisans, is integral to the image, authenticity and identity of the local whale watching industry, a business in which some former whale hunters are participating today.

Húsavík's process of adapting to new economic conditions has resulted in the town becoming an important whale watching destination not only in Iceland, but also in Europe largely thanks to the community's resilience in the face of external challenges.

Based on:

Conversations with the Húsavík Whale Museum, as well as:

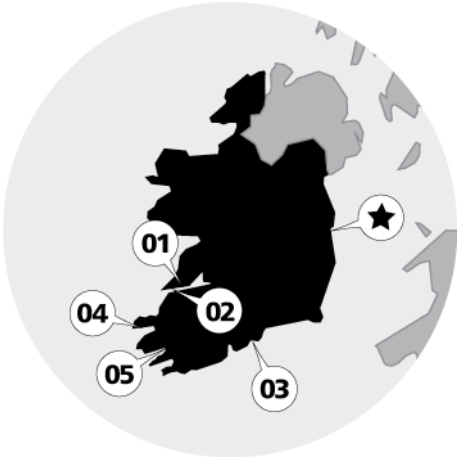
Einarsson, N 2009, 'From good to eat, to good to watch: whale watching, adaptation and change in Icelandic fishing communities', *Polar Research*, vol. 28, 2009, pp. 129-138.

Hoyt, E 2001. Whale watching 2001. Worldwide tourism numbers, expenditures, and expanding socioeconomic benefits.

Ireland

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	150,000	N/A	N/A	$1,290,000	$1,720,000	$3,010,000
1994	165,000	3.2%	N/A	$1,337,000	$3,342,000	$4,679,000
1998	177,000	1.8%	N/A	$1,322,000	$5,797,000	$7,119,000
2008	116,759	-4.1%	21	$2,938,965	$8,559,920	$11,498,885

★ Capital City: Dublin
Whale Watch Locations:
01: Kilrush
02: Carrigaholt
03: Youghal
04: Dingle
05: Kenmare



Ireland is a popular destination for dolphin watching in Europe with approximately 116,760 participants in 2008. This number represents a decline in comparison to 1998. However, this is likely to be due to bad weather conditions experienced during the 2008 season rather than a sign of any long-term decline. According to information provided by a local NGO, it would be more likely that the overall trend in whale watcher numbers has been steady over the last decade, according to our discussions with operators.

Another reason for the numbers in 2008 being lower than 1998 is an adjustment in the number of dolphin watchers in the locality of Dingle, County Kerry, exclusively visiting the charismatic local dolphin named Fungi. In 1998, over 150,000 Fungi watchers were counted. In 2008, the surveyed Local Boat Association reported 70,000 dolphin watchers. If Fungi watchers data are excluded from 1998 and 2008, then the industry increased from 27,000 to 46,760 whale and dolphin watchers at an annual average rate of 5.5%. Despite this decrease, this remains a significant number of whale watchers for a sole animal that has had ongoing interactions with humans for well over 25 years.

Land-based whale watching is quite active along the Irish coast. Based on data gathered for this report, it is estimated that approximately 1,890 dolphin watchers undertook land-based viewing as part of summer events promoted by a local whale and dolphin conservation organisation. One of these events in particular is the All Ireland Whale Watch Day (called 'Whale Watch Ireland'). This is an annual event on the 24th August, which celebrates the Irish declaration of a whale and dolphin sanctuary. In 2008, this event was attended by around 1,500 participants on 15 headlands around the Irish Coast, including Hook Head and Galley Head.

The country's boat-based whale watching activity is based around the Shannon Estuary, County Clare, with Kilrush and Carrigaholt as departing ports. This area accounts for 40% of Ireland's sea-based whale watchers. County Kerry (Durquin, Dingle, Doon and Cahirciveen localities) contributes 30%, while West County Cork (Baltimore, Youghal, Cork Harbour, Castlehaven, Castletownshend) has approximately 20%. Many tour operators offer opportunistic tours along with other cruises, and only seven companies/associations are identified as dedicated cetacean watching operators.

Dolphin watch tours last two hours on average; whale watch trips extend from two and four hours. Several charters are offered for half- and full-day trips. Most boats have an average capacity of 12 passengers though at least three operators own large vessels with a capacity of up to 80 seats. Trips cost approximately $57 per adult and $32 per child.

Harbour porpoises, short-beaked common dolphins, minke whales and fin whales are regularly spotted at different times of the year, depending on the location. Short-beaked common and bottlenose dolphins and porpoises are resident off the coast of County Cork all year round. The whales (such as humpbacks) are more seasonal, with occasional sightings from June to January. The Shannon estuary is home to Ireland's best known resident population of bottlenose dolphins.

Main species:	Large cetaceans: *fin whale, minke whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, harbour porpoise*
Tourists:	
International	57%
Domestic	43%
Types of tours:	Boat-based, land-based, short trips (two or three hours), half-day trips, chartered full-day trips, dedicated, opportunistic.
Average adult ticket price:	$57
Estimated employment numbers:	42
Main whale watch season:	June to December (southwest coast), April to October (Shannon Estuary), May to September (all other coasts)

Acknowledgements:
Pádraig Whooley and Simon Berrow of Irish Whale & Dolphin Group, Dingle Boatmen's Association, Susanne Magee of Dolphinwatch Carrigaholt and Francis Maye of Spirit Adventure.

Italy

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	200	N/A	N/A	$300,000	$0	$300,000
1994	160	-7.2%	N/A	$81,000	$0	$81,000
1998	5,300	140%	3	$241,000	$302,000	$543,000
2008	14,415	10.5%	6	$839,426	$1,836,437	$2,675,863

★ Capital City: Rome
Whale Watch Locations:
01: Genova
02: San Remo
03: Viareggio
04: Forio
05: Imperia

Considering Italy is one of the top worldwide tourist destinations, whale watching hasn't gained a significant presence in terms of number of whale watchers. Nevertheless, it does appear to be active in conservation, sharing with France and Monaco marine protected areas such as the Pelagos Sanctuary for Mediterranean Marine Mammals (originally called the Ligurian Sea Cetacean Sanctuary). Data collected for this report indicates a total of 14,415 whale watchers in Italy. Compared to 1998, this equates to an average growth of 10.5% per year.

Commercial whale watching is focused on San Remo, Imperia and Genova off the Ligurian Sea, which is home to 90% of Italy's whale watching activity. Research programmes are organised from Viareggio in the Tuscany region and from San Remo in the Ligurian Coast, visiting the Pelagos Sanctuary. Waters off the Tuscan Archipelago Park are reached by trips departing from Viareggio. From Forio, Ischia Island, research trips are oriented to the Tyrrhenian Sea off the Gulf of Naples and Archipelago Campano.

Three non-profit operators (research NGOs) offer dedicated trips, either weekend or six-day programmes. Cost varies from $290 for the weekend trips to $750-$1,200 for the six-day research projects. These are offered from May to October. Shorter dedicated tours are mainly offered by commercial operators, lasting between five hours to a full-day cruise, and costing on average $40 per adult or $26 per child (departing from Ligurian Sea coast where most operators are located). The season runs from July to middle September.

The main species spotted are the striped dolphin, bottlenose dolphin, sperm whale, fin whale, Risso's dolphin and Cuvier's beaked whale (Tethys Institute).

Main species:	Large cetaceans: *fin whale, sperm whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, long-finned pilot whale, Risso's dolphin, striped dolphin, Cuvier's beaked whale*

Tourists:	
International	25%
Domestic	75%
Types of tours:	Boat-based, half-day trips (5 hrs), full-day trips, multiple-day trip, dedicated.
Average adult ticket price:	$40 (half-day trip) $975 (6 day trip)
Estimated employment numbers:	8
Main whale watch season:	July to mid-September

Monaco

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2008	Minimal	N/A	Minimal	Minimal	Minimal	Minimal

★ Capital City: Monaco

Cetacean watching off the coast of Monaco shows only minimal participation levels. The activity is of an occasional character due to most tours in this region operating mainly from the French coast.

No established tours are reported however occasional dolphin and whale watching is undertaken. The main species that can be seen are the short-beaked common dolphin, striped dolphin, bottlenose dolphin, Risso's dolphin, fin whale, sperm whale, and long-finned pilot whale, mainly during the months of May to September.

Main species:	Large cetaceans: *fin whale, sperm whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, long-finned pilot whale, Risso's dolphin, striped dolphin*
Tourists:	
International	N/A
Domestic	
Types of tours:	Boat-based, opportunistic
Average adult ticket price:	N/A
Estimated employment numbers:	None
Main whale watch season:	May to September

Norway

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditures	Indirect expenditure	Total expenditure
1991	4,563	N/A	1	$459,000	$1,148,000	$1,607,000
1994	11,227	35.0%	3	$834,000	$3,733,000	$4,567,000
1998	22,380	18.8%	8	$1,632,000	$10,411,000	$12,043,000
2008	35,360	4.7%	20	$3,915,300	$6,101,000	$10,016,300

★ Capital City: Oslo
Whale Watch Locations:
01: Andenes
02: Tromsø
03: Stø
04: Narvik
05: Svolvær

Norway continues to be a significant whale watching industry in Europe, with an annual average growth of approximately 5% over the last 10 years, with over 35,000 whale watchers recorded in 2008.

The industry is based in the locations of Andenes (Andøya Island, Nordland county – accounting for approximately 45-50% of the country's total whale watchers), around the Lofoten Islands (being approached from Narvik on the shores of the Narvik Fjord on the mainland), and Svolvær (on the south coast of Austvågøy Island). Also, distant localities such as Stø in Langøya Island (Vesterålen district, Nordland county) and Tromsø (on the east side of Tromsøya Island) offer some whale watching trips. Whale tourism is a particularly important activity for the locality of Andenes. The area has a population of only 2,900 inhabitants, but approximately 16,300 whale watchers used it as departing port in 2008, providing significant economic benefit to the area.

Most trips are round trips of approximately four to five hours out from the coastal ports. The average cost per trip is $130, according to published tariffs online. Several operators offer dedicated multiple-day whale watch trips (for three, six or ten days), but these are also complemented with fishing, nature and cultural cruises around the Lofoten Islands.

Target species are mainly sperm whales followed by minke whales, orcas, and sometimes long-finned pilot and humpback whales. White-beaked dolphins and harbour porpoises are also seen.

Apart from the peak seasons of June to August, orca watching represents an important attraction during the months of late October to January. During this time, orcas enter the northern fjords, particularly around Tysfjord (located near Narvik on the map above), to feed on herring schools.

Unfortunately, according to recent news publications (Avisa Nordland, Jan 2009) and operator information, the levels of herring have decreased in recent years, making it more difficult to see orcas. This has resulted in a reduction in the number of trips offering orca sightings and a subsequent decrease in total orca watchers to approximately half the number of previous years (from 5,500 to 2,500).

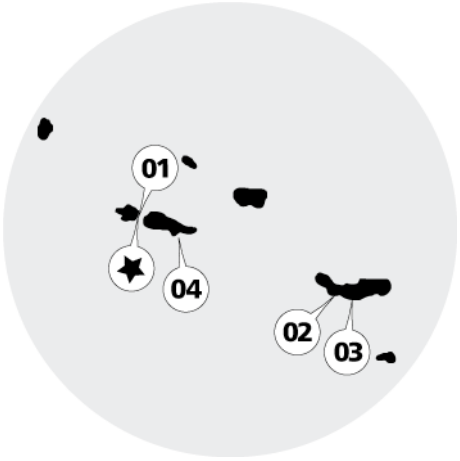
Main species:	Large cetaceans: *humpback whale, minke whale, sperm whale* Small cetaceans: *orca, long-finned pilot whale, white-beaked dolphin, harbour porpoise*
Tourists:	
International	85%
Domestic	15%
Types of tours:	Boat-based, dedicated, opportunistic, short trips, multiple-day trips
Average adult ticket price:	$130
Estimated employment numbers:	93
Main whale watch season:	June to August; late October to January

Acknowledgements:
Arctic Whale Tours, Heike Iris Vester of Ocean Sounds AS, Audun Aanes of Gamle Lofotferga (Orca Lofoten), Jann Engstad of Lofoten Kajakk, Annelie Utter Natur Resor AB, Mario Acquarone of North Atlantic Marine Mammal Commission (NAMMCO) and Annbjørg Gjerdrum of WhaleSafari Ltd.

Portugal - Azores Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	1,000	58.7%	N/A	$31,000	$633,000	$664,000
1998	9,500	75%	6	$582,000	$2,788,000	$3,370,000
2008	40,180	15.5%	19	$2,691,580	$4,979,203	$7,670,783

★ Capital City: Horta
Whale Watch Locations:
01: Horta, Faial Island
02: Ponta Delgada, São Miguel Island
03: Vila Franca do Campo, São Miguel Island
04: Lajes de Pico, Pico Island



The Azores have become a well-known destination for whale watching activities in recent years. From 9,500 whale watchers in 1998, it is estimated a total of 40,180 tourists undertook whale watching in 2008, an average annual growth rate of 15.5% over the ten years since the Hoyt report.

Today whale and dolphin watching is recognized as a 'very important' local tourism activity that's offered as one of the islands' main tourist attractions, according to the Direcção Regional de Turismo dos Açores (Azores Tourism Board). The industry is mainly focused on three Islands: São Miguel (which attracts approximately 40% of the Azores' whale watchers), Faial and Pico (between 20-25% each). Trips depart from the localities of Ponta Delgada, Horta and Lajes de Pico, respectively. Trips from the islands of Terceira and São Jorge have also been initiated in recent years.

Most trips run for a couple of hours out from the coastal ports and return, using high speed RIBs (rubber inflatable boats) for up to 12 passengers. On average, the trips cost around $70 for adults and $49 for children. Out of 17 local operators, 13 offer dedicated large cetacean and dolphin watching tours. The opportunistic tours complement the trips with diving and nature cruises, visiting several of the closest islands and with longer tours (half and full-day trips). One international organisation and one local operator run multiple-day tours (of 8-15 days in duration), mostly for tourists from Germany and the UK.

Both smaller and larger cetaceans are sighted (approximately 45% large cetaceans, 55% dolphins). The Azores Islands have the privilege of hosting approximately 30% of the world's cetacean species, a fact promoted by the local whale and dolphin watching operators.

Main species:	Large cetaceans: *blue whale, fin whale, sei whale, sperm whale* Small cetaceans: *Atlantic spotted dolphin, bottlenose dolphin, short-beaked common dolphin, false killer whale, orca, short-finned pilot whale, Risso's dolphin, striped dolphin*
Tourists:	
International	78%
Domestic	22%
Types of tours:	Boat-based, short trips, full-day trips, multiple-day trip, dedicated, opportunistic.
Average adult ticket price:	$70
Estimated employment numbers:	127
Main whale watch season:	April to October

Acknowledgements:
Claudia Oliveira of Instituto do Mar/Dept. Oceanografia e Pescas (University of Azores), Sandra Dart of Direcção Regional de Turismo (Azores Tourism Board) and nine operators

Local Case Study: Azores

The Portuguese archipelago of Azores sits isolated in the mid Atlantic Ocean, nearly halfway between Canada and Portugal about 1500km (1200mi) from Lisbon. It is made up of nine volcanic islands as well as islets divided into three groups (eastern, central and western) across approximately 600km (370mi). Due to this mid ocean location, the island chain has great and plentiful access to many cetacean species, including the largest of them all, the blue, fin, sei and sperm whales.

Whale watching as an industry has seen recent strong growth in tourist numbers mainly on the islands of Pico and Faial (in the central group), and São Miguel (in the western group). During the most recent years, the industry has also begun to expand to other islands across the central group including Terceira and Graciosa Islands.

However, prior to whale watching, the islands were an equally appropriate location for whaling. The commercial whaling industry ceased operation in 1984 due more to unfavourable market conditions than any sense of conservation outcomes (Santos et al., 1995; Gonçalves & Prieto, 2003).

Experimental whale watching first started in 1989 with only one tour operator based in Lajes do Pico, Pico Island continuing at this level until 1993. Since then, the offering of whale watching trips has constantly grown not only in terms of number of whale watching operators, but at an even higher rate in the growth of boats. Operators in 2008 were estimated at 19, up from 6 in 1998.

The distinct geographic coastal condition in Azores (steep topography, proximity to the mid-Atlantic Ridge, Santos et al., 1995; Gonçalves et al., 1996), favors the relatively easy spotting of cetaceans, even from land-based points. The use of land-based lookouts to find cetaceans to pass on this information to the whale watching boats is a re-adaptation of the ancient whale hunting techniques used in the archipelago. According to Gonçalves and Prieto, 2003, and, Neves-Graça, 2004, lookouts scan the sea with powerful binoculars and provide information (species, direction and distance to the target) to the whale watching operators by radio. Some of the very same lookouts that were used for whaling in days gone have until recently been used to assist whale watching companies find whales.

Until 1999, whale watching was conducted on a seasonal basis, beginning in March/May and extending until October. Since 2000, the São Miguel island enterprises extended the activity period to all year round. In the central Islands (Pico and Faial) the activity is still highly seasonal. Naturally, the number of job positions increased along with the enterprise development, extended season and increment in the number of clients. In 2004, there were 85 job positions and an estimated 127 people employed in the whale watching industry in 2008. Most of these were skippers, mariners and lookouts. Although some employees work year round, since 1996, the average duration of whale watching jobs in the Azores tends to be six months of the year (Oliveira et al., 2005).

It has recently been estimated that 12.5% of tourists to the islands are visiting with the explicit intention to watch whales (SREA, 2007a), and with the strong local community support for the industry (SREA, 2007b), it appears that whale watching will continue growing and stimulating the generation of local employment and flow on economic benefits to the islands.

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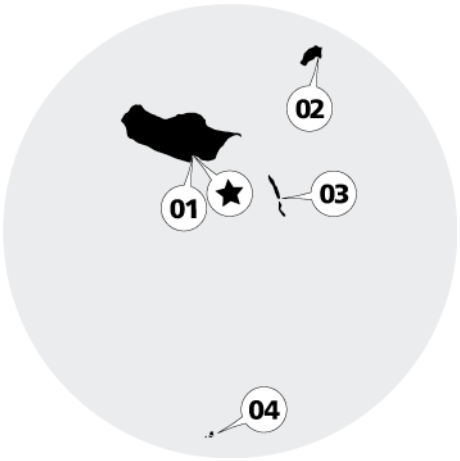
Portugal - Madeira Archipelago

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	59,731	~72.9%	9	$2,069,325	$5,407,664	$7,476,988

★ Capital City: Funchal
Whale Watch Locations:
01: Funchal
02: Porto Santo Island
03: Desertas Island
04: Selvagens Island



Although it's not a destination known around the world for its whale watching potential, the Madeira Archipelago's whale watching industry has grown significantly since 1998 at a rate of 73% per annum (when calculated from a 1998 baseline of 250 whale watchers). As per data collected in 2008, a total of 59,730 whale watchers were found to have undertaken trips.

This figure is consistent with data presented by the Museu da Baleia (Whale Museum) and the Institute of Oceanography (Faculty of Sciences of University of Lisbon), who reported approximately 58,000 whale watchers in 2007 – one of the operators we surveyed suggested that growth between 2007 and 2008 could be as high as 27%.

The activity is focused around Madeira Archipelago, with Funchal as departing port. Tours that offer nature cruises in parallel to whale watching run from four hours to full-day trips, visiting the surrounding islands of Porto Santo, Desertas and Selvagens. Out of nine companies, only two are dedicated whale watching operators. Another two companies offer some dedicated cetacean watching trips within varied other activities, but other operators tend to see whales as part of other cruises in an opportunistic manner. The

boat capacity for operators is on average 36 passengers, with trips costing around $45 per adult and $24 per child. Tours can be arranged for trips between two hours and a half-day cruise.

Both smaller and larger cetaceans are sighted – within the Madeira Archipelago, around 21 cetacean species can be sighted, some frequently and some occasionally.

Main species:	Large cetaceans: *Bryde's whale, fin whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, false killer whale, Risso's dolphin, short-finned pilot whale, pantropical spotted dolphin, striped dolphin*
Tourists:	
International	80%
Domestic	20%
Types of tours:	Boat-based, half-day trips, full-day trips, dedicated, opportunistic.
Average adult ticket price:	$45
Estimated employment numbers:	44
Main whale watch season:	February to August

Acknowledgements:
Claudia Gomes of Lobosonda**,** Pedro of Rota dos Cetaceos and Ana Dinis of Madeira Whale Museum

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Portugal - Mainland

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1998	1,380	N/A	1	$31,000	$56,000	$87,000
2008	58,407	45.4%	11	$1,815,602	$4,322,497	$6,138,099

★ Capital City: Lisbon
Whale Watch Locations:
01: Lagos
02: Vilamoura
03: Portimao
04: Setúbal

The Portuguese mainland is currently demonstrating its potential for dolphin watching, as predicted in the 2001 IFAW report by Erich Hoyt. From a slow start in 1998, when the country's mainland had only 1,380 whale watchers, it is estimated that over 58,000 whale watchers undertook trips in 2008. Tour operators offer dolphin watching exclusively, as no large cetaceans are easily observed in the main industry areas of Sado Estuary and Algarve coast.

Approximately half of the mainland's dolphin watchers participate in tours offered by opportunistic dolphin watching operators, which combine whale watching with seal, turtle and/or nature watching cruises. This represents a clear difference compared to the type of whale and dolphin watching practiced in the other two Portuguese territories analysed in this report, the Azores and Madeira Islands, which offer mainly dedicated whale and dolphin tours.

The main whale watching activity is focused on Setúbal, in the Lisbon region, and along the south coast in the Algarve, with the towns of Lagos, Vilamoura and Portimao as departure points. The Algarve region is a major holiday location for Portuguese nationals and other Europeans, with budget hotel and flight packages almost all year round. This may go some way to explaining the explosive numbers of dolphin watchers reported by the surveys, although approximately 60% of dolphin watchers are Portuguese nationals and 40% internationals.

In general, trips last from three to four hours (a half-day trip), and follow return routes along the Algarve. Most boats used for these tours have a high passenger capacity, on average 47 places. The trips cost around $41 for an adult and $25 for a child.

As mentioned above, only dolphins are spotted in Portuguese mainland – bottlenose dolphins reside in the Sado Estuary, while short-beaked common, bottlenose, striped and pantropical spotted dolphins are seen in the Algarve.

Main species:	Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, pantropical spotted dolphin, striped dolphin*
Tourists:	
International	40%
Domestic	60%
Types of tours:	Boat-based, short trips, half-day trips, dedicated, opportunistic.
Average adult ticket price:	$41
Estimated employment numbers:	71
Main whale watch season:	June to September

Acknowledgements:
Ivo Martins of Algarbe Seafaris, Maria João Fonseca of Vertigem Azul, Rob van der Linden of Algarve Dolphins.

Slovenia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	21	N/A	1	$8,866	$4,431	$13,297

★ Capital City: Ljubljana
Whale Watch Locations:
01: Lucija

Whale watching emerged in 2002 in Slovenia as part of the activities of a local marine mammal research and conservation NGO. Therefore, programmes (land- and sea-based) have exclusively scientific purposes and the number of dedicated dolphin watchers remains low.

Dolphin research camps are organised from Lucija (Portorož), conducting research along the Slovenian Adriatic coast. From July to September, the programme is offered for up to six participants over ten days, costing approximately $420 per person. No commercial cetacean watching operating purely for tourism is in place.

A constant population of bottlenose dolphins has been documented in this area of the Slovenian waters (together with the neighbouring Croatian and Italian waters). Other species are rarely sighted.

Main species:	Small cetaceans: *bottlenose dolphin*
Tourists:	
International	50%
Domestic	50%
Types of tours:	Boat-based, land-based, multiple-day, dedicated research trip
Average adult ticket price:	$420 (10 day trip)
Estimated employment numbers:	1
Main whale watch season:	July to September

Acknowledgements:
Tilen Genov of Morigenos

Spain

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	1,000	~58.7%	N/A	$29,000	$72,000	$101,000
1998	25,000	123%	14	$550,000	$1,375,000	$1,925,000
2008	74,629	11.6%	16	$3,207,708	$4,947,738	$8,155,446

★ Capital City: Madrid
Whale Watch Locations:
01: Tarifa
02: Estépona
03: Bilbao

Whale and dolphin watching in mainland Spain does not represent an important attraction within the huge number of tourists visiting the country (60 million in 2007). However, the growth in the number of whale watchers – from 25,000 in 1998 to approximately 75,000 in 2008 (less conservative estimations may even triple these numbers) with a growth rate of 11.6% per year – is nevertheless notable.

The activity is concentrated in southern Spain, focusing on cetaceans in the Strait of Gibraltar and the Costa del Sol. Tarifa, the main departure port, accounts for around 75% of total whale watchers; Estépona and Benalmádena in Costa del Sol another 20%. Six companies offer cetacean watching trips in the Bay of Biscay (accounting for the remaining 5% of whale watchers). Five of these are international companies operating between Portsmouth, England, and Santander-Bilbao, northern Spain.

Out of 16 tour operators, ten are offering dedicated whale watching trips: four in Tarifa, five multiple-day cruises in the Bay of Biscay, and one in the Costa del Sol (although this company only offers whale watching as part of a variety of different cruise trips).

Clear differences can be identified when comparing whale watching in the north and south of Spain. In the south, tours from Tarifa and the Costa del Sol run for short durations (90 minutes to three hours) with an average cost of $45 per adult and $31 per child. By comparison, trips offered to observe cetaceans in the Bay of Biscay are almost exclusively multiple-day tours, lasting an average of four days. Half of the multiple-day tours are in effect opportunistic whale watching, complemented by bird and nature watching.

Four dolphin species are spotted in southern waters: the short-beaked common dolphin, striped dolphin, bottlenose dolphin and Risso's dolphin; as well as orcas in July and August. At least 16 cetacean species are recorded in the Bay of Biscay and various large cetaceans are regularly sighted including various species of beaked whales.

Main species:	Large cetaceans: *fin whale, sperm whale, minke whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, harbour porpoise, orca, long-finned pilot whale, Risso's dolphin, striped dolphin, Cuvier's beaked whale*
Tourists:	
International	57%
Domestic	43%
Types of tours:	Boat-based, short trips (1.5 hrs, 2 hrs, 3 hrs), half-day trips, full-day charters, multiple-day cruises, dedicated, opportunistic.
Average adult ticket price:	$45
Estimated employment numbers:	42
Main whale watch season:	peak months July to September

Acknowledgements:
Katharina Heyer of Fundación firmm, Lourdes Isassa López of Whale Watch España, and Andre Anciaes of Turmares Tarifa SL.

United Kingdom

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	400	N/A	1	$43,000	287,000	$330,000
1994	15,000	234.7%	3	$1,380,000	9,120,000	$10,500,000
1998	121,125	68.6%	14	$1,884,000	6,347,000	$8,231,000
2008	266,450	8%	76	$5,984,476	$15,454,527	$21,439,003

★ Capital City: London

Across the entire UK, whale watching has seen a very strong growth rate in the last decade, averaging 8% per year. There has been a surge in operator numbers, and subsequent to the growth, total expenditure has increased to $21 million.

For this report, the United Kingdom has been separated into the three countries of England, Scotland and Wales, as each has a distinct and large whale watching industry of its own. Beyong some land-based dolphin watching (estimated here as only minimal), formal whale watching was not identified in Northern Ireland.

England

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	5,125	~17%	3	$70,000	$393,000	$463,000
2008	9,160	6%	8	$193,822	$395,254	$589,076

★ Capital City: London
Whale Watch Locations:
01: Penzance Harbour
02: Fowey
03: Feock
04: Newquay
05: Jersey

Whale watching is not one of the main tourist attractions on the English coast, but eight tour operators are involved in the activity, all of them offering opportunistic cetacean sightings. These are promoted as a complement to nature, culture and marine wildlife cruises. In total, an estimate of approximately 9,000 cetacean (and sea-life) watchers were counted in 2008, equating to an annual growth of 6% per year since 1998, when 5,125 whale watchers were recorded. As noted by one of the local organisations we surveyed, lots of the tourists who visit England don't realise that there are cetaceans around the English coast.

Most whale watching activity occurs around southwest Cornwall, focusing on Penzance Harbour as a departure port. Whale watching also occurs from the localities of Feock, Albert Pier, Fowey, Newquay, East Looe Quay and Falmouth. In Jersey, two operators promote opportunistic cetacean watching.

Tours run for between 90 minutes and two-and-a-half hours, with and average boat capacity of 11 passengers. The average cost of a trip is $51 per adult and $31 per child. According to local cetacean organisations, whales and dolphins can be sighted all year around. However, tours are offered between May and November, and concentrated primarily between June and September due to summer season visitors.

The most common species encountered are harbour porpoises, bottlenose and less often short-beaked common dolphin. More unusual species may be encountered, such as Risso's dolphins and long-finned pilot whales, and even large cetaceans such as fin and minke whales.

Main species:	Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, harbour porpoise*
Tourists:	
International	40%
Domestic	60%
Types of tours:	Boat-based, short trips (1.5 to 2.5 hours), opportunistic.
Average adult ticket price:	$51
Estimated employment numbers:	10
Main whale watch season:	April to October

Acknowledgements:
Ben Wallbridge of Durlson Country Park, Dave Ball of Silver Dolphin Centre and Colin Speedie of Wise Scheme.

Scotland

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	400	N/A	1	$43,000	$287,000	$330,000
1994	15,000	235%	3	$1,380,000	$9,120,000	$10,500,000
1998	99,000	60%	8	$1,622,000	$6,347,000	$7,046,000
2008	223,941	8.5%	51	$4,927,388	$13,315,814	$18,243,202

★ Capital City: Edinburgh
Whale Watch Locations:
01: Inverness
02: John O'Groats
03: Oban
04: Gairloch
05: Chanonry Point, Moray Firth

Scotland, together with Iceland, possesses one of the most well established whale watching industries in Europe. Since the last census in 1998, the number of tourists has almost doubled, equating to an annual average growth of 8.5% over the last 10 years. However, it has to be mentioned that most operators offer marine cruises or 'sea-faris', where whale and dolphin sighting is a complementary attraction together with bird, seal and nature watching activities, rather than dedicated whale watching tours. Out of 46 sea-based whale watching operators, only 12 are classified as dedicated running cruises focused purely on cetaceans. Five operators in Scotland are land-based.

The industry is focused on the west coast of Scotland, mainly in the Hebrides Islands, using Oban as departure point to sail around the Isle of Mull, Isle of Iona, Rhum, Eigg, Treshnish Isles and Staffa; and Gairloch and Kyle of Lochalsh to the Isle of Skye and Isle of Lewis. The west coast accounts for approximately 55-60% of total visitors. In the north, Moray Firth and the Orkney Islands account for approximately 35-40% of the whale watching activities, using Inverness and John O'Groats as departing points. These estimates come from local operator data and local tourism organisations.

Land-based cetacean watching is heavily focused on Chanonry Point, Moray Firth. According to local estimates, these areas can attract more than 20,000 dedicated participants a year. The Isle of Mull and North Berwick also represent an important focus of attraction for land-based dolphin watchers, as well as having the added attraction of an occasional minke whale sighting.

On average, whale watching trips run for approximately three to four hours out from the coastal ports. The average adult ticket price per trip is $43. Six operators offer multiple-day whale/dolphin watch trips (four day, six day or 12 day trips), complemented with fishing, diving, nature and cultural cruises. Operators running these extended trips are considered opportunistic operators in this report.

The species sighted are mainly small cetaceans – the harbour porpoise and bottlenose dolphin. There is a regular presence of basking sharks on the west coast, but these are not included in this study as they are not cetacean species. Minke whales are also regularly seen. Short-beaked common dolphins and Risso's dolphins are also occasionally seen.

Whale tourism is an important activity for Oban on the mainland, along with Tobermory, Fionnphort and Dervaig in Isle de Mull and Inverness and Cromarty close to the Moray Firth.

The main whale watching season runs from April to October. However, some land-based operators offer tours all year round.

Main species:	Large cetaceans: *minke whale* Small cetaceans: *bottlenose dolphin, harbour porpoise*
Tourists:	
International	30%
Domestic	70%
Types of tours:	Boat-based, land-based, dedicated, opportunistic, short trips, multiple-day trips
Average adult ticket price:	$43
Estimated employment numbers:	132
Main whale watch season:	April to October

Acknowledgements:
Andrew Jackson of Ardnamurchan Charters, Natalie Ward of Hebridean Whale and Dolphin Trust, David Woodhouse of Isle of Mull Wildlife Expeditions, Christopher Swann of Oceanus Ltd, Nigel W Smith of Seaprobe Atlantis, Sealife Adventures, Richard Fairbairns of Sealife Surveys, Murray Macleod of Sea Trek, Lorna Bruce of Visitscotland, Caroline Warburton of Wild Scotland, Chris Lindsay of Corryvreckan Cruising Ltd, Lynda Dalgleish of Scottish Seabird Centre, Deborah Benham of Dolphin Space Programme and Whale and Dolphin Conservation Society, Bill Taylor and Colin Speedie from the Wise Scheme.

Wales

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	17,000	N/A	3	192,000	530,000	722,000
2008	33,349	7%	17	$863,266	$1,743,458	$2,606,724

★ Capital City: Cardiff
Whale Watch Locations:
01: Cardigan Bay
02: New Quay
03: Milford Haven
04: St. David's
05: Pwllheli

Cetacean sightings in Wales are mainly located around Cardigan Bay, on the west coast, with approximately 50% of the total sea-based whale watchers; departure points are located in Cardigan, New Quay and Aberystwyth. The Pembrokeshire region (southwest Wales) attracts 30% of cetacean watchers in Wales, focused on the localities of Milford Haven, Dale and St. David's, visiting Ramsey Island and Island of Grassholm. The remaining 20% of visitors are in Gwynedd (northwest Wales), based in Ty Newydd and Pwllheli, from where cruises to northern Cardigan Bay and the Irish Sea are launched. In general, the industry relies more on dolphin spotting, which enjoys 90% success rates, whereas large cetacean sightings meet with only 30% success rates (based on survey results).

A total of 33,350 whale and dolphin watchers are estimated for 2008, representing an increase of 7% per year with respect to 1998. Approximately 1,000 of these are land-based dolphin watchers, spotting from Gwbert, Cardigan Bay, where a Farm Park runs from March to October. Nowadays, most trips include in their offers the option of cetacean watching, but as a complement to nature and wildlife cruises. Only four operators offer dedicated cetacean watching tours.

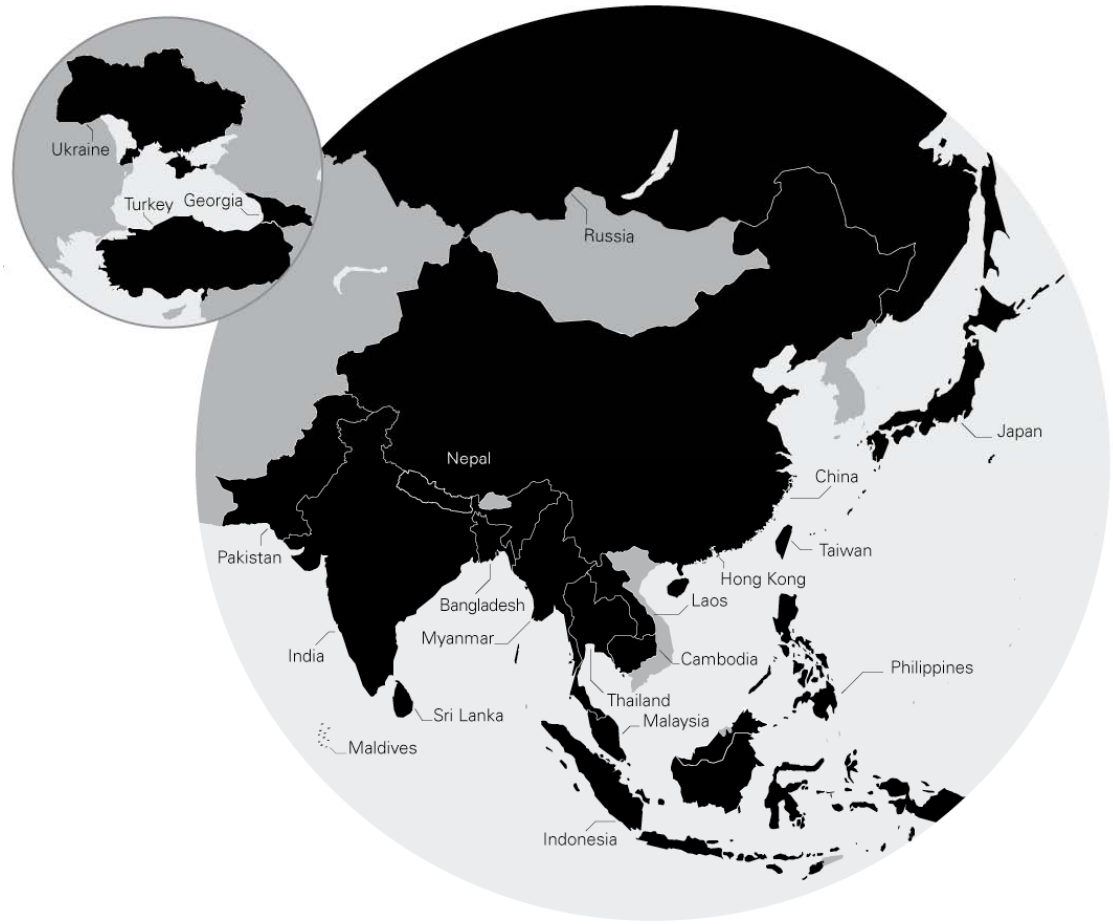
The differences in cost and length of sea-based trips depend on the location to spot. In Cardigan Bay tours run for between one and two hours and cost an average $32 per adult (only dolphins are spotted and closer to the coast). In Pembrokeshire longer cruises run between two-and-a-half to three hours and cost on average $81 per adult (on these longer trips, both whales and dolphin are spotted). Boat capacity is small for all companies, with an average of only up to 13 passengers.

In Cardigan Bay, bottlenose dolphins and harbour porpoises are sighted most commonly. Offshore trips from Pembrokeshire have the chance to see short-beaked common, Atlantic white-sided, bottlenose and Risso's dolphins most of the year, but peak season is July to September. June, July and September present a possibility to see orca, as well as July through to September for minke whales. Fin whales and long-finned pilot whales have also been seen, according to local operators, but less frequently.

Main species:	Large cetaceans: *minke whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, harbour porpoise,, Risso's dolphin dolphin*
Tourists:	
International	10%
Domestic	90%
Types of tours:	Boat-based (1.5 to 3 hrs), land-based, dedicated, opportunistic
Average adult ticket price:	$47
Estimated employment numbers:	18
Main whale watch season:	July to September

Acknowledgements:
Sarah Perry of Cardigan Bay Marine Wildlife Centre, Winston Evans of New Quay Boat Trips, John Price & Leuan Jenkins of Voyages of Discovery and Colin Speedie of Wise Scheme.

Asia



Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	10,992	N/A	2	$371,000	$4,377,000	$4,748,000
1994	73,192	88.1%	12	$3,887,000	$20,714,000	$24,601,000
1998	220,465	31.7%	13	$7,735,000	$36,969,000	$44,704,000
2008	1,055,781	17.2%	20	$21,573,315	$44,365,015	$65,938,330

Asia has seen a remarkable growth in whale and dolphin watching over the last ten years. Seven countries have begun whale watching in this time, and the number of people whale watching has increased five-fold, from approximately 220,000 to over 1 million. Much of this growth has come from China, Taiwan, India, Japan, Cambodia and Laos.

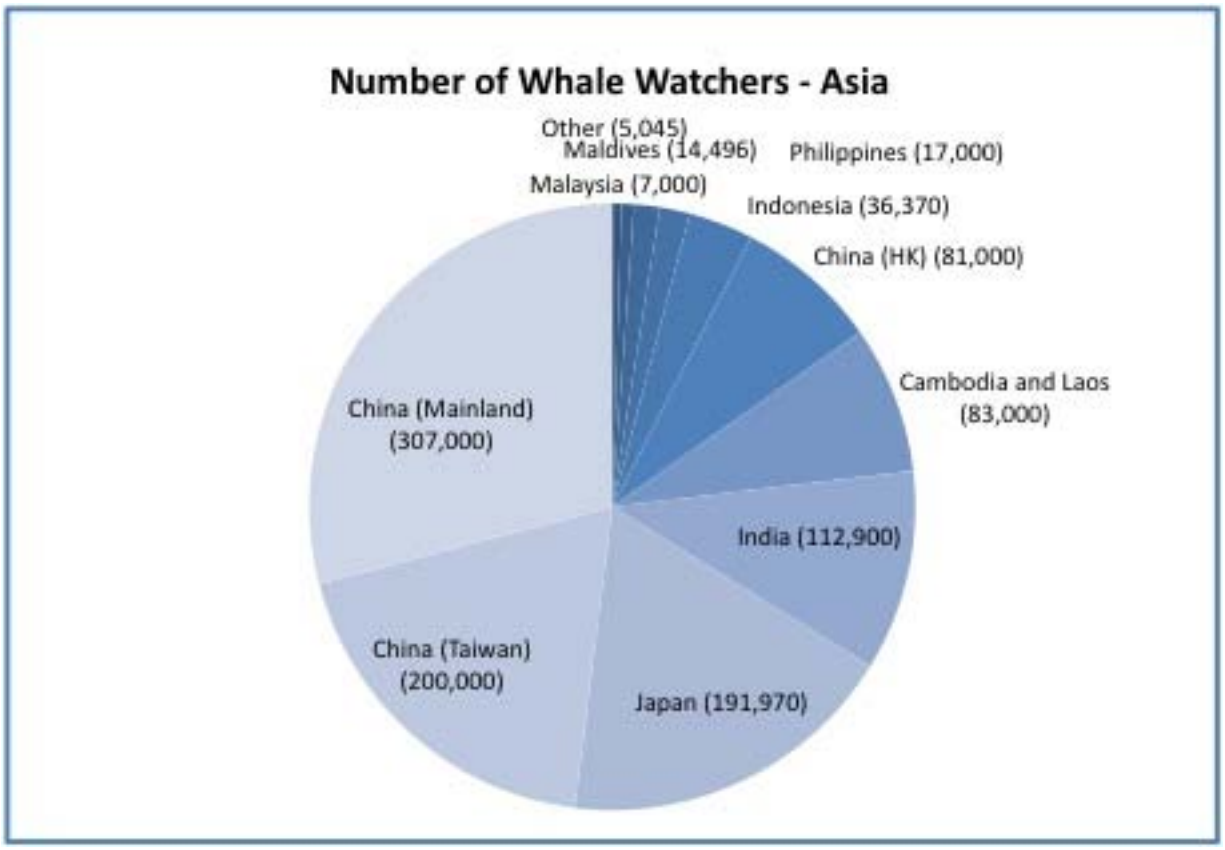
Cetacean watching in Asia takes place in an amazing variety of locations, from the Russian Arctic to Indonesia's tropical beaches, from the middle of the Indian Ocean to landlocked countries Nepal and Laos, from remote islands to the middle of major metropolises like Hong Kong. While many cetacean watching companies in Asia have traditionally targeted foreign tourists – for example in Goa, Bali and the Maldives – Asia's economic boom has seen a growth in local whale watchers. Indeed, the largest growth in whale watcher numbers has come from industries catering to local markets – particularly the booming middle classes of China, Taiwan and India.

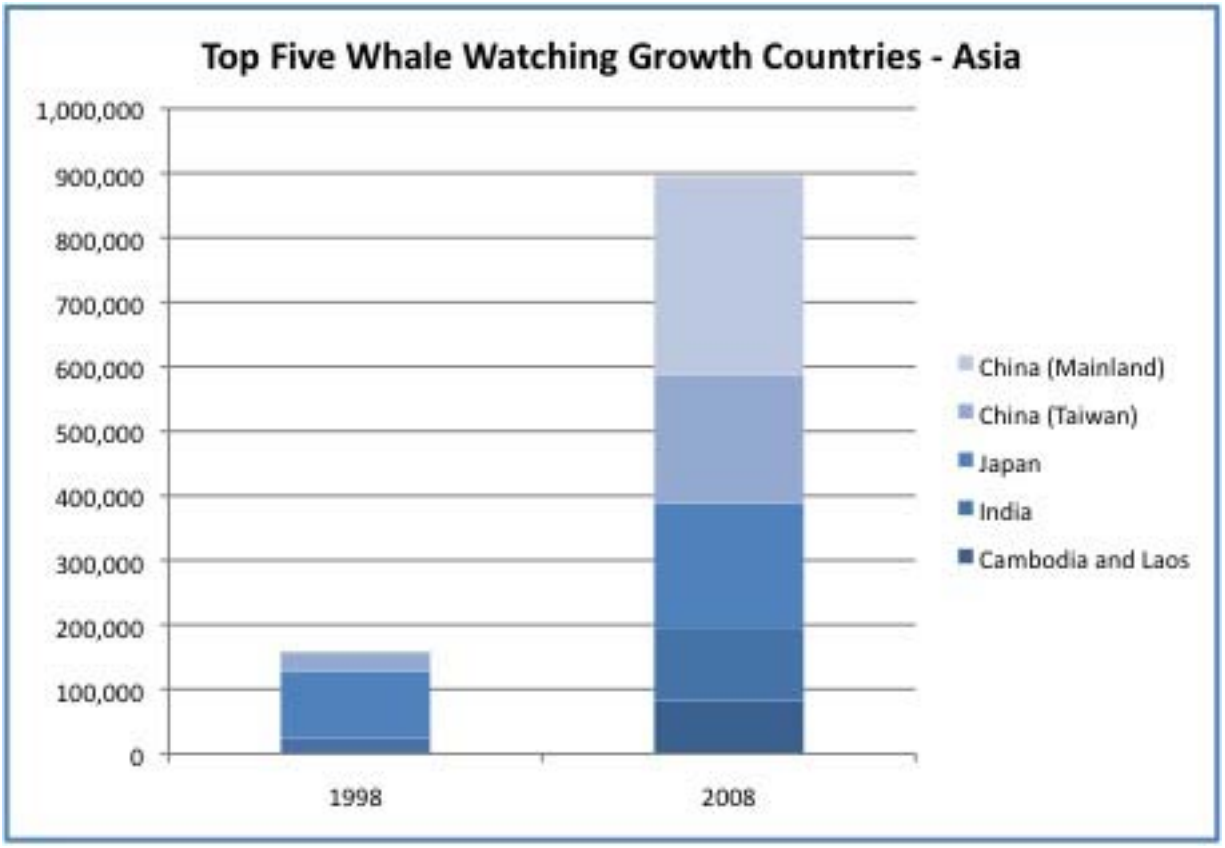
Long-standing and comparatively high prices in Japan mean that it is still the largest industry in Asia by total revenue generated.

Summary of country results

Country	Number of whale watchers		Growth between 1998 and 2008
	1998	2008	AAGR
Bangladesh	None	25	N/A
Cambodia and Laos	None	83,000	78.7%
China - Hong Kong SAR	4,500	81,000	33.5%
China - Mainland	None	307,000	103.7%
China - Taiwan	30,000	200,000	20.9%
Georgia, Ukraine – Black Sea	Minimal	Minimal	N/A
India	30,000	112,900	16.3%
Indonesia	41,000	36,370	-1.2%
Japan	102,785	191,970	6.4%
Malaysia	None	7,000	39.5%
Maldives	30	14,496	85.5%
Myanmar	None	40	N/A
Nepal	150	125	-1.8%
Pakistan	None	250	0%
Philippines	12,000	17,000	3.5%
Russia	Minimal	1,285	17.8%
Sri Lanka	None	620	9.5%
Thailand	Minimal	2,700	26.9%
Turkey	Minimal	Minimal	N/A
REGIONAL TOTAL	220,465	1,055,781	17.2%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.


Number of Whale Watchers - Asia
Other (5,045)
Maldives (14,496)
Philippines (17,000)
Malaysia (7,000)
Indonesia (36,370)
China (HK) (81,000)
Cambodia and Laos (83,000)
China (Mainland) (307,000)
India (112,900)
China (Taiwan) (200,000)
Japan (191,970)


Top Five Whale Watching Growth Countries - Asia
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
1998
2008
China (Mainland)
China (Taiwan)
Japan
India
Cambodia and Laos

Bangladesh

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	25	N/A	1	$1,375	$575	$1,950

★ Capital City: Dhaka
Whale Watch Locations:
01: Sundarban mangrove forests

Bangladesh has one nature tour operator that offers cetacean watching opportunities. Most of these cruises are around the Sundarban mangrove forests, where opportunistic sightings of Ganges River dolphins are common, along with occasional sightings of Irrawaddy dolphins and finless porpoises. Opportunistic watching of dolphins on these tours has not been quantified here; the above numbers refer to dedicated whale watching trips that the operator sometimes organises in conjunction with the Bangladesh Cetacean Diversity Project. The trips go into the Bay of Bengal, to the Swatch-of-No-Ground, a deep submarine canyon where several cetacean species can be found: Indo-Pacific bottlenose dolphins, pantropical spotted dolphins, spinner dolphins and Bryde's whales.

Cetacean watching is not yet an important factor in attracting tourists to Bangladesh. Cetacean watching mostly opportunistic and only a small portion of expenditure can be considered attributable to cetaceans. The operators may offer more dedicated trips in the future.

Main species:	Large cetaceans: *Bryde's whale* Small cetaceans: *finless porpoise, Ganges River dolphin, Irrawaddy dolphin, Indo-Pacific humpback dolphin*
Tourists:	
International	40%
Domestic	60%
Types of tours:	Around one dedicated trip per year by boat into the Bay of Bengal. Regular tours of Sundarbans forest by boat offer opportunistic dolphin watching.
Average adult ticket price:	Varies with tour
Estimated employment numbers:	1
Main whale watch season:	December to February

Acknowledgements:
Thanks to Elisabeth and Rubaiyat Mansur at Bangladesh Cetacean Diversity Project.

Cambodia and Laos

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	83,000	~78.7%	40	$651,000	$3,520,000	$4,171,000

★ Capital City: Phnom Penh (Cambodia); Vientiane (Laos)
Whale Watch Locations:
01: Kampi, Kratie province, Cambodia
02: Si Phan Don in Laos

The border area of Laos and Cambodia on the Mekong River is home to Irrawaddy dolphins and a growing dolphin watching industry. The dolphins live in a 190km long stretch of the Mekong located in the northeast of Cambodia and the southernmost part of Laos. Local fishermen now take tourists for short boat rides to visit the dolphins from Si Phan Don in Laos and Kratie in Cambodia.

In Kampi, Kratie province, Cambodia, around 20 families have direct involvement in dolphin watching by providing boat services. According to the chairman of the Cambodian Dolphin Commission, another 30 households make and sell handicrafts to local and foreign tourists. The rest of the community is involved in other tourism services such as selling food and drinks, accommodation and transport. All families in this community benefit from dolphin watching and are keen to participate in dolphin conservation.

The number of tourists watching dolphins in Kratie has increased steadily since 2002 when operations began. The Cambodian Dolphin Commission has been tracking numbers of tourists since 2006:

	Domestic tourists	International tourists	Total
2006	60,000	10,000	70,000
2007	65,000	12,000	77,000
2008	70,000	13,000	83,000

The money that tourists spend in this area makes a significant contribution to local people in a poor, rural area of a developing country. The dolphins are a valuable resource, as they are the main reason that tourists visit Kratie, according to WWF Cambodia's Richard Zanre.

Typically, foreign tourists spend $15-20 for a round trip bus fare, including one meal, and $5 -15 for a night's accommodation. For transport within the town and to dolphin watching sites, they spend $5. A further $5 -10 is usually spent on dinner and drinks. Total expense for two days dolphin watching in Kratie is about $30-50.

Cambodian tourists spend about the same amount as foreigners – sometimes more, as they buy more souvenirs than foreign backpackers. Dolphin carvings are particularly popular among Cambodian tourists, according to the Cambodian Dolphin Commission.

From the Laos side of the river, fishermen and boat owners run informal dolphin watching trips, mainly for foreign tourists. Small boats are hired for around $5 per person. The trips often enter Cambodian waters and stop at drinks stands in Cambodia from where the dolphins can be seen. The novelty of briefly entering a different country adds to the appeal of the trips. Around 10,000 tourists per year go dolphin watching from the Lao side, based on 2005 estimates by WWF. While the dolphins are a well-known attraction in Southern Laos, they are not the primary reason for most tourists visiting the area; most go to relax in the Four Thousand Islands area and see the famous Kone Falls.

Main species:	Small cetaceans: *Irrawaddy dolphin*
Tourists:	
International	25%
Domestic	75%
Land-based whale watchers:	Various riparian areas around Sipandon and Kratie
Types of tours:	Small wooden boats are hired with local drivers/guides to take visitors onto the Mekong for trips typically lasting 1-2 hours.
Average adult ticket price:	$8
Estimated employment numbers:	40
Main whale watch season:	Year-round, but peak season is from November to April

Acknowledgements:
Mark Bezuijen (WWF Laos), Richard Zanre (WWF Cambodia), Touch Seang Tana (Cambodian Dolphin Commission) and Mr. Ie Mongden at Kratie (provincial tourism department).

References:
Bezuijen, M, Zanre, R, and Goichot, M 2007, 'The Don Sahong Dam and the Irrawaddy Dolphin', WWF, Vientiane.

China

China (Mainland)

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	307,000	~103.7%	9	$4,028,000	$9,222,120	$13,250,120

★ Capital City: Beijing
Whale Watch Locations:
01: Sanniang Bay in Guangxi Autonomous Region

Cetacean watching in mainland China began in about 2003 and is centred on Sanniang Bay in Guangxi Autonomous Region. The local village-based company and several independent boat operators have tapped into China's booming domestic tourism market to make it possibly the most popular cetacean watching location in Asia.

Trips to see the Indo-Pacific humpback dolphin (locally referred to as the Chinese white dolphin) operate year round, although May to October is the busy period. Dolphin watchers are taken out in one of 28 nine-passenger speedboats, or 11 15-passenger wooden boats, for about two hours. Tickets cost approximately $13, including the entry fee to the tourist area. The operators estimate around half of all guests come independently, while the other half are in tour groups, a large part of China's domestic tourism market. Very few international visitors go to Sanniang Bay, but locals hope this will develop in future.

Dolphin watching is extremely important to the local economy, with researchers suggesting that 80% of the villagers benefit in some way from the new industry. Tourism has been a big boost for the economy of a small, rural area.

No formal studies of dolphin watching at Sanniang Bay have been completed yet and reliable statistics on the industry are difficult to obtain. We hope that more research will be done on this exciting new dolphin watching area.

Main species:	Small cetaceans: *Indo-Pacific humpback dolphin (known locally as the Chinese white dolphin)*
Tourists:	
International	0%
Domestic	100%
Types of tours:	Short boat-based cruises
Average adult ticket price:	$13
Estimated employment numbers:	31
Main whale watch season:	May to October

Acknowledgements:
Thanks to Chen Mei of the Beijing University Panda Conservation Research Centre, Yinzhou Bay White Dolphin Research Base. Thanks also to various staff at Sanniang Bay Travel Management Company Boat department. Special thanks to Chen Xin for her translation, research assistance and patience.

China - Hong Kong SAR

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	1,000	N/A	1	$34,000	$85,000	$119,000
1998	4,500	45.6%	3-4	$217,000	$542,000	$759,000
2004	135,000	76.3%	30	$1,680,000	$830,000	$2,510,000
2008	81,000	-12.0%[26]	24	$1,008,000	$498,000	$1,506,000

★ Capital City: Hong Kong
Whale Watch Locations:
01: Lantau Island

Dolphin watching in Hong Kong has boomed since tours began in 1994. The distinctive pink dolphins swimming in one of the busiest and most spectacular harbours in the world have attracted hundreds of thousands of dolphin watchers. Fears that the dolphins may become extinct in Hong Kong waters have abated and regular sightings sustain a large industry. However, the number of unlicensed operators has local conservation organisations concerned about the sustainability of the industry.

Only one operator is certified as an eco-tourism operator; this operator runs dedicated dolphin watching trips three times per week. Other operators are tour and cruise companies that include dolphin watching in their itineraries. Eight to ten small speedboats operate casually, taking visitors to see dolphins near a small fishing village on the west side of Lantau Island. Prices vary from around $45 for specialised dolphin watching trips to $5 for short trips off the smaller islands.

Trips are all focused on Indo-Pacific humpback dolphins, known locally as Chinese white dolphins. The dolphins are coloured gray when born, but gradually become pink in colour due to heat exchange in blood vessels for thermoregulation.

Dolphin watching activity peaked around 2004, when a comprehensive study was carried out (hence data is included in table above for 2004), and has since declined by perhaps 40%. Researchers are unsure why, but suggest that in 2004 Hong Kong residents were less likely to travel abroad following the SARS outbreak. During this time Hong Kongers were still keen to get some fresh air away from the city and the number of dolphin watching trips and operators escalated accordingly. In recent years, however, locals are again travelling abroad, while overseas dolphin watchers have not been as numerous as before. Local conservationists are concerned that as higher quality tours have declined, the only growth in Hong Kong dolphin watching comes from speedboats off Lantau, which can disturb the dolphins. The low indirect

[26] AAGR for period from 2004 to 2008.

expenditure figure is largely explained by the high proportion of domestic tourists as opposed to international tourists, who have a lower average daily expenditure level.

Main species:	Small cetaceans: *Indo-Pacific humpback dolphin (known locally as the Chinese white dolphin)*
Tourists:	
International	30%
Domestic	70%
Types of tours:	Boat-based, with several types of operator – dedicated dolphin watching operators, tour operators that include dolphin watching, and small opportunistic boats.
Average adult ticket price:	$45
Estimated employment numbers:	35
Main whale watch season:	Year-round

Acknowledgements:
Thanks to Samuel Hung at Hong Kong Dolphin Conservation Society. Much of this information is based on his paper *Development of Dolphin watching Activities in Hong Kong SAR, People's Republic of China,* presented at the 10th Symposium on Cetacean Ecology & Conservation - Toward A Sustainable Future of Whale- Watching, Taiwan, 8-13 September 2004. Thanks also to Bennie To, Chris Parsons and the main dolphin watch operator.

China - Taiwan

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	30,000	N/A	13	$1,223,000	$3,057,000	$4,280,000
2008	200,000	20.9%	23	$5,387,275	$10,800,000	$16,187,275

★ Capital City: Taipei
Whale Watch Locations:
01: Yilan
02: Hualien
03: Taitung

Taiwan has a large cetacean watching industry, which has grown considerably since 1998. The industry is focused on three counties on the east coast: Yilan, Hualien and Taitung. These areas are host to around 125,000, 70,000 and 5,000 whale watchers respectively. These estimates came from local authorities (Yilan and Hualien) and operator estimates, and are in line with studies done by the Taiwan Cetacean Society, who estimated 220,000-240,000 whale watchers in total.

Most trips run for a couple of hours out from the coastal ports and return. Operators offer dedicated whale watch trips, but also run fishing and nature cruises, particularly to an island to the north of Yilan. The trips cost around $26, but most operators have websites and offer discounts for online bookings.

Target species are mainly smaller cetaceans – spinner dolphin, pantropical spotted dolphin, Risso's dolphin, bottlenose dolphin and Fraser's dolphin. However, orcas, false killer whales, beaked whales (type not specified) and sperm whales are also seen.

Whale and dolphin tourism is considered an important drawing card for Yilan, Hualien and Taitung.

Some incidental watching of the Chinese white dolphin is also carried out on the west coast, but has not been included in this analysis.

Main species:	Small cetaceans: *bottlenose dolphin, Risso's dolphin, spinner dolphin, pantropical spotted dolphin, Fraser's dolphin*
Tourists:	
International	1%
Domestic	99%
Types of tours:	Boat-based day or half-day trips
Average adult ticket price:	$28
Estimated employment numbers:	150
Main whale watch season:	April to October

Acknowledgements:
Thanks to Lien-Siang Chou at National Taiwan University, Mr Zhu at Hualien Fisheries Department and seven operators. Special thanks to Chen Xin for her fantastic translation and research assistance.

Georgia, Ukraine and Russia – Black Sea

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	Minimal	N/A	6	Minimal	Minimal	Minimal

★ Capital City: Odessa (Ukraine); Tbilisis (Georgia)
Whale Watch Locations:
01: Black Sea

Several resorts on the Black Sea coast of Georgia, Ukraine and Russia offer dolphin watching on their websites. Several captive dolphin watching facilities exist in the area and it is difficult to determine what type of activities were on offer at some establishments. At the time of research Russia and Georgia were at war and we were unable to make direct contact with operators. Future research should focus on Batumi in Georgia, Sochi in Russia and Balaklava on the Crimean Peninsula in the Ukraine.

The countries of the Black Sea often disagree over cetacean issues. Many dolphins have been caught here and sold to captive dolphin parks. In 2002 Georgia moved to have the live dolphin trade banned from the region, but was overruled. Later efforts to restrict trade through quotas, with a current quota of zero, have been more successful. It will be interesting to see if a wild dolphin watching industry can be established in this region and what impact it might have on Black Sea cetacean policy.

Main species:	Large cetaceans: None Small cetaceans: *common dolphin, bottlenose dolphin, harbour porpoise*
Tourists:	
International	N/A
Domestic	N/A
Types of tours:	Short boat-based trips
Average ticket price:	N/A
Estimated employment numbers:	8
Main whale watch season:	June to September (peak tourist season)

Acknowledgements
Thanks to Alexei Birkun and four operators

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http://www.hsus.org/marine_mammals/what_are_the_issues/marine_mammals_at_cites/black_sea_bottlenose_dolphin_proposal.html
http://www.blacksea-crimea.com/sea.html

India

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	3,600	N/A	N/A	$19,000	$49,000	$68,000
1998	25,000	62.3%	N/A	$150,00	$375,000	$525,000
2008	112,900	16.3%	355	$654,975	$1,871,350	$2,526,325

★ Capital City: New Delhi
Whale Watch Locations:
01: Goa
02: Chilika Lagoon

There are two main dolphin watching locations in India – Goa on the west coast and Chilika Lagoon in the state of Orissa on the east coast. River dolphins are also watched in the River Ganges.

In Goa, around 60,000 tourists watched Indo-Pacific humpback dolphins in 2008, showing very strong growth since 1998 (the 1998 figure shown above is based only on Goa, meaning that whale watching in Goa is up from 25,000 in 2008, an average annual increase of 24%). Goa is a major international tourist destination and boat owners and operators offer trips to tourists around the area's hotels and popular beaches. Some 30 boat operators are registered, but there are many casual and opportunistic operators. Trips are generally cheap: on average $8 for around an hour's viewing. Longer trips on larger boats with meals are also available. As operators are dispersed and offer a range of cruise and nature tourism options, it is difficult to get information on the industry. More research is needed on dolphin watching in Goa.

On the other side of India, in the eastern state of Orissa, Chilika Lagoon is a large, brackish estuary and a registered Ramsar site as a wetland of international significance. The lagoon occupies approximately 1,000 square kilometres and is home to a population of 130 endangered Irrawaddy dolphins. Small boat owners, mainly operating out of Satpada and Sipakuda, take tourists to see the dolphins for 60-90 minute trips. Trips cost from $8 to $15 for the whole boat, depending on your bargaining skills and the number of hours spent on the water. Boats take up to ten passengers, often in family groups.

An estimated 50,000 tourists per year visit Chilika Lagoon for dolphin watching. Up to 99% of these dolphin watchers are domestic tourists, unlike Goa, where international tourists are a significant market. Trips are provided by some 320 boat owner/operators, employing up to 600 people, and generating considerable indirect employment. The size of this industry, and the fact that it operates in a sensitive wetland area, has prompted concerns for the conservation of the dolphin population and the wider ecosystem. Several organisations and researchers have been working with local authorities and operators to manage the industry.

Meanwhile, in West Bengal about 55,000-60,000 tourists visit the Sundarbans forests every year. Thirty to 40 boats operate tours in the area, aiming mainly to see tigers. Tigers are seldom seen, but the trips are in

Ganges River dolphin and Irrawaddy dolphin habitats. This opportunistic dolphin watching has not been quantified, but could be substantial, and could develop into more dedicated trips in the future.

Several areas offer river dolphin watching in the Ganges, such as Patna, the capital city of Bihar state, and an area on the Chambal River near Agra. Trips can be organised casually with local fishermen or other nature tour agencies. Most of these trips offer only opportunistic dolphin watching opportunities.

Future researchers and dolphin watchers should note that there are dolphin populations in the Brahmaputra River, in Assam. There are plans to launch dolphin watching as a conservation initiative beginning in 2009.

Main species:	Small cetaceans: *Ganges River dolphin, Indo-Pacific humpback dolphin, Irrawaddy dolphin*
Tourists:	
International	20%
Domestic	80%
Types of tours:	Boat-based, casually organised with local boat owners, though larger operators do exist.
Average adult ticket price:	$8
Estimated employment numbers:	1000
Main whale watch season:	October to April

Acknowledgements:
Thanks to Dipani Sutaria at James Cook University, Vivek Menon, Dhiresh Joshi and Radhika Bhagat at Wildlife Trust of India, Moideen Wafar of the National Institute of Oceanography, Anna Forslund and Sandeep Behera at WWF, R.K Sinha at Dolphin Conservation Project, University of Patna, Coralie D'Lima of Nature Conservation Foundation, Nicola Hodgins at the Whale and Dolphin Conservation Society, Vardhan Patankar at Reefwatch and Pamela Mascarenhas at Goa Tourism. Several operators also provided helpful information.

Indonesia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	12,000	N/A	N/A	$100,000	$250,000	$350,000
1998	41,000	36.0%	N/A	$1,281,000	$3,270,000	$4,551,000
2008	36,370	-1.2%	170	$517,360	$1,200,210	$1,717,570

★ Capital City: Jakarta
Whale Watch Locations:
01: Lovina
02: Denpasar
03: Mahakam River
04: Komodo National Park

Bali, with its enormous tourist industry, is the largest cetacean watching area in Indonesia, with two different types of operations: one in the south of Bali and one in Lovina on the north side of the island. On the south side, large commercial cruise operators operate high-volume, relatively expensive cruises. Very few of these trips are dedicated dolphin watching trips, although one operator estimates they encounter dolphins 85% of the time. The one dedicated dolphin watching tour takes approximately 7,200 dolphin watchers per year.

In the table above, only dedicated dolphin watchers have been included from southern Bali. There are potentially many more opportunistic whale watchers undertaking trips in this area as part of large, commercial general cruises, however these are highly opportunistic sightings. In this report, these have not been counted due to the fact that it is difficult to attribute these numbers to the cetacean watching experience. The slight decline on previous data may therefore reflect this rather than an overall drop in total whale watchers in Indonesia.

On the north side of Bali, Lovina's dolphin watching operators are very different. Community-based, they use small *jukung*; long, narrow wooden dinghies which take a maximum of four passengers. There are around 164 jukung running dolphin tours from the four departure points, Kalibukbuk, Kaliasem, Aneka and Banyualit. Each boat is independently owned. These trips cost $5-6 per passenger. Research by Putu 'Icha' Liza from James Cook University suggests that Lovina operators take around 29,000 dolphin watchers per year. As Lovina is relatively remote, this is a large number, with perhaps 85% of tourists going to Lovina going dolphin watching, highlighting the importance of the industry to this small community.

The main species targeted by operators in Bali are spinner dolphins. Other common species include pantropical spotted dolphins, Fraser's dolphins, Risso's dolphins and short-finned pilot whales. Both the Southeast Asian and Hawaiian types of spinner dolphins are seen here.

In East Kalimantan, Irrawaddy dolphins are watched on small-scale tours of the Mahakam River. About four tour operators are running these trips and are being encouraged by a local conservation group, YK-RASI, to raise community and government support for the establishment of a conservation area. Several boat drivers have been trained in dolphin watching protocols. Approximately 150 tourists participated in these trips in 2008.

Whales migrate between the Pacific and the Indian Ocean through the Komodo National Park area in eastern Indonesia. The Nature Conservancy Indonesia has been studying these migrations and hopes cetacean watching will be possible in the future. At present only uncounted numbers of opportunistic whale watchers go on live-aboard and dive trips in the park.

Main species:	Small cetaceans: *Irrawaddy dolphin, spinner dolphin, pantropical spotted dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Small boat-based in Lovina, large commercial boats in south Bali. Small scale tours in Kalimantan.
Average adult ticket price:	$5.50 in Lovina, $49 in south Bali
Estimated employment numbers:	340
Main whale watch season:	Year-round

Acknowledgements:
Special thanks to Putu 'Icha' Liza at James Cook University, Danielle Kreb of YK-RASI and the main operators in south Bali. Thanks to Widodo Ramono at The Nature Conservancy Indonesia.

Japan

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditures	Total expenditure
1991	10,992	N/A	N/A	$371,000	$4,377,000	$4,748,000
1994	55,192	71.2%	N/A	$3,384,000	$20,155,000	$23,539,000
1998	102,785	16.8%	45	$4,300,000	$28,684,000	$32,984,000
2008	191,970	6.4%	104	$7,375,076	$15,345,902	$22,720,978

★ Capital City: Tokyo

Japan has a large cetacean watching industry spread across the length of the country. From Hokkaido in the north to tropical Okinawa and Ogasawara in the south, whale watchers can see a wide variety of whales and dolphins. The industry has grown strongly since 1998, at an average annual rate of 6.4%. Indirect expenditure figures have been calculated using different methodology, and are not directly comparable to earlier figures. The current indirect expenditure figure is based on half a day or a full-day of average tourist expenditure depending on the length of the tour. See methodology section for more details.

The largest cetacean watching region is Kyushu, with year-round sightings of bottlenose dolphins attracting over 100,000 visitors. The other main islands – Honshu, Hokkaido and Shikoku – all have substantial commercial whale watching operations, as do outlying islands such as Ogasawara and Okinawa, where seasonal humpback watching provides income to tour operators during their traditional low season.

Japan's whale watchers are nearly all Japanese, with most operators reporting domestic tourists account for 90% to 100% of visitors.

Below we have included a regional breakdown of the main whale watching locations across Japan. The data in the following sections reflect regional proportions of the above total number of whale watchers for the entire country.

Region	Number of whale watchers	AAGR	Operators	Direct expenditure	Indirect expenditure	Total expenditure
Kyushu	115,600	8.3%	16	$2,998,407	$5,317,600	$8,316,007
Honshu	10,250	5.5%	5	$476,419	$1,060,875	$1,537,294
Ogasawara, Miyakejima, Mikurajima	28,700	6.9%	47	$1,868,400	$4,099,317	$5,967,717
Hokkaido	10,420	5.6%	8	$717,875	$995,110	$1,712,985
Okinawa	20,000	5.4%	20	$986,667	$2,900,000	$3,886,667
Shikoku	7,000	-8.9%	8	$327,308	$973,000	$1,300,308
Total (2008)	**191,970**	**6.4%**	**104**	**$7,375,076**	**$15,345,902**	**$22,720,978**
Total (1998)	*102,785*	*16.8%*	*45*	*$4,300,000*	*$28,684,000*	*$32,984,000*

Acknowledgements:
Special thanks to Yumi Ishikawa, Toshi Shirai and Kae Yoneyama.

Kyushu

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	52,000	N/A	N/A	$1,198,119	N/A	N/A
2008	115,600	8.3%	16	$2,998,407	$5,317,600	$8,316,007

Whale Watch Locations:
01: Amakusa

Kyushu's dolphin watching operations are centred on Amakusa in Kumamoto prefecture, where 13 operators took approximately 75,600 tourists in 2007 to see bottlenose dolphins. Dolphin watching has been running in the region for 15 years and has seen strong growth in this time to become Japan's most popular cetacean watching area. Other dolphin watch trips run from across Shimbara Bay in Nagasaki prefecture, taking around 40,000 visitors. One operator operates out of Minami Satsuma, and reports occasional sightings of larger cetaceans.

These boat-based dolphin watching trips take place all year round, but are most popular during warmer months (May to October) especially holiday periods. Trips run for around two hours and cost about US$30. Most operators run multiple trips in a day during busy periods.

Main species:	Small cetaceans: *bottlenose dolphin*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Boat-based, short trips to see dolphins.
Average adult ticket price:	$30 adult
Estimated employment numbers:	58
Main whale watch season:	May to October

Acknowledgements:
Thanks to Takarajima Tourism Association and seven operators

Honshu

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	7,042	N/A	N/A	$367,000	N/A	N/A
2008	10,250	5.5%	5	$476,419	$1,060,875	$1,537,294

Whale Watch Locations:
01: Choshi
02: Izu Peninsula
03: Notojima
04: Higashi Murogun

Honshu has four areas for whale and dolphin watching: Choshi in Chiba Prefecture, Futo on the Izu Peninsula, Higashi Murogun on the south coast of Wakayama Prefecture and a relatively new site in Notojima, Ishikawa prefecture. All sites offer boat-based trips.

Well-established operators in Choshi and Wakayama have seen solid growth in tourist numbers since 1998. They offer regular, boat-based trips to see sperm whales, Pacific white-sided dolphins, false killer whales and Risso's dolphins mainly between April and December. The half-day trips cost between $30 and $60.

On the Izu Peninsula, one fisherman formerly involved in dolphin hunting has turned instead to dolphin and whale watching. Despite years of whaling and dolphin hunting in the area, some of which continues today, tourists are now able to see sperm whales and various species of dolphin year round. The trips are most popular in the summer when several other fishermen use their boats to assist the main operator. Trips cost around $40 for adults with discounts for children and students.

A new dolphin watching operation has been established on the Sea of Japan / East Sea coast at Notojima. The operator believes the local pod of dolphins have migrated to the area from seas around Kyushu in the last few years. The operator combines dolphin watching with various education and conservation activities and courses. The main dolphin watching trips are boat-based and cost around $30.

Main species:	Large cetaceans: *sperm whale* Small cetaceans: *bottlenose dolphin, finless porpoise, Pacific white-sided dolphin, Risso's dolphin*
Tourists: International	5%
Domestic	95%
Types of tours:	Boat-based, short trips to nearby pods of dolphins and whale habitat.
Average adult ticket price:	$30
Estimated employment	24
Main whale watch season:	April to October

Acknowledgements:
Thanks to Shigeru Sugawara at Professional Association for Cetacean and Marine Life Interpreters (PACI), Hiromi Yamaguchi at International Cetacean Education Research Centre (ICERC) and four operators.

Ogasawara, Miyakejima, Mikurajima

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	14,700	N/A	N/A	1,296,576	N/A	N/A
2008	28,700	6.9%	47	$1,868,400	$4,099,317	$5,967,717

Whale Watch Locations:
01: Ogasawara
02: Mikurajima
03: Miyakejima

These islands are administratively part of Tokyo, but are some distance from the mainland. Miyakejima and Mikurajima are an eight-hour ferry ride from Tokyo, while Ogasawara is around 1000km south. Dolphin watching and, particularly, 'swim-with' trips are very popular on these islands, particularly Miyakejima and Mikurajima. Larger cetaceans can be seen seasonally from Ogasawara.

Operators are mainly small businesses such as diving shops, diving schools, inns or scenic cruise operators, with whale and dolphin watching being a part of their business. Local tourism and whale watching associations help coordinate and monitor the industry, and also help with marketing.

Ogasawara has seen strong growth in its cetacean watching industry, from 3,000 visitors in 1998 to around 14,500 in 2007 (latest complete season). Many of these are repeat visitors and it is not uncommon for people to go on multiple cetacean watching trips during their visit. The Ogasawara Whale Watching Association reports that bottlenose and spinner dolphins can be seen year round while sperm and humpback whales can be seen seasonally. Humpbacks are best viewed from February to April and can be seen from land as well as by boat. Sperm whales visit from June to October. A variety of trips are on offer with an average price of around $35 for watching and $100 for swim with dolphins and other diving trips.

Miyakejima's cetacean watching is focused on swim-with trips, with around 4,200 visitors this year, up from 3,150 in 2007. This growth is very important to the local tourism industry, which has been slowly recovering since a volcanic eruption forced the island to be evacuated in 2000. Prior to the eruption more than 80,000 tourists per year visited the island and dolphin watching numbers had been estimated at 8,300. Residents were only permitted to return to the island in 2005. Tourists have been slow to return to the island with only around 45,000 in 2007 according to the Miyakejima tourist association. The association considers dolphin watching to be an important drawcard for the island.

Mikurajima's dolphin watching industry has capitalised on the disturbance on Miyakejima, with numbers increasing from 3,000 to around 10,000. The importance of the industry is noted by the Mikurajima Tourism Association, which claims dolphin watching and swim with trips are a primary attraction for 99% of the island's visitors.

Main species:	Large cetaceans: *humpback whale, sperm whale* Small cetaceans: *bottlenose dolphin, spinner dolphin*
Tourists:	
International	1%
Domestic	99%
Types of tours:	Swim-with trips, boat-based watching and some land-based watching of humpbacks.
Average adult ticket price:	$35 for boat-based watching, $120 for swim-with tours
Estimated employment numbers:	100
Main whale watch season:	Year-round for dolphins, February to April for humpbacks and June to October for sperm whales in Ogasawara.

Acknowledgements:
Thanks to Tomomi Yokoyama at Miyakejima Tourism Association, Kyoichi Mori at Ogasawara Whale Watching Association, Kazunobu Kogi at Mikurajima Tourism Association and seven operators.

Hokkaido

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	6,027	N/A	N/A	$381,352	N/A	N/A
2008	10,420	5.6%	8	$717,875	$995,110	$1,712,985

Whale Watch Locations:
01: Rausu
02: Muroran

Hokkaido's boat-based whale and dolphin watching operations exist mainly in Rausu and Muroran. A volunteer organisation also takes occasional trips from Kushiro. All trips are run between May and October due to Hokkaido's harsh winters. Winter trips to see ice floes and seals are possible, but few cetaceans are spotted.

Most operators also offer fishing charters or scenic cruises; some are also inns that offer boat trips. During the summer, however, most run regular, dedicated whale watching trips, bringing considerable income to the regional economy. While there has been strong growth in whale watcher numbers since 1998, some smaller operations have ceased and the industry seems to have consolidated in Muroran and Rausu. In Rausu, the consolidation may be in part due to the designation of the nearby Shiretoko Biosphere Reserve focusing nature tourism on the town.

Rausu sees the greatest variety of cetaceans, although many infrequently, with minke, sperm, Baird's beaked whales, orcas, short-finned pilot whales and dolphins. Other operators mainly target minke whales, Pacific white-sided dolphins and porpoises.

Main species:	Large cetaceans: *minke whale, sperm whale (occasional)* Small cetaceans: *Dalls' porpoise, harbour porpoise, orca, Pacific white-sided dolphin, short-finned pilot whale*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Boat-based
Average adult ticket price:	$72
Estimated employment numbers:	24
Main whale watch season:	May to October

Acknowledgements:
Thanks to all eight operators.

Okinawa

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	7,000	N/A	N/A	N/A	N/A	$178,294
2008	20,000	5.4%	20	$986,667	$2,900,000	$3,886,667

Whale Watch Locations:
01: Zamami and Okinawa main island

Okinawa's whale watching industry is focused on the Okinawa main island and on nearby Zamami Island. Boat-based trips run from January to March to see humpback whales on their breeding grounds. The Zamami Whale Watching Association has helped to set up two lookouts on the island where whales can also be seen during the season.

Operators are mainly dive shops that also run whale watching trips during the three-month season. There are about 20 main operators, though tens of others may run a whale watching trip if they have sufficient numbers. As the winter season is a quiet time for the dive shops, whale watching provides a welcome activity for these businesses.

Main species:	Large cetaceans: *humpback whale*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Boat-based, some land-based viewing
Average adult ticket price:	$49
Estimated employment numbers:	100
Main whale watch season:	January to March

Acknowledgements:
Thanks to Hirokazu Ohtsubo at the Zamami Whale Watching Association and ten operators.

Shikoku

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	17,873	N/A	7	$715,135	N/A	N/A
2008	7,000	-8.9%	8	$327,308	$973,000	$1,300,308

Whale Watch Locations:
01: Kochi Prefecture

Shikoku has whale watching at various points along its southern coastline, in Kochi Prefecture. Boat-based trips, offered mainly through fishing cooperatives, operate from April to October. The trips encounter a range of cetaceans, mainly Bryde's whales and bottlenose dolphins, although humpback and sperm whales have also been sighted.

Shikoku is the only area in Japan to have seen a marked decline in the number of whale watchers according to the data gathered. All operators, mainly fishing cooperatives whose main activity is not whale watching, reported lower estimates than those reported in 1998. Industry watchers suggest that in addition to a decline in general Kochi tourism, promotion of the industry has not kept pace with other areas. Although Kochi was a pioneering area for whale watching in Japan, investment and development have been limited, with only the largest cooperative having a website with up-to-date information and booking forms.

Main species:	Large cetaceans: *Bryde's whale, sperm whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, short-finned pilot whale, Risso's dolphin*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Boat-based
Average adult ticket price:	$49
Estimated employment numbers:	20
Main whale watch season:	April to October

Acknowledgements:
Thanks to Kotoe Sasamori, Mr Kukita at the Kochi Tourism Convention Centre and seven operators.

Local Case Study: Japan

Internationally, Japan is better known for whaling than whale watching. Many people in non-whaling countries are surprised to learn that Japan has the largest cetacean watching industry in Asia (by total expenditure), particularly given the controversy over its "scientific whaling" programme. In fact, Japan's whale watching industry generates many times more revenue than its whale meat industry, which is also heavily subsidised by the government.

Japanese attitudes to whales, whaling and whale watching are often misunderstood by foreigners. Japan has conservationists who are just as committed to conserving cetaceans as their counterparts overseas. Other Japanese are determined to protect what they see as their cultural, economic and culinary heritage, in continuing to hunt and eat whales. The vast majority of the population sits in the middle – broadly supportive of conservation, consider themselves 'nature' lovers and not opposed to the idea of eating whale meat. Many Japanese see no contradiction in going whale watching one day and another day eating whale.

Whale watching operations in Japan sometimes reflect this breadth of opinion. Many operators emphasise conservation and strive to inform their patrons about cetaceans' lives and the threats they face. They provide information about whales and other ecological issues. This is particularly the case in Eastern Hokkaido, Okinawa and Ogasawara, areas known for their clean environment and ecotourism.

In other areas, such as Shikoku, parts of Honshu and parts of Hokkaido, fishermen make some extra money by taking tourists to see whales, but there is little emphasis on conservation and little effort to develop into a sustainable tourism industry. Parts of these communities are said to be unfriendly towards whale watching, due to perceptions that it may harm efforts to reinstate whaling in the future. This is a shame for whale watching locally, as these areas have great potential, with some of the best large cetacean sightings in the country.

Like public opinion, the vast majority of cetacean watching in Japan is between these two extremes. By far the largest number of cetacean watchers in Japan watch dolphins in the western bays of Kyushu. Operators here do not seem to emphasise conservation issues or education, but they are keen to promote dolphin watching and dolphins as a lucrative symbol of the area's tourism. Dolphin watchers are often day-trippers and families, who have fun watching the playful dolphins, without considering the issues that trouble the pro- and anti-whaling factions. Dolphin watching here is fun and lucrative.

This last point about cetacean watching being lucrative is important. I recently met a Japanese butcher and discussed Japanese meat markets. He lamented that whale tongue, his favourite cut, is so difficult to come by. He had recently been whale watching in Victoria, Australia but could not understand why Australians would object to his selling whale, when they are quite happy to eat kangaroo. While he has no intention of stopping eating and selling whale, he was interested to hear about the economic value of whale watching in Australia, Japan and other places. As a small businessman, he quickly understood the implications of even limited whaling on the profits of businesses set up to watch the rare and spectacular mammals.

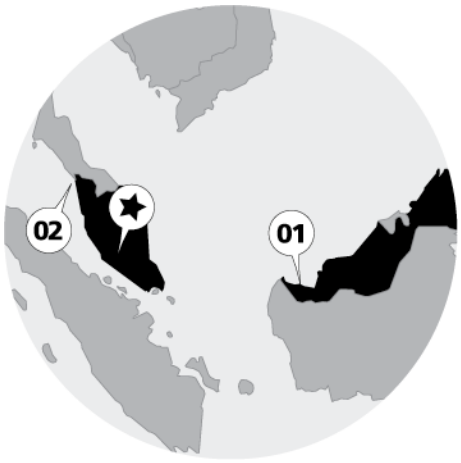
Convincing Japanese that whaling is morally wrong will be very difficult. Convincing them that their whale watching industry needs support and protection might be a lot easier.

Rod Campbell – Rod lived in Japan for two years and completed his undergraduate environmental economics studies at Kyoto University. This is his personal reflection on whaling and whale watching in Japan.

Malaysia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	7,000	~39.5%	6	$308,000	$152,250	$460,250

★ Capital City: Kuala Lumpur
Whale Watch Locations:
01: Kuching
02: Langkawi



Dolphin watching in Malaysia is largely focused on Sarawak, where tours in rivers and estuaries near the state capital, Kuching, encounter Irrawaddy dolphins and occasionally finless porpoises and Indo-Pacific humpback dolphins. Dolphin watching tours were first offered in Sarawak in 1998, and dedicated dolphin watching tours now attract around 1500 tourists per year, while around 5500 see dolphins opportunistically on other tours.

Tours are offered by six tour operators and boat owners. While there are dedicated dolphin watching tours, most tours combine dolphin watching with other wildlife viewing and a mangrove cruise. The majority of tourists opt for combined tours that include dolphin watching, a mangrove cruise and wildlife watching (crocodiles, proboscis monkeys, birdlife, etc.). A typical tour will last four hours with perhaps one hour allocated specifically to dolphin watching, if dolphins are spotted, then more time is allocated to this segment of the tour. Tours cost around $40.

Some opportunistic dolphin watching is also offered by cruise operators on the island of Langkawi, but sightings are inconsistent, preventing regular, dedicated trips from getting started.

Main species:	Small cetaceans: *Irrawaddy dolphin*
Tourists:	
International	85%
Domestic	15%
Types of tours:	Boat-based, dedicated dolphin watching trips and other nature tours.
Average adult ticket price:	$44
Estimated employment numbers:	10
Main whale watch season:	March to November

Acknowledgements:
Thanks to Wayne Tarman of Travelcom Asia Sdn Bhd, dolphinsofsarawak.blogspot.com and three operators.

Maldives

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	30	N/A	1	$100,000	$49,000	$149,000
2008	14,496	85.5%	13	$525,536	$56,000	$581,536

★ Capital City: Malé

As a nation of small, tropical islands with a large tourism industry, the Maldives have a considerable cetacean watching industry. The one operator identified in the 1998 survey is still operating at a similar capacity, and is still the only dedicated whale watching business offering experienced interpretation on cetacean watching trips. Other operators are beach resorts that offer dolphin watching trips to their guests.

The one dedicated operator, owned by an experienced marine biologist, runs approximately four multi-day, live-aboard cruises per year, between October and May. They see a wide variety of whales and dolphins, estimated at around 8 – 12 different cetacean species per trip. These trips are focused on international tourists and cost around $2000, including food and cabin. All this expenditure is included in the direct expenditure calculation. The indirect expenditure calculation used here assumes that these dedicated whale watchers will spend two days in the capital and includes this expenditure and $1000 from airfares as attributable to whale watching.

The Maldives has many island/beach resorts catering to international tourists and several, approximately 12, have excursions to see spinner dolphins. Prices varied between resorts, from being included with room charges to $120, depending on the trip, length of time and other activities, but we have used an average price of $20 in our calculations. Most resorts offer trips year round, though some say sightings often involve travelling too far which hinders the uptake of dolphin watching. No indirect expenditure is attributable to these dolphin watchers as dolphin watching has not been a factor in influencing their decision to go to the Maldives, or extend their stay.

In July 2009, the Maldives will host the first international cetacean symposium in the Indian Ocean, partly to mark the 30-year anniversary of the creation of the Indian Ocean Sanctuary.

Main species:	Large cetaceans: *blue whale, Bryde's whale, sperm whale* Small cetaceans: *Risso's dophin, spinner dolphin, short-finned pilot whale*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Boat-based, live-aboard, and short trips from

	resorts
Average ticket price:	$20 for day trips organised through resorts $2000 for multi-day live-aboard
Estimated employment numbers:	34
Main whale watch season:	October to May

Acknowledgements:
Thanks to Charles Anderson and five operators.

Myanmar (Burma)

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	40	N/A	8	$5,560	$1,200	$6,760

★ Capital City: Naypyidaw
Whale Watch Locations:
01: Mandalay
02: Mergui Archipelago

Myanmar has a small cetacean watching industry in two locations. Infrequent trips to see the Irrawaddy dolphin run in its namesake, the Ayeyarwady (Irrawaddy) River above Mandalay. Some opportunistic dolphin and whale watching also takes place in the Mergui Archipelago as part of scuba diving trips. Operators are tour organisers, who may offer dolphin watching among many tour options.

Information about cetacean watching in Myanmar is difficult to obtain, particularly after political violence and a cyclone in 2008. Prior to these events approximately six dolphin watching trips ran in a year. Information in this section is based on operator websites and communication with the region's Wildlife Conservation Society representative.

Main species:	Small cetaceans: *Irrawaddy dolphin*
Tourists:	
International	99%
Domestic	1%
Types of tours:	Infrequent boat-based trips in the Ayeyarwady (Irrawaddy) River
Average adult ticket price:	$139 (based on operator website)
Estimated employment numbers:	11
Main whale watch season:	October to February

Acknowledgements:

Thanks to Brian Smith of WCS for his survey and several emails.

Nepal

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	150	N/A	2	$23,000	$6,000	$29,000
2008	125	-1.8%	10	$2,135	$2,188	$4,323

★ Capital City: Kathmandu
Whale Watch Locations:
01: Koshi River
02: Karnali River

Nepal has small populations of Ganges River dolphins in the Koshi and Karnali Rivers. Efforts to promote cetacean watching, particularly by the Nepal Centre for Riverine Lives, have met with difficulties due to political instability over the last ten years.

One ecotourism operator offers some dedicated dolphin watching opportunities and several trekking operators list the possibility of seeing dolphins on their trips. One even offers a chance to kayak with dolphins. Operators reported sighting dolphins on between 1-25% of their trips, suggesting that most dolphin watching is opportunistic, although there are plans to offer dedicated dolphin watching again in the future.

The above figures are based on estimates by NGOs for dolphin watchers in 2008 for the dedicated operator and trekking companies found on the internet that used dolphin watching in their promotional material. The direct expenditure figure is based on average cost of one day's trekking through these companies divided by their reported sightings rate.

Main species:	Small cetaceans: *Ganges River dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Dolphin watching offered as part of trekking tours, some with kayaking.
Average adult ticket price:	Trekking tours cost around $68 per day.
Estimated employment numbers:	14
Main whale watch season:	N/A

Acknowledgements:
Thanks to Gajendra Jung at the Nepal Centre for Riverine Lives, Neera Pradhan at WWF Nepal, Anna Forslund at WWF Sweden, Rajesh Malla at Department of Forest Research and Survey, Sunita Chaudhary at The Rufford Small Grants Foundation and three operators.

Pakistan

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	250	0%	1	$2,500	$5,750	$8,250

★ Capital City: Islamabad
Whale Watch Locations:
01: Sukkur

Dolphin watching takes place in a dolphin reserve area of the Indus River. The target species of the tours is the Indus River dolphin, an endangered endemic subspecies of the South Asian river dolphin. Since 2000, WWF Pakistan has been working with its provincial partner organisations for the conservation of Indus River dolphins. Most trips leave from Sukkur in Sindh Province, southeast Pakistan. The boat trips are not yet running regularly, but are offered on a casual basis by WWF Pakistan and the Sindh Wildlife Department, in cooperation with local fishing boat owners.

According to WWF, about 200 to 300 tourists visit Sukkur each season (October to March) and go on dolphin boat safaris. The dolphins are important in attracting visitors to the region as it is an endemic, unique and threatened subspecies of freshwater dolphin only found in the Indus River and is a flagship species of Pakistan. WWF has also been working on establishing marine-based dolphin and whale watching off Pakistan's coast.

Main species:	Small cetaceans: *Indus River dolphin (fellow subspecies of the Ganges River dolphin, both of which are sometimes called South Asian river dolphins)*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Informal, casual tours offered by WWF and Sindh Wildlife department in conjunction with local fishermen
Average adult ticket price:	$10
Estimated employment numbers:	1
Main whale watch season:	October to March

Acknowledgements:
Thanks to Ahmad and Uzma Khan at WWF Pakistan.

Philippines

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1998	12,000	N/A	N/A	$121,000	$806,000	$927,000
2008	17,000	3.5%	~60	$540,540	$1,022,400	$1,562,940

★ Capital City: Manila
Whale Watch Locations:
01: Pamilacan Island
02: Bais
03: Puerto Princessa
04: Malampaya Sound

Whale and dolphin watching tourism in the Philippines has grown over the last ten years, particularly in the Central Visayas, around Pamilacan, an island south of Bohol. Other popular areas are Bais on Negros Oriental and Puerto Princessa on Palawan. Local government and NGO initiatives have been important in establishing cetacean tourism as successful enterprises in all these areas bolstered by Philippine Department of Tourism and New Zealand Aid assistance.

Pamilacan Island now boasts up to 60 whale and dolphin watch operators. The area around the island (Panglao and Baclayon towns) south of Bohol receives roughly 15,000 passengers per year. A range of tourists, from package tours to backpackers, are attracted to the area due to Bohol's cultural and eco-tourism feautres, such as the Chocolate Hills, Tarsier monkeys and dive sites. Most whale watch operators are fishermen who have converted their boats to work informally, offering trips to tourists on the beach, using small, open boats that take from four to 20 passengers. Cetaceans are present in the waters year-round, with peak season being from December to May (this coincides with peak tourism numbers and calmer waters). Main cetaceans sighted are spinner, bottlenose, Risso's, Fraser's and pantropical spotted dolphins as well as melon-headed and short-finned pilot whales. Occasionally Bryde's and sperm whales are also seen, sometimes bringing calves.

The Pamilacan Island Dolphin and Whale Watching Organisation (PIDWWO) is the only local community-managed operator that works like a cooperative, with 40 staff on rotation. The business places an emphasis on protecting the cetaceans and follows strict, self-imposed guidelines to ensure the sustainability of the business. In 2006 the PIDWWO won a Tourism for Tomorrow award from the World Travel & Tourism Council.

Concerns have been raised about operators on other islands in the area offering day tours using poorly equipped fishing boats. They have minimal safety standards for passengers and cetaceans, but are attractive to tourists as they cost considerably less.

Pamilacan has a history of whale hunting over several hundred years and the crews of today's whale watching boats were formerly whale and dolphin hunters. The island's name is derived from the local term 'Pamilacan' which is a large hook that was used to harpoon whales and other large marine species, such as whale sharks and manta rays. Hunting of large marine life continued at a subsistence level until the mid- to

late 1990s when improved technology and boat engines saw hunting increase to unsustainable levels. In 1997 a programme to develop whale watching tourism as an alternative income source for the island was begun by WWF Philippines, government agencies and donors. Within one year of the beginning of the programme, the national government banned all hunting of cetaceans and whale sharks, forcing the islanders to rethink their livelihood.

The transition from whale hunting to whale watching was not smooth. Consultation with the local community was inconsistent and tension rose on the island between pro-hunting and pro-tourism factions. In recent years the majority of the island has come to endorse the tourism approach, as greater social and financial gains can be made by developing tourism on the island than the short-term benefits of trading the meat and fins of large marine animals. A user fee system ($1) is being implemented to offset some of the costs of tourism management and to operate a ticketing and booking system.

From Bais on Negros Oriental, several tour operators can organise boat trips to see pantropical spotted, spinner and bottlenose dolphins. Trips can take up to 20 passengers and are usually accompanied by a naturalist guide. Dolphins can be seen all year round, but operators focus on a March-October season when seas are calmer and weather is more favourable.

From Puerto Princesa on Palawan three diving and cruise companies have begun offering dedicated dolphin watching trips from March to November. The half-day boat trips encounter mainly spinner, pantropical spotted, and Risso's dolphins and short-finned pilot whales. Dolphin watching is being supported by an NGO, Bantay Kalikasan and the Puerto Princesa government.

Irrawaddy dolphins can be watched in the Malampaya Sound, where the Taytay local government, WWF-Philippines and the department of tourism promote community-based tourism. To date, this site has attracted only small numbers of tourists due to its geographical isolation. The population of the Irrawaddy is, however, reaching dire levels.

Another site under development is in Calayan, Cagayan Province in northern Luzon. The area has the only known breeding ground for humpback whales in the Philippines, and a community-based ecotourism project is being developed by the Centre for Rural Empowerment and the Environment.

In other parts of the country, resorts run optional marine mammal interactions from Cagayan and Batangas in the north, to Masbate, Romblon, Cebu and down to Cagayan and Davao in the south of the country.

Main species:	Large cetaceans: *Bryde's whale, sperm whale* Small cetaceans: *bottlenose dolphin, Fraser's dolphin, melon-headed whale, pantropical spotted dolphin, Risso's dolphin, short-finned pilot whale, spinner dolphin*
Tourists:	
International	65%
Domestic	35%
Types of tours:	Boat-based, half-day or shorter trips
Average adult ticket price:	$32
Estimated employment numbers:	175
Main whale watch season:	Dolphins can be seen year-round at Pamilacan, while Bryde's whales are seen from February to May and sperm whales from

	September to May. Puerto Princessa and Bais operators mainly work March to October.

Acknowledgements:
Thanks to Stuart J. Green, Louella Dolar, Theresa R. Aquino, Joselino S. Baritua, and Yeb Saño, Elson Aca and Mavic Matillano at WWF Philipines.

References:
More information about Pamilacan's transition from whale hunting to whale watching can be found at http://www.wisatamelayu.com/en/article.php?a=OEJGL3c%3D=

Russia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	100	N/A	N/A	$300,000	$50,000	$350,000
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	1,285	17.8%	11	$537,684	$609,070	$1,146,754

★ Capital City: Moscow
Whale Watch Locations:
01: Solovetsky Islands
02: Kuril Islands
03: Kamchatka Peninsula
04: Commander Islands

Cetacean watching has two main types of operation in Russia, in two areas. In Karelia, in the country's northwest, belugas can be seen in the White Sea. Thousands of kilometres to the east, meanwhile, live-aboard cruise ships take tourists on nature tours of the Kamchatka Peninsula and the Russian Far East, regularly encountering cetaceans.

The White Sea currently offers the only dedicated cetacean watching trips in Russia. Two tour operators offer nature tours of the region that see a variety of wildlife and can also arrange beluga watching trips for around $38. These operators took around 120 people on dedicated beluga watching trips in 2008, mainly tourists from Finland. Boat trips can also be arranged casually in the area, particularly around the Solovetsky Islands, so there is likely to be considerable opportunistic beluga watching not included in these figures.

In the Russian Far East, several cruise operators offer live-aboard cruises of the Kuril Islands, Kamchatka Peninsula, Commander Islands and other areas. All of these trips focus on the natural beauty and biodiversity of the area, focusing on cetaceans to varying degrees. The cruises encounter a wide range of species, including minke whale, Dall's porpoise, sperm whale, orca and fin whales.

These cruises last for around two weeks, with berths costing at least $5,000 and averaging around $9,000, including all meals and expenses. Tourists on these trips are mainly international.

Accurate numbers of operators, tours and tourists are very difficult to obtain in this remote region. The number of whale watchers above is based only from cruise operators replying to our survey and should be

considered a minimum number. Direct expenditure has been calculated by multiplying fare prices by the proportion of promotional material related to cetaceans, a value that varied between 1-16%.

Cruises from Petropavlovsk-Kamchatsky encounter cetaceans occasionally, but this occurs too infrequently to be included in this analysis.

Main species:	Large cetaceans: *fin whale, minke whale, sperm whale* Small cetaceans: *beluga, orca, Dall's porpoise*
Tourists:	
International	99%
Domestic	1%
Types of tours:	Boat-based short trips to see belugas in the White Sea. Multi-day/week cruises of the Russian Far East offering opportunistic sightings
Average adult ticket price:	$38 for White Sea, $9000 for Far East Cruise
Estimated employment numbers:	15
Main whale watch season:	June to September

Acknowledgements:
Thanks to seven operators, the Tourist Information Centre of Karelia, Sergey Frolov, Rauno Lauhakangas at the University of Helsinki and Alexander Burdin.

Sri Lanka

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	N/A	N/A	N/A
1994	Minimal	N/A	Minimal	N/A	N/A	N/A
1998	Minimal	N/A	Minimal	N/A	N/A	N/A
2008	620	9.5%	6	$20,200	$31,000	$51,200

★ Capital City: Colombo
Whale Watch Locations:
01: Galle
02: Kalpitiya
03: Trincomalee

Sri Lanka has around six tour companies and resorts that organise whale or dolphin watching, although most of this activity is minimal and irregular. In 2007-2008, two prominent operators began running commercial whale watching tours, focusing on larger cetaceans, particularly blue and sperm whales. These trips are mainly run from the south of the country around Galle and Mirissa and cost around $140. Approximately 200 whale watchers undertook these trips this year and had good sightings in the December to April season. These trips used larger boats, with the ability to take whale watchers a considerable distance from shore. This was the first season for these trips and operators are predicting strong growth in demand for the tours.

Other businesses and resorts run shorter dolphin watching trips, particularly off the coast of Kalpitiya and Trincomalee. Around 400 people enjoyed such trips in 2008, off Kalpitiya and operators are planning to expand. The trips cost an average of $10 for a couple of hours viewing. Operators claim to regularly see pods of up to 1,000 spinner dolphins about three to five kilometres from the shoreline. The season for these trips runs from October to April.

Trips to see dolphins close to the coast attract mainly local clientele, around 80% being Sri Lankans, while the offshore dedicated pelagic whale watching trips tend to focus on the overseas markets.

Main species:	Large cetaceans: *blue whale, sperm whale* Small cetaceans: *spinner dolphin*
Tourists:	
International	90% (offshore), 20% (closer trips)
Domestic	10% (offshore), 80% (closer trips)
Types of tours:	Boat-based, with some on larger, offshore vessels, and others running shorter trips within 5 km of the coast.
Average adult ticket price:	$10 for short trips, $130 for offshore trips
Estimated employment numbers:	8
Main whale watch season:	October to April

Acknowledgements:
Thanks to three operators and Anouk Ilangakoon (member, Cetacean Specialist Group, IUCN Species Survival Commission).

Thailand

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditures	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	2,700	26.9%	10	$8,100	$27,000	$35,100

★ Capital City: Bangkok
Whale Watch Locations:
01: Bang Pakong
02: Nakhon Si Thammarat
03: Songkhla Lake

Despite its famous beaches and large tourist industry, Thailand does not have a large whale or dolphin watching industry. The Hoyt report mentioned that dive operators in Phuket advertised some dolphin trips, but these have not developed into regular trips as sightings are too infrequent. On the Gulf of Thailand side, waters are shallow and thus unsuitable for populations of large cetaceans. Despite this, dedicated dolphin watching trips have developed in two locations, on Bang Pakong River in Chachoengsao Province, near Bangkok, and in the south of the country in Nakhon Si Thammarat.

Bang Pakong is an easy day trip from Bangkok. The journey is made mainly by locals to see Irrawaddy dolphins in the river, or in the Gulf of Thailand where the dolphins feed later in the day. Trips are arranged informally with local fishermen for around $15 per boat, holding four to six people. More formal cruises farther up the Bang Pakong River may also see the dolphins.

In Nakhon Si Thammarat, boats can be arranged to see pink Indo-Pacific humpback dolphins. It is difficult to estimate numbers of dolphin watchers in the area, but there do not seem to be many. Some small resorts feature the pink dolphins in their promotional material, but are unsure of numbers, saying that boats can be arranged with advance notice.

Some dolphin watching occurs on Songkhla Lake from Thalae Noi, Phatthalung Province. The focus is a small, endangered population of around 35 Irrawaddy dolphins. If efforts to conserve the population of dolphins are successful, more dolphin watching may develop.

Researchers suggest that there are several other locations where dolphin watching could be developed, and surveys are being conducted. One promising location is in Trat Province, where there is another population of Irrawaddy dolphins. Researchers emphasise that given Thai dolphin watching depends on small, vulnerable populations of cetaceans, strict regulation of operations, ideally with permit controls, will be essential to ensure sustainability.

Main species:	Small cetaceans: *Irrawaddy dolphin, Indo-Pacific humpback dolphin*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Short boat cruises
Average adult ticket price:	$5
Estimated employment numbers:	10
Main whale watch season:	Year-round, but busier in cooler months, November to March

Acknowledgements:
Thanks to the fishermen at Bangpakong and to Saisunee Chaksuin at WWF Thailand, Kanjana Adulyanukosol at Phuket Marine Biological Centre, Supot Chantrapornsyl at Southern Marine and Coastal Research Centre Songkhla, Somchai Mananunsap at Eastern Marine and Coastal Resouces Research Centre, Rayong

Turkey

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	Minimal	N/A	N/A	Minimal	Minimal	Minimal

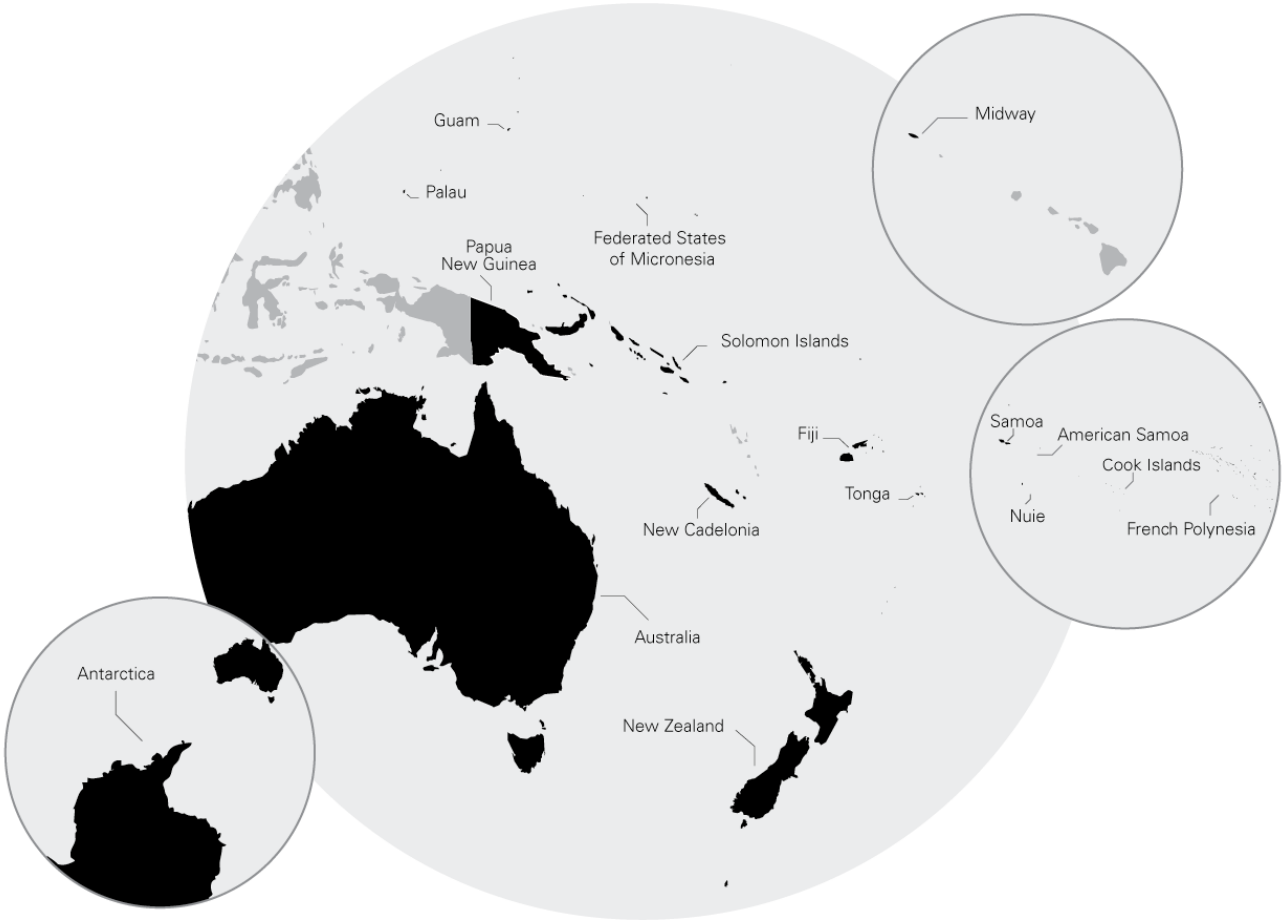
★ Capital City: Ankara
Whale Watch Locations:
01: Bay of Kalkan
02: Cape of Kos

In the last global report, a minimal amount of opportunistic dolphin watching was reported to have occurred on cruises in the Aegean and Black Seas, but none of this was considered to be dedicated whale watching. In 1998, it was stated that considerable potential existed for small cetacean watching in these locations.

Research conducted for this report in 2008 indicated no further growth of whale watching in Turkey. No dedicated or substantial opportunistic cetacean watching has developed in the Aegean and Black Seas, although dolphins are sometimes sighted from dive trip boats, particularly around the Bay of Kalkan. Sailing cruise operators in the Aegean Sea report that they see pods of dolphins several times per week, including Risso's dolphin calves around Cape of Kos and long-finned pilot whales occasionally each season.

Within the methodology applied to this report, it has been considered therefore that there was little whale watching in 2008, with little tourism expenditure associated with cetaceans.

Oceania, Pacific Islands and Antarctica



Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	376,375	N/A	3	$10,051,000	$36,518,000	$46,569,000
1994	540,200	12.8%	6	$18,622,000	$49,088,00	$67,710,000
1998	976,833	15.9%	12	$35,494,000	$87,766,000	$123,260,000
2008	2,477,200	9.7%	17	$117,180,363	$210,688,889	$327,869,252

Whale watching in the Oceania, Pacific Islands and Antarctica region has grown strongly in recent years to become a significant and widespread industry. Across the South Pacific and into the North Pacific, small island countries and territories have emerging whale and dolphin watching industries that have the potential to inject important economic activity in their small and often fragile economies.

Oceania, Pacific Islands and Antarctica have been well covered by research over the ten-year period since the Hoyt Report was released. Studies undertaken for IFAW by Economists at Large have updated figures for many of the countries in the region in the last five years in five separate reports. As a result, the pattern of growth in this region is well mapped.

What we have found is a continually growing industry across all corners of the region, led by significant whale watching industries in New Zealand, Australia, Guam and more recently Antarctica.

Seventeen countries in this region have some form of whale watching activity, up from 12 countries in 1998. The industry takes nearly 2.5 million whale watchers on trips, well above the 1998 figure of 1 million. This

represents a significant average annual growth rate of just under 10% per annum since 1998. Across the entire region, the industry is responsible for over $300 million in expenditures, up from $123 million in 1998.

For this section of the report, we have used additional data from reports undertaken over the last five years by Economists at Large for the Oceania region – New Zealand, Australia, Tonga and the Pacific Islands have all been researched as part of separate reports for IFAW.[27]

For the Pacific Islands, a recent report was released in 2008 that looked at the industry in 2005. We have drawn on this for the figures produced in this report, in many cases replicating those earlier figures (where whale watching was a low level activity). In some cases, we have projected a growth trend forward from the 2005 figures based on country tourism arrival data combined with most recent growth rates in whale watch tourism. Where this has occurred, it has been noted in the country summary below. For the major Pacific Islands, where most of the whale watch activity occurs, discussion with local country contacts assisted to ascertain the rate of change since the 2005 data was gathered. Where any growth projections are estimated (from 2005-2008), we have based these on a conservative figure of 2.4% annual average growth rate of international inbound tourism. This figure is reported by the UN World Tourism Organisation as the average rate of growth across the Oceania region for 2000-04 (most recent data available). The same rate of growth has been applied to expenditure levels.

In the case of Australia and New Zealand, entirely new surveys have been completed for this report in order to gather the most up-to-date data on these countries, due to the significant size of their respective industries. We have also covered whale watchers to Antarctica for the first time since IFAW's 1998 global study, and Guam has been totally re-researched as it has such a significant proportion of the whale watching tourism in the Pacific Islands region. For the countries of American Samoa, the Cook Islands, the Federated States of Micronesia, Fiji, French Polynesia, New Caledonia, Niue, Palau, Papua New Guinea, Samoa and the Solomon Islands, some research is also derived from an unpublished early version of the Pacific Islands whale watching report from August 2006.

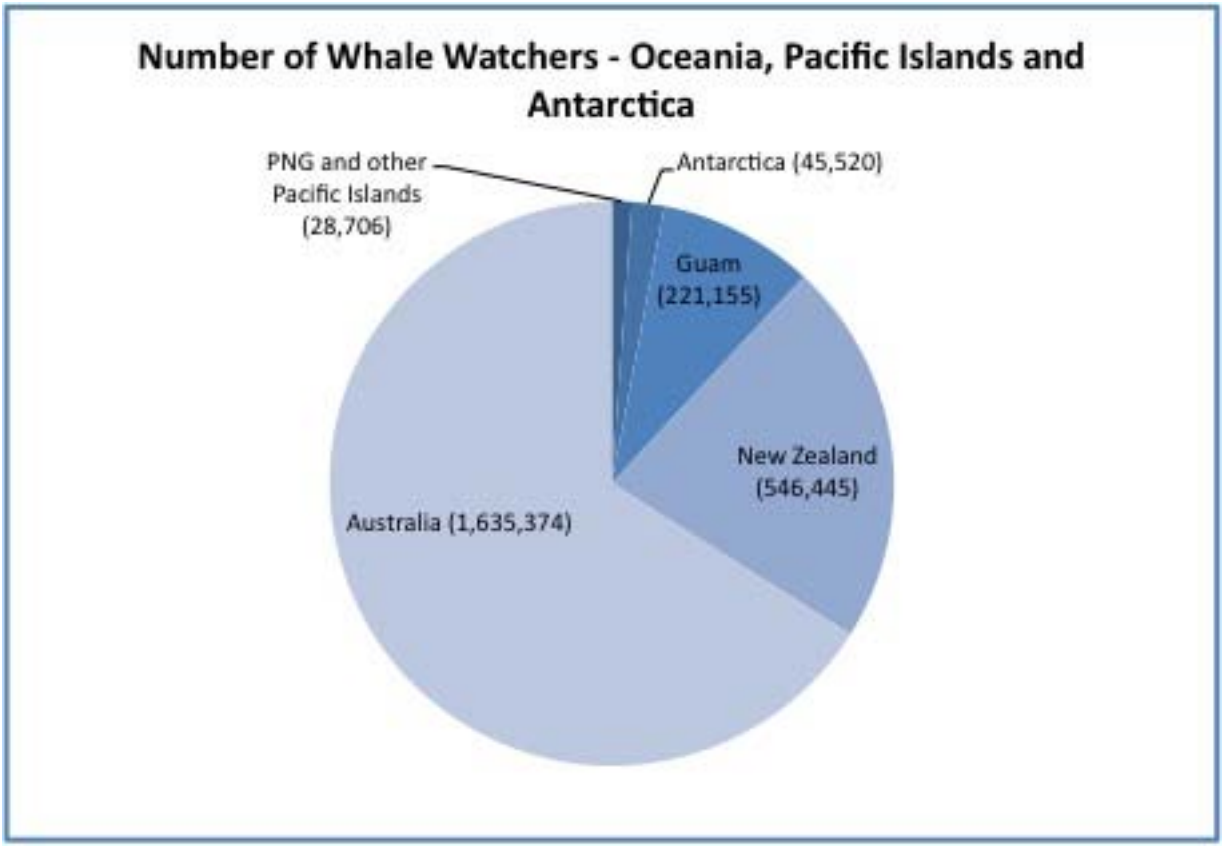
Acknowledgments:
Thanks go out to many people who have been generous with their time for this and previous work Economists at Large have undertaken in the Oceania region in the last five years. In particular, Darren Kindleysides and Olive Andrews from IFAW, Claire Garrigue and Aline Schaffer from Opération Cétacés, Mike Donoghue from the New Zealand Department of Conservation, and Mark Orams among many others.

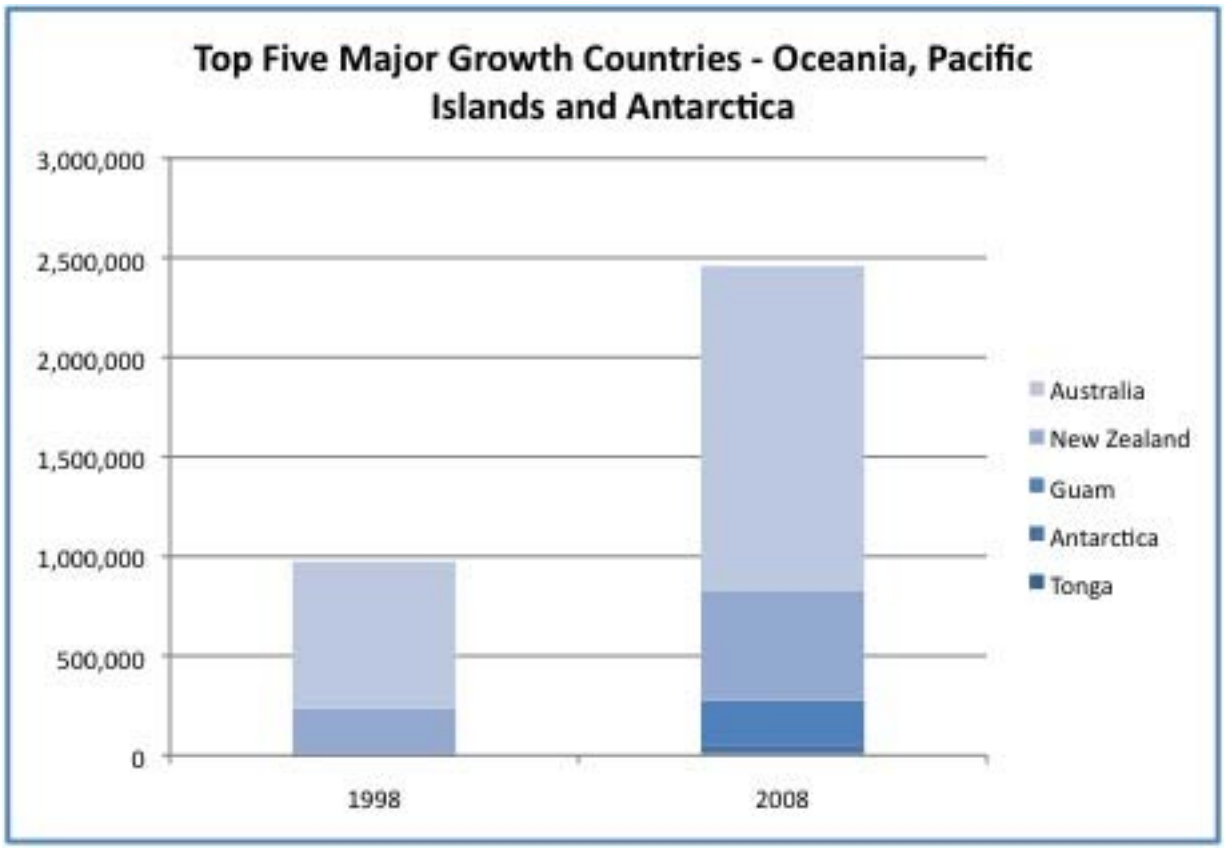
[27] Economists at Large 2008, *Pacific Islands Whale Watch Tourism: a region wide review of activity* an IFAW report; Economists at Large 2008, *Whale Watching Tourism in the Kingdom of Tonga,* a report for IFAW and Opérations Cétacés; Economists at Large 2005, *The Growth of Whale Watching in Sydney 2003-2004: Economic Perspectives,* an IFAW Report; Economists at Large, 2005, *The Growth of the New Zealand Whale Watching Industry,* an IFAW Report; Economists at Large 2004, *From Whalers to Whale Watchers: the growth of whale watching tourism in Australia,* an IFAW report.

Summary of country results

Country	Number of whale watchers		Growth between 1998 and 2008
	1998	2008	AAGR
American Samoa	Minimal	Minimal	0%
Antarctica	2,503	45,520	33.7%
Australia	734,962	1,635,374	8.3%
Cook Islands	Minimal	3,989	31.9%
Federated States of Micronesia	230	Minimal	0%
Fiji	Minimal	Minimal	0%
French Polynesia	Minimal	6,442	38.4%
Guam	4,000	221,155	49.4%
Midway	289	Minimal	0%
New Caledonia	1,695	6,222	13.9%
New Zealand	230,000	546,445	9%
Niue	50	290	19.2%
Palau	Minimal	Minimal	0%
Papua New Guinea	Minimal	644	9.9%
Samoa	Minimal	778	12%
Solomon Islands	Minimal	537	7.9%
Tonga	2,334	9,804	15.4%
REGIONAL TOTAL	976,063	2,477,200	9.8%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.


Number of Whale Watchers - Oceania, Pacific Islands and Antarctica
PNG and other Pacific Islands (28,706)
Antarctica (45,520)
Guam (221,155)
New Zealand (546,445)
Australia (1,635,374)


Top Five Major Growth Countries - Oceania, Pacific Islands and Antarctica
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
1998
2008
Australia
New Zealand
Guam
Antarctica
Tonga

American Samoa

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2005	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2008	Minimal	0%	Minimal	Minimal	Minimal	Minimal

★ Capital City: Pago Pago
Whale Watch Locations:
01: Fagatele Bay

American Samoa has a small tourism industry – around 6,000 visitors arriving each year by plane, and estimates of up to 10,000 more on cruise ships[28] – with no formal whale watching evident.

Some occasional land-based viewing of humpback whales and dolphins is reported to occur from Tutuila Island. A marine protected area (MPA) has been established at Fagatele Bay (the Fagatele Bay National Marine Sanctuary, managed by the National Oceanic and Atmospheric Administration of the United States Department of Commerce) where humpbacks are believed to visit and breed between August and October. Occasional cruises reportedly visit this area and view cetaceans, but there was no regular whale watching activity evident.

Main species:	Large cetaceans: *humpback whale*
Tourists:	
International	N/A
Domestic	N/A
Types of tours:	Occasional boat-based tours to MPA
Average adult ticket price:	N/A
Estimated employment numbers:	None
Main whale watch season:	August to October

Acknowledgements:
American Samoan Office of Tourism, National Park of American Samoa - Fagatele Bay National Marine Sanctuary

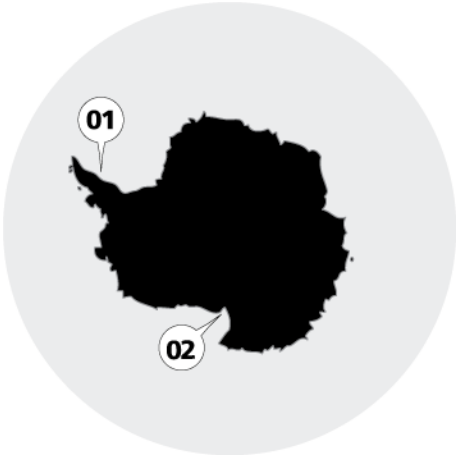
References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2008 data are a projection from 2005, remaining at an assumed minimal level of whale watch activity.

[28] American Samoan Office of Tourism, pers. comm., & National Park of American Samoa, pers. comm., March 2006

Antarctica

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	1,175	N/A	N/A	$5,900,000	None	$5,900,000
1994	2,000	19.4%	N/A	$10,000,000	None	$10,000,000
1998	2,503	5.8%	18	$15,348,000	$1,252,000	$16,600,000
2008	45,520	33.7%	55	$36,838,253	None	$36,838,253

Whale Watch Locations:
01: Antarctic Peninsula
02: Ross Sea



Tourism to Antarctica has seen very substantial growth in visitor numbers since 1998, which has translated into strong whale watching growth. Total cetacean watching expenditure more than doubled from $16.6 million in 1998 to nearly $37 million in 2008.

Because of the absence of permanent residents on the Antarctic mainland, all tourists to Antarctica are considered international, the majority travelling by ship from South America. A substantial number of tour operators conduct excursions along the Antarctic coastline that advertise the opportunity for customers to observe whales, with some highlighting whales as a major part of the trips, indicating that whale watching is an attraction that helps to motivate a significant proportion of overall tourism to the region.

The Antarctic Peninsula is the most frequently visited region of Antarctica for coastal sea-based tours, in part due to its proximity to the Argentine seaport of Ushuaia, from where the majority of excursions depart. Some operators also conduct visits to the Ross Sea region. In both areas the main tourism season is during the austral summer (November to March) although cetacean sightings are reportedly better late in the season. Survey responses also indicate that migrating cetacean populations are particularly high over this period.

With the exception of large cruise liners, most coastal expeditions around Antarctica offer visitors the opportunity to participate in short excursions on small inflatable water craft. This enables passengers to come into close proximity to a diverse range of cetacean species, particularly orcas and humpback whales, although other species, including hourglass dolphins, Antarctic minke whales, southern bottlenose whales and Arnoux's beaked whales, are also occasionally sighted.

Visitor numbers for Antarctica were sourced from the International Association of Antarctica Tour Operators (IAATO), an organisation devoted to safe and environmentally responsible travel to the continent, which offers detailed travel statistics on its website. Surveys were also received from a small proportion of the operators. As trips in this region have all costs included in the ticket price once onboard, there is no indirect expenditure calculated for this report. It should be noted however, that there is land-side indirect expenditure encountered by tourists at their embarking and disembarking ports. Estimates for this expenditure have been comprehensively estimated in an earlier report (see Hoyt & Iñíguez, 2008). Only a small proportion of total ticket price is included in the calculation of direct expenditure in this report (13% on average), based on the proportion of a cruise dedicated to whale watch activities.

For consistency with the methodology of this report, all boat-based visitors to Antarctica in 2008 have been counted as opportunistic whale watchers, due to the fact that watching marine mammals occurs as part of all trips, a majority in specialised small water craft. Furthermore, all trips occur in peak whale season when whales are reported to be abundant in Antarctic waters (according to operator responses). As an average (from survey responses), approximately 13% of time on a trip to Antarctica involves some form of cetacean watching. This therefore assumes that all tourists to Antarctica have some form of whale watching experience.

Importantly, the 1998 figures above (2,503) were based on a different methodology which counted only 25% of total visitors to Antarctica as whale watchers, and as such, the growth figure of 33.7% overstates the actual growth that has occurred. If we were to calculate growth on the same terms as we have counted whale watchers for 2008, then the more comparative AAGR figure (growing from 10,000 to 45,520) is 16.4%.

Main species:	Large cetaceans: *humpback whale, Antarctic minke whale* Small cetaceans: *Arnoux's beaked whale, hourglass dolphin, orca, southern bottlenose whale*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Expeditionary sea voyages, frequently combined with short inflatable boat excursions. Luxury cruise liners and yacht tours.
Average adult ticket price:	$6,225
Estimated employment numbers:	220
Main whale watch season:	November to March

Acknowledgements:
International Association of Antarctica Tour Operators and operators.

Australia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	335,200	N/A	N/A	$3,056,000	$29,213,000	$32,269,000
1994	446,000	10.0%	N/A	$4,662,000	$40,338,000	$45,000,000
1998	734,962	13.3%	223	$11,869,000	$44,327,000	$56,196,000
2003	1,618,027	17.1%	209	$19,118,775	$160,479,162	$179,597,937
2008	1,635,374	8.3%[29]	137	$31,018,879	$140,952,919	$171,971,798

Capital City: Canberra

The vast coastline of Australia offers many boat-, land- and air-based whale watching opportunities. Since 1998, the number of whale watchers has more than doubled, from 735,000 to over 1.6 million, representing an annual average growth rate of 8.3%. Over the decade, whale watching in Australia has been a story of growth and redistribution, as new areas have started offering whale watching and existing areas have seen tourist numbers plateau or even decline. Whale watching tourism in Australia is now a $31 million dollar industry (in terms of direct expenditure), generating total expenditure of $172 million and directly supporting an estimated 617 jobs. Large declines in the number of operators since 1998, and even 2003, are the result of including only active operators in this study. Previous research had included all permit holders, regardless of whether they were running commercial trips or not.

A significant study was undertaken for Australia in 2003 (Economists at Large, 2004) that assessed the growth in whale watching since 1998. Overall, 2008 numbers have been relatively steady since 2003, but the boat-based component of whale watching has grown at a rate of 3.2% per year, with numbers increasing from 558,336 tourists in 2003 to 653,825 tourists in 2008.

Along the eastern and western coast of Australia, the primary focus of whale watching is the migration of humpback and southern right whales. Dolphin watching accounts for a large number of all whale watching tourists in Australia, with significant, long-established industries at Monkey Mia in Western Australia, Port Phillip Bay in Victoria, Port Stephens in New South Wales, Moreton Bay and Hervey Bay in Queensland. Hervey Bay continues to attract the largest number of large cetacean watching tourists - nearly 65,000 in 2008. Port Stephens attracts the largest annual number of boat-based whale watch tourists anywhere in Australia – it received just over 270,000 tourists in 2008, over 80% of whom were there for dolphin watching tours.

In the south of Australia, southern right whales are predominantly the focus of land-based whale watching along the coast of Victoria, South Australia and Western Australia. Resident bottlenose dolphin populations also make up a significant proportion of the industry in these areas. Humpback whales are also seen along these coastlines, as well as sperm whales and occasionally blue whales. The only known dedicated blue whale operator in Australia runs helicopter trips out of Portland in Victoria.

[29] AAGR from 1998 to 2008

Since 2000, Tourism Research Australia (TRA) has been keeping statistics on boat-based whale watching in Australia, through the International and the Domestic Visitor Survey. Figures from TRA show that since 2003, boat-based whale watching has increased at an average annual rate of 8.2%, from 301,064 whale watchers in 2003 to 447,471 whale watchers in 2008. Numbers in this report differ to TRA's due to the inclusion of dolphin watching, as well as opportunistic whale watchers. Furthermore, research for this report was gathered directly from operators, rather than extrapolated from tourist surveys. Nevertheless, the rate of growth remains consistent with this research.

In the following sections, we have included a regional breakdown of the main whale watching locations across Australia on a state-by-state basis. The data in the following sections reflect regional proportions of the above total number of whale watchers for the entire country.

State	Number of whale watchers	AAGR[30]	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
Queensland	349,251	8.5%	49	$10,874,783	$46,208,441	$57,083,224
New South Wales	811,673	14.7%	40	$12,932,773	$52,428,992	$65,361,765
Victoria	56,310	-5.6%	11	$871,554	$3,367,308	$4,238,862
Tasmania	24,245	37.6%	2	$717,034	$1,071,611	$1,788,645
South Australia	194,026	6.2%	7	$1,015,109	$13,528,760	$14,543,868
Western Australia	199,870	1.8%	28	$4,607,626	$24,347,807	$28,955,433
Total (2008)	**1,635,374**	**8.3%**	**137**	**$31,018,879**	**$140,952,919**	**$171,971,798**
Total (1998)	734,962		223	$11,869,000	$44,327,000	$56,196,000

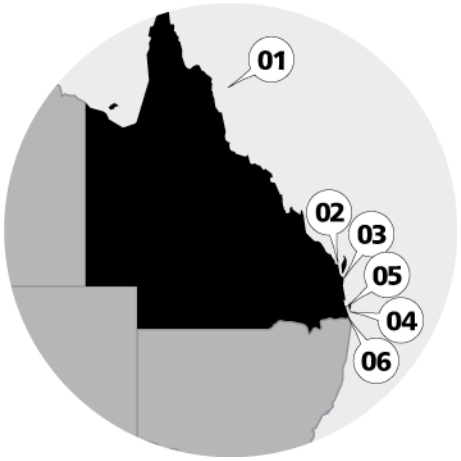
Acknowledgements:
Simon Allen (Murdoch University) and Frank Future (Whale and Dolphin Watch Australia Inc)

[30] AAGR from 1998 to 2008

Queensland

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	154,540	N/A	42	$4,222,000	$17,500,000	$21,722,000
2003	229,168	5.6%	43	$7,341,498	$54,879,789	$62,221,288
2008	349,251	8.5%[31]	49	$10,874,783	$46,208,441	$57,083,224

Whale Watch Locations:
01: Great Barrier Reef
02: Hervey Bay
03: Tin Can Bay
04: Stradbroke Island
05: Moreton Bay
06: Gold Coast



Queensland offers a variety of whale watching experiences, including boat and land-based whale watching, swim-with and dolphin feeding. Since 1998, whale watching in Queensland has grown at an average annual rate of 8.5% and in 2008, the state hosted nearly 350,000 whale watching tourists, representing 21% of Australia's total figure. Hervey Bay and Moreton Bay continue to be significant areas for whale watching tourism and Hervey Bay continues to hold an annual whale festival in August, although Hervey Bay has seen a decline in whale watching numbers since 1998, when numbers plateaued. Some have indicated that the expansion in whale watching at other locations along the southern coast of Queensland has impacted on numbers at Hervey Bay, as people can go whale watching closer to large population and tourist centres.

The majority of whale watching in Queensland still occurs in the south of the state, between Hervey Bay and the Gold Coast. Attracting 280,000 whale watchers per annum, the industry in this area has grown significantly since the last major study was undertaken in 2003, when it was estimated that there were 159,000 whale watchers; the main growth has occurred in the Gold Coast and at Tin Can Bay. In the Gold Coast, a new whale watching industry has emerged since 1998, and is estimated to have taken over 30,000 whale watching passengers in 2008. In Tin Can Bay, there is also dolphin feeding industry that was not included in 2003 or 1998 studies. This is one of only three formal dolphin feeding locations in Australia, the others being at Tangalooma Resort on Moreton Island National Park in Queensland and Monkey Mia in Western Australia.

Whale watching in South Queensland focuses on humpback whales, Indo-Pacific bottlenose dolphins and Indo-Pacific humpback dolphins.

Between July and November, boat-based whale watching trips are offered in Hervey Bay, Moreton Bay and the Gold Coast. Boat-based trips generally last for two to four hours with an average adult ticket price of $64.

Land-based dolphin feeding activities are offered from Tangalooma Resort on Moreton Island as well as at Barnacles Café near the Tin Can Bay boat ramp. Land-based observation of migrating humpbacks also takes place from Point Arkwright and Point Perry, close to Coolum Beach, as well as from Fraser Island and Stradbroke Island.

[31] AAGR from 1998 to 2008

Farther north, in the Great Barrier Reef Marine Park off the coast of Port Douglas, unique swim-with encounters with dwarf minke whales continue to be offered, with the industry having matured somewhat since 1998. Eight operators running trips in the region are now fully permitted to conduct swim-with trips, generally offered between June and July or opportunistically as part of day or live-aboard trips in the region. The area is the only known reliable aggregation site for dwarf minke whales and as such this is the only industry based on dwarf minke whales in the world. For more information, see the case study below.

Opportunistic boat-based whale watching occurs throughout the Great Barrier Reef. In 2003, these numbers were estimated annually at 60,000 tourists. No estimate of these numbers has been included in this study due to the unavailability of updated data. Following a review of operational policy and cetacean conservation by the Great Barrier Reef Marine Park Authority (GBRMPA), operators are no longer required to hold whale watching permits to undertake watching of cetaceans in this marine park. Whale watching operations are now managed through regulations rather than permits, as was the case in 2003.

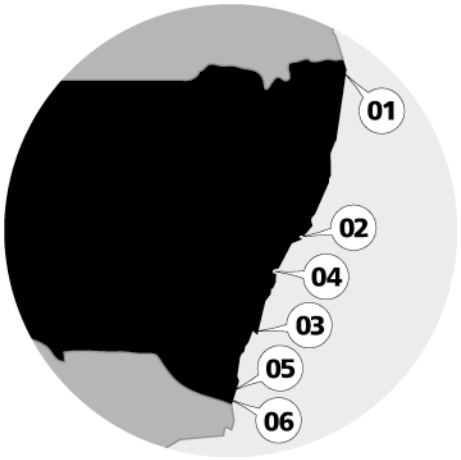
Main species:	Large cetaceans: *dwarf minke whale (subspecies of minke whale), humpback whale* Small cetaceans: *Indo-Pacific bottlenose dolphin, Indo-Pacific humpback dolphin*
Tourists:	
International	23%
Domestic	77%
Types of tours:	Boat-based, swim-with, dolphin-feeding, land-based
Average adult ticket price:	$65
Estimated employment numbers:	216
Main whale watch season:	June to July (dwarf minke whales) July to November (humpback whales) Year-round for dolphins

Acknowledgements:
Alastair Birtles, Natalie Stoeckl, Marina Farr, Arnold Mangott, Matthew Curnock and Peter Valentine at James Cook University, Anne Caillaud (GBRMPA), Peter Lynch (Blue Dolphin Marine Tours), Steve Somers (Dolphin Eco Tours), Anthony Arden (Gold Coast Whale Watching Pty. Ltd.), Anthony Muyt (Queensland EPA), Trevor Hassard (Tangalooma Island Resort), Bree Kloda (Redlands Tourism), Kirsten Wortel (Queensland EPA) and all other operators who kindly participated in our research.

New South Wales

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	206,000	N/A	73	$3,565,000	$9,211,000	$12,776,000
2003	936,630	20.8%	28	$6,596,423	$56,030,066	$62,626,489
2008	811,673	14.7%[32]	40	$12,932,773	$52,428,922	$65,361,765

Whale Watch Locations:
01: Byron Bay
02: Port Stephens
03: Huskisson
04: Sydney
05: Merimbula
06: Eden



With an industry stretching the length of the coast, from Byron Bay in the far north all the way to Eden in the south, New South Wales (NSW) has a large and diverse whale watching industry. The state now accounts for just over 800,000 whale watchers, or 50% of all whale watching tourists in Australia. This is up from just over 200,000 whale watchers in 1998, representing an average annual growth rate of 14.7% across the decade. The decade has seen whale watching spread out along the coast, with new regions such as Coffs Harbour, Port Macquarie and Sydney now offering trips. Of these, Sydney - being the largest population centre and a popular tourist destination - has seen the development of a significant industry estimated to have taken over 25,000 whale watching passengers in 2008.

Since 2003, whale watching in NSW has declined at an average annual rate of nearly 3%, but this is due to decreased estimates for land-based whale watching rather than any real drop in formal boat-based whale watching, an estimate that's supported by the fact that operator numbers have grown substantially in that period. The number of boat-based whale watchers grew at an average annual rate of 2.6% over this period, from 319,706 in 2003 to 363,940 in 2008.

Dolphin watching accounts for a significant proportion of all whale watching in NSW, with significant dolphin based tourism at Byron Bay, Port Stephens, Huskisson (Jervis Bay), Eden and Merimbula. Trips focused solely on dolphins generally last less than two hours, while those focused on large cetaceans (and general eco tours) can last up to three hours. The average ticket price for dolphin-only watching trips is $18 for adults and $10 for children.

Of those targeting large cetaceans, operators all along the coast offer seasonal dedicated whale watching tours, usually between June and November, focused on the humpback migration. Some operators also offer whale watching aboard high-speed vessels, offering dedicated whale watching trips with a shorter travelling time to locate whales. Average prices for large cetacean watching trips are higher, at $51 for adults and $26 for children.

In terms of species, the main focus of the industry is the northern and southern migration of humpback whales and Indo-Pacific bottlenose dolphins. The northern migration of humpback whales occurs during June and July with the southern migration taking place between September and November. Some areas

[32] AAGR from 1998 to 2008

such as Port Stephens, Huskisson, Eden, Merimbula and Byron Bay run dolphin watching trips all year round, sometimes as part of diving trips or general cruises. Southern right whales are also seen along the coast but tend not to migrate as far north as humpback whales. Other species occasionally seen include orcas, long-finned pilot whales, sei whales, fin whales, false killer whales, sperm whales, pygmy right whales, pygmy sperm whales, Bryde's whales and blue whales.

Land-based whale watching is possible from many locations along the NSW coast, with the NSW Department of Environment and Climate Change listing 14 land-based locations within national parks suitable for whale watching. These locations stretch from Cape Byron State Conservation Area in the north to Ben Boyd National Park in the south. This report has estimated that in 2008, 450,000 land-based whale watching tourists attended established whale watching locations. This figure has declined since 2003, when the estimated number of land-based tourists was nearly 620,000.

However, 600,000 of the estimated tourists from 2003 were attributable to Byron Bay. In this report, land-based whale watchers in Byron Bay are estimated at a figure of 370,000, based on updated information from NSW Parks and Wildlife.

NSW will continue to have a strong whale watching industry and seems to be approaching a point of maturity, with whale watching operators running trips the length of the coast. In this scenario, some concerns remain regarding the human encounter time for an individual whale.

Main species:	Large cetaceans: *humpback whale, southern right whale* Small cetaceans: *Indo-Pacific bottlenose dolphin*
Tourists:	N/A
International	22%
Domestic	78%
Types of tours:	Boat-based, land-based
Average adult ticket price:	$51 (whale watching) $18 (dolphin watching) $30 (eco cruises with opportunistic cetacean watching)
Estimated employment numbers:	257
Main whale watch season:	Varies with location along the coast but generally between June and November for humpback whales. Year-round for dolphins.

Acknowledgments:
Simon Allen (Murdoch University), Megan Kessler (Macquarie University), Elizabeth Hawkins (Southern Cross University), Robyn Kesby (NSW Department of Environment and Climate Change), Craig Shephard (NSW Department of Environment and Climate Change), Richard McEvilly (Marine Parks Authority NSW), Sue Walker (Marine Parks Authority NSW), Frances Clements (Marine Parks Authority NSW), Peter Hay (NSW Department of Environment and Climate Change), Frank Future (Whale and Dolphin Watch Australia Inc) and all operators who kindly participated in our research.

References:
NSW Department of Environment and Climate Change, Whale watching in NSW, accessed January 2009, available online at: http://www.environment.nsw.gov.au/animals/WhaleWatchingInNSW.htm

Victoria

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	100,000	N/A	6	$709,000	$4,353,000	$5,062,000
2003	139,248	4.2%	10	$706,388	$17,707,622	$18,414,010
2008	56,310	-5.6%[33]	11	$871,554	$3,367,308	$4,238,862

Whale Watch Locations:
01: Port Phillip Bay
02: Warrnambool
03: Portland

Whale watching in Victoria primarily takes place in Port Phillip Bay, and also from Warrnambool and Portland along the Shipwreck Coast, west of Melbourne. In 2008, there were an estimated 56,000 whale watching tourists in Victoria, constituting only 3% of the national total. This is down from the estimated 100,000 whale watchers in 1998 and 139,248 whale watchers in 2003 and is mainly due to decreases in estimates for whale watchers at Warrnambool.

In Port Phillip Bay, tours are predominantly dedicated boat-based tours, although many operators in the region – including diving operators, charter companies and ferry operators – also advertise opportunistic sightings of dolphins. Four operators are also licensed to conduct swim-with dolphin tours. Australian fur seals are commonly seen during trips and some trips are advertised as dolphin and seal viewing tours. Estimated passenger numbers here have declined since 1998, when it was predicted that numbers were at 'near carrying capacity' (Hoyt, 2001).

In the west, along the Shipwreck Coast, Warrnambool and Portland attracted up to 37,190 land-based whale watchers in 2008. Southern right whales migrate through Bass Strait between Tasmania and Victoria from June to September. Warrnambool bills itself as 'Victoria's Southern Right Whale Nursery' and it is here that mothers spend extended periods of time nursing their calves. The land-based viewing platform is located at Logan's Beach, with mothers and calves visible in Lady Bay, while males and young juveniles can be seen farther out off the coast. In 2008, new fixed binoculars were installed at Logan's Beach platform to allow for improved whale viewing.

Figures in Warrnambool were significantly lower in 2008, compared to 1998 and 2003; this decline is likely due to changes to the methodology used to calculate land-based figures for Warrnambool, rather than an actual decline in visitation. In 2003, data was obtained from the Warrnambool City Council, which at the time had undertaken some research to ascertain the economic impact on the town due to whales. In the absence of any similar recent studies, the data in this report relied on car count data to the Logan's Beach viewing platform. Warrnambool also sees significant annual fluctuation in its whale watch visitor arrivals, depending on the arrival of whales – there have been years of very low whale numbers leading to decreases in tourist arrivals.

In Portland, just down the coast from Warrnambool, the whales generally pass through without stopping for as long as they do in Warrnambool, although they are often visible much closer to shore and S

[33] AAGR from 1998 to 2008

southern right whales are even known to enter the harbour. Sperm whales are also sometimes seen in the area. The Portland Visitor Centre manages an email notification system that has as many as 300 subscribers who are alerted when a whale is sighted. Similar to Eden in NSW, a flag is also raised and a siren sounded when a sighting occurs.

Portland is also home to the only known dedicated air-based blue whale watching tour in the world. Offered between November and May, the trips are helicopter-based with a flying time of 30 minutes and a sighting rate of over 95%. Blue whales aggregate for feeding in the Bass Straight off Portland in an area known as the Bonney Upwelling, one of only 12 known aggregation areas for blue whales around the world[34] (Gill, 2005).

Main species:	Large cetaceans: *humpback whale, southern right whale, blue whale* Small cetaceans: *Indo-Pacific bottlenose dolphin*
Tourists:	N/A
International	30%
Domestic	70%
Types of tours:	Boat-based, land-based, air-based, swim-with
Average adult ticket price:	$32 (dolphin watching) $68 (dolphin swim-with) $240 (blue whale watching, 30min flying time for 2 passengers)
Estimated employment numbers:	17
Main whale watch season:	November to May (blue whales) June to September (southern right whales) Year-round (dolphins)

Acknowledgements:
Peter Abbot (Warrnambool City Council), Vivienne Clare (Department of Sustainability & Environment), Rachel Marchbank (Department of Sustainability & Environment), Thesspina Donopoulos (Parks Victoria), and all operators who kindly participated in our research.

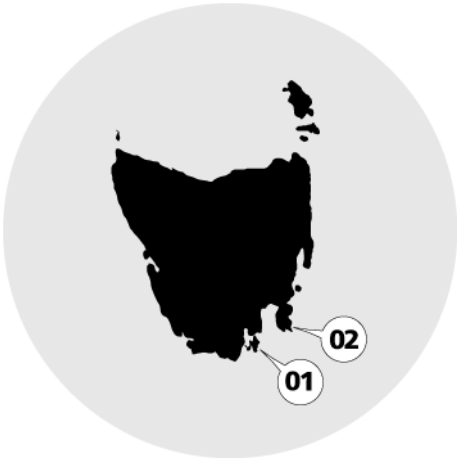
References:
Gill, P 2005, 'Movements of satellite-tagged blue whales, Bonney Upwelling', Australocetus Research & Deakin University, April 2005, available online at:
http://www.environment.gov.au/coasts/species/cetaceans/conference/pubs/bw-gill.pdf

[34] The other known aggregation areas for blue whales are the Chilean fjords, Costa Rica Dome, Baja California, US west coast, Gulf of St Lawrence, Davis Strait (Greenland), off the west coast of Iceland, south of Madagascar, east coast of Sri Lanka, Davis Sea (Antarctica) and eastern Nusa Tenngara, Indonesia.

Tasmania

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	<1,000	N/A	1	Minimal	Minimal	Minimal
2003	<1,000	N/A	~3	Minimal	Minimal	Minimal
2008	24,245	37.6%[35]	2	$717,034	$1,071,611	$1,788,645

Whale Watch Locations:
01: Bruny Island
02: Tasman Peninsular



In Tasmania, opportunistic whale watching occurs as part of general eco tours run along the coastline of Bruny Island and the Tasman Peninsula. Although the tours are primarily marketed as seal and landscape tours, dolphins are seen on 95% of Bruny Island trips, and 70% of Tasman Peninsula trips. Whales are also seen, but less frequently, with southern right and humpback whales being the most commonly sighted. Minke whales, orcas and the very rare pygmy right whale are also seen occasionally. Cruises are three hours long with an average ticket price of $65 for adults and $36 for children.

Because of minimal estimates for whale watchers in 1998, Tasmania has the highest growth rate in Australia, with an average annual rate of 37.6% between 1998 and 2008. As mentioned in Hoyt (2001), there is moderate potential in Tasmania for whale watching, and the growth seen here is likely to be due to improved advertising of cetacean watching opportunities.

Other locations in Tasmania are known for incidental sightings of whales and dolphins, but these are considered too unreliable for any operator to market whale watching as an activity.

Acknowledgments:
Two operators

[35] For the purposes of calculating AAGR, we have assumed 1000 whale watchers in 1998. This AAGR is from 1998 to 2008

South Australia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	106,000	N/A	12	$1,468,000	$1,416,000	$2,884,000
2003	159,900	8.6%	9	$1,293,858	$5,364,677	$6,658,534
2008	194,026	6.2%[36]	7	$1,015,109	$13,528,760	$14,543,868

Whale Watch Locations:
01: Yalata
02: Ceduna
03: Fleurieu Peninsular
04: Adelaide

South Australia offers a variety of whale watching activities, ranging from land-based viewing, through to boat-based and even swim-with tours. Land-based numbers account for a significant proportion of all tourists, with an estimated 184,000 land-based tourists in 2008. Since 1998, whale watching in South Australia has grown at an average annual rate of 6.2%, with swim-with tours starting up in this time. Boat-based watching of large cetaceans has not increased significantly since 1998 and dolphins remain the main focus of boat-based activities, with larger cetaceans mostly watched from land.

At the western edge of the Eyre Peninsula, the Head of Bight viewing platform continues to be a major land-based whale watching location, attracting approximately 30,000 land-based whale watchers in 2008. The waters of the Great Australian Bight Marine Park are one of the most important calving grounds in Australia for southern right whales and between 60 – 100 whales can be seen daily between June and November. The Head of Bight viewing platform is located in the Yalata Aboriginal Protected Area and there are plans to involve local communities in the whale watching activities more actively by acting as tour guides and incorporating some Aboriginal history and whale folklore into tours. A market stall is also run once a month with the community women's group selling various products direct to tourists. Further plans to develop an out of season 'virtual whale experience' are also being considered for the area, which attracts significant numbers of tourists outside the whale watching season.

Along the Fleurieu Peninsula south of Adelaide, land-based whale watching is a popular activity between the months of June and November. Short-beaked common and Indo-Pacific bottlenose dolphins can be seen year-round in the waters off the Fleurieu Peninsula, while southern right and humpback whales attract the majority of attention between May and October. It has been estimated that in 2008, nearly 160,000 land-based whale watching tourists visited the Fleurieu Peninsula. Popular locations for whale watching include Goolwa Beach, Middleton Beach, Port Elliot and Waitpinga Beach.

Indo-Pacific bottlenose dolphins are the main focus of the boat-based industry in South Australia with only one boat-based operator offering large cetacean watching (in Kangaroo Island). Vessels range from large to small capacity vessels, as well as kayaks. Two operators also offer swim-with dolphin tours.

In 2005, the Adelaide Dolphin Sanctuary (ADS) Act 2005 was proclaimed, creating a sanctuary for bottlenose dolphins in the Port River and Barker Inlet area. Dolphin watching tourism in the area is currently minimal

[36] AAGR from 1998 to 2008

although the management plan for the ADS released in September 2008 lists an intention to work with current and future operators to meet ADS objectives and monitor tourism impacts.

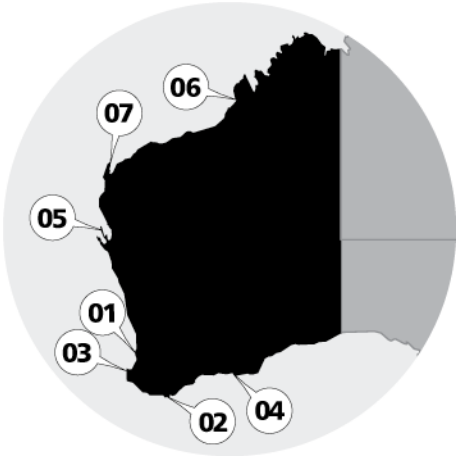
Main species:	Large cetaceans: *southern right whale* Small cetaceans: *Indo-Pacific bottlenose dolphin, short-beaked common dolphin*
Tourists:	N/A
International	30%
Domestic	70%
Types of tours:	Boat-based, land-based, swim-with
Average adult ticket price:	$83 (swim-with) $40 (boat-based and kayaking) $5 (Port river cruise with dolphin watching)
Estimated employment numbers:	20
Main whale watch season:	May to October with best viewing between July and August (southern right whales) Year-round (dolphins)

Acknowledgements:
Paul Conlon (Gunya Tourism) and Tori Williams (South Australian Whale Centre).

Western Australia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	167,422	N/A	89	$1,905,000	$11,847,000	$13,752,000
2003	153,081	-1.8%	197	$3,180,609	$26,497,008	$29,677,616
2008	199,870	1.8%[37]	28[38]	$4,607,626	$24,347,807	$28,955,433

Whale Watch Locations:
01: Rockingham
02: Albany
03: Dunsborough
04: Esperance
05: Monkey Mia
06: Broome
07: Exmouth



In Western Australia, whale watching activities take place along nearly the entire long coastline, as far southeast as Cape Arid, and as far north as Broome. The industry is diverse and offers land, boat and air-based tours, as well as swimming with dolphins and feeding activities. Since 1998, whale watching tourist numbers have increased from 167,422 to 199,870, an average annual growth rate of 1.8%.

Those viewing resident Indo-Pacific bottlenose dolphins inhabiting the waters of Western Australia make up a big proportion of all whale watching tourists, with over 100,000 visitors to Monkey Mia alone in 2008. Farther south, dolphin tours also make up a big part of the industry in places such as Rockingham, Mandurah and Bunbury, where some operators offer swim-with tours.

Watching of large cetaceans takes place between May and December and is based on the migration of southern right and humpback whales, although blue whales are also seen occasionally in more southern waters. Dedicated and opportunistic boat-based whale watching tours are offered in Esperance and Albany, Augusta and Dunsborough, Perth and surrounds and farther north in Kalbarri and Exmouth. In 2008, one operator began offering dedicated tours as far north as Broome, with indications that the area could hold significant potential for whale watching. Whale watching cruises are generally two to three hours long with an average adult ticket price of $50.

The southwest coast of Australia, from Cape Arid to Cape Naturaliste, offers many good land-based whale watching locations, with the 'Ocean Giants Lookout Kit' – produced by Tourism WA – identifying 12 locations between Cape Naturaliste and Cape Leeuwin alone. East of Cape Leeuwin, Whale World in Albany (formerly the site of a whaling station), Sandpatch, Rotary Lookout, Bremer Bay (John Cove) and Point Ann offer good land-based whale watching. The waters around Bremer Bay, Fitzgerald River National Park and Cape Arid contain two of the three known major calving grounds for southern right whales in Australia[39] with significant aggregation of individuals occurring here during the whale watching season.

[37] AAGR from 1998 to 2008
[38] Numbers of operators are significantly lower since we've only included operators that appear to be active; the 2003 figures include all whale watching permit holders.
[39] The third is the waters off the Head of Bight.

Main species:	Large cetaceans: *humpback whale, southern right whale, blue whale* Small cetaceans: *Indo-Pacific bottlenose dolphin*
Tourists:	N/A
International	42%
Domestic	58%
Types of tours:	Boat-based, land-based, swim-with, dolphin feeding
Average adult ticket price:	$127 (swim-with) $49 (boat-based)
Estimated employment numbers:	92
Main whale watch season:	May to December (large cetaceans) Year-round (dolphins)

Acknowledgements:
Steve Mitchell (Whale and Dolphin Watch Australia Inc), Simon Allen (Murdoch University), Phil Coulthard (Dolphin Discovery Centre), Donelle Cameron (Albany Visitor Centre), Martin Randall (Department of Environment and Conservation), Tricia Sprigg (DEC), Kate Reading (DEC), and all operators who kindly participated in our research.

Local Case Study: Great Barrier Reef, Australia

Dwarf minke whales are known to inhabit Southern hemisphere oceans around the globe including South Africa, Australia, New Zealand, New Caledonia, Vanuatu and the east cost of South America. In Australia, they have been recorded in coastal waters of all states except Tasmania and the Northern Territory, but only in the Ribbon Reefs in the Great Barrier Reef has a dedicated industry devoted to swimming with these whales developed.

The dwarf minke was first officially observed in the Great Barrier Reef in the 1970s. During the 1980s, the first tourism experiences with dwarf minkes developed, by which time they were recognised as a sub-species of the larger minke whales. Dwarf minkes can grow up to eight metres long, making them one of the smaller baleen whales[40].

Between June and August, when sightings are most common, eight boat-based operators offer swim-with interactions with dwarf minke whales. These operators hold permits issued by the Great Barrier Reef Marine Park Authority (GBRMPA) in 2003, establishing them as the world's first fully permitted swim-with whale industry (GBRMPA, 2009).

Dwarf minkes in the region are unique as they exhibit a high degree of curiosity and often seem to actively seek out boats and divers. Dwarf minkes have also been recorded as approaching to within a metre of tourists, and there have been instances where one has nudged a camera (Mischon, 2008). Their pirouetting behaviour is another trait that makes these cetaceans particularly appealing to tourists. A behaviour unique to dwarf minkes, pirouetting vertically in the water is something that is exhibited by one individual in particular (now known as 'Pavlova' after the Russian ballerina), but also other individuals. Very occasionally, this display occurs within metres of swimmers.

The dwarf minke industry has developed a strong collaboration with scientific researchers stretching back over a decade. The Minke Whale Project (MWP) – the world's only dwarf minke research effort – was established in 1996 and is the most extensive underwater study of a whale species in the world (Mischon, 2008).

To date, researchers, assisted by tour operators and tourists themselves, have accumulated tens of thousands of underwater photos and many hours of video footage on these inquisitive, but little understood cetaceans. During each whale watching season, the permitted operators donate in-kind vessel berths to researchers to allow them to collect comprehensive records of whale encounters and vessel movements, as well as collecting passenger questionnaires and 'interaction behaviour diaries' filled in by enthusiastic passengers. Three MWP PhD studies, due to be completed towards the end of 2009, have investigated dwarf minke behaviour, biology and sustainable management of this unique industry. The key findings of these studies will be compiled into a report to the Great Barrier Reef Marine Park Authority (GBRMPA) to assist with the sustainable management of the industry .

The dwarf minke is yet to be formally described as a species in scientific literature and it has been suggested that if it is finally named, that it might be named after Peter Arnold (1949-2006) for his long term and pioneering involvement with dwarf minke research and conservation, as well as his substantial contribution to other cetacean research in Australia (Minke Whale Project, 2006). Peter, along with Alastair Birtles (from James Cook University) co-founded the MWP, which began as a collaboration between James Cook University, the Museum of Tropical Queensland and an operator, Undersea Explorer.

In summary, the Great Barrier Reef dwarf minke whale watching tourism has many unique aspects:

[40] Pygmy right whales are smaller than dwarf minke whales, with an adult length of 6.1m (American Cetacean Society, 2009).

- It is the only known predictable aggregation of dwarf minke whales;
- It is the only dedicated swim-with dwarf minke tourism industry in the world;
- It was the world's first fully permitted swim-with-whales tourism industry:
- Extensive research dating back to 1996 has gathered data on dwarf minke whale movement patterns, spatial and temporal distribution, individual identification, visual and acoustic behaviour, as well as passenger experiences, attitudes and motivations and the sustainable management of the industry;
- Close to one thousand different individual whales have been identified over the 13 year study;
- Research since 2003 will be used to provide information regarding the sustainability of the current industry and management arrangements, with a focus on sustainable ecological and economic management of the industry;
- The research is highly collaborative, involving tourism operators, academic institutions, research institutes, conservation NGOs and government departments;
- All operators are permitted, with a Code of Practice in place that is significantly more stringent than broader Marine Park Regulations and was developed collaboratively;
- Much remains unknown about the dwarf minke; however, the industry is assisting to gather further scientific information about the sub-species and this provides a unique insight into the biology and behaviour of the oceanic rorquals of the genus *Balaenoptera.*

The industry represents a great model for other developing or developed industries in terms of combining ecological and economic information to ensure that cetacean encounters are sustainable and can be enjoyed by future generations of both species.

Further reading:
Minke Whale Project – Official Research Website
http://www.minkewhaleproject.org

CRC Reef Research Centre – Dwarf Minke Whales
http://www.reef.crc.org.au/discover/plantsanimals/minke/index.html

References:
American Cetacean Society 2009, 'Pygmy Right Whale | Cetacean Fact Sheet | American Cetacean Society', accessed April 2009, available online at: http://www.acsonline.org/factpack/PygmyRightWhale.htm

CRC Reef Research Centre 2002, 'Dwarf minke whales in the Great Barrier Reef: Current state of knowledge', CRC Reef Research Centre Ltd, May 2002, Townsville.

Great Barrier Reef Marine Park Authority (GBRMPA) 2009, 'Great Barrier Reef Marine Park Authority: Dwarf Minke Whale Tourism Monitoring Programme', accessed April 2009, available online at: http://www.gbrmpa.gov.au/?a=779

Mischon, V 2008, 'Encountering mutual respect', *Ecos*, Ed. 145, Oct-Nov 2008, pp. 18-20.

Minke Whale Project 2006, 'Research update: information sheet #9', 15 December 2006.

Cook Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2005	3,715	64%	Minimal	$9,890	$464,375	$474,265
2008	3,989	31.9%[41]	Minimal	$10,619	$498,619	$509,238

★ Capital City: Avarua
Whale Watch Locations:
01: Rarotonga

The Cook Islands have a strong tourism market and is one of the tourism industry leaders in the Pacific Islands region. It is estimated that the Cook Islands received 82,000 visitors in 2004 (latest available data through SPTO)[42], a large proportion of them arriving from New Zealand (40%). Humpback whales migrate past the Cook Islands on their northern migration and later in the season on their return journey south. As the Islands are fringed by only a thin reef (in particular, Rarotonga), the ocean drops quickly to substantial depth, bringing the migrating whales close to shore. As such, the whales can be seen easily from land-based locations. A national whale sanctuary has been established to protect the migrating whales.

There is little in the way of a formalised, boat-based whale watch industry (some informal viewing reportedly takes place from local fishing boats or by dive operators), but there are some initiatives on the island to promote land-based viewing. A whale education centre has been established on Rarotonga providing information to tourists and locals alike, including daily sighting locations. Furthermore, a viewing platform has been built to facilitate land-based viewing of whales.

Although the country attracts very little direct economic benefit from the land-based whale watch activities (around $10,000 per annum), there is nevertheless still an indirect benefit equally large as for those countries that conduct formal boat-based whale watching. This is calculated based on the fact that land-based whale watching provides tourists with an attraction to an area, and by 'participating', one can attribute a portion of their daily expenses to this activity (i.e. accommodation, food, etc). Therefore, the figure reported above reflects the same calculation methodology as other countries where whale watching is undertaken by boat.

Due to the more formal approach to land-based whale watching, the Cook Islands is the only Pacific Island country in this study to have whale watcher numbers counted for land-based viewing (estimated at over 3,500 land-based whale watchers in 2008[43]).

[41] AAGR from 1998 to 2008
[42] South Pacific Tourism Organisation, *Visitor Arrivals by country of residence – Cook Islands*, online at http://www.stpo.org
[43] This figure is estimated as a proportion of numbers of visitors to the whale education centre (many of whom then visit a location advised for good sighting opportunities) with allowance for additional land-based viewers using the viewing platform. Centre for Cetacean Research and Conservation, pers.comm. (May 2005)

Main species:	Large cetaceans: *humpback whale*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Land-based, infrequent boat-based
Average adult ticket price:	N/A
Estimated employment numbers:	N/A
Main whale watch season:	July to October

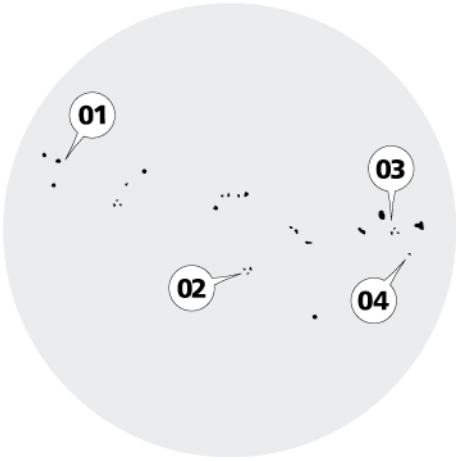
Acknowledgements:
Nan Hauser (Centre for Cetacean Research and Conservation) provided critical input to our earlier Pacific Islands Whale Watch Tourism report.

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 at an average annual growth rate of 2.4% based on UN World Tourism Organisation regional growth data.

Federated States of Micronesia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	230	N/A	~5	$10,500	$25,500	$36,000
2005	Minimal	0%	Minimal	Minimal	Minimal	Minimal
2008	Minimal	0%	Minimal	Minimal	Minimal	Minimal

01: Yap
02: Chuuk
03: Kosrae
04: Pohnpei



The Federated States of Micronesia (FSM) has a relatively small tourism industry within the region attracting around 20,000 visitors each year[44].

Operator feedback indicates that there are occasional sightings of short-finned pilot whales and spinner dolphins around the islands. However, research indicates that at this stage, no dedicated whale watching industry exists.

There is a small diving industry in the regions of Chuuk, Yap, and Kosrae and responses from dive operators indicate a low number of opportunistic whale watching activities occurs on some of these trips where cetaceans are seen.

[44] 2003 figures: SPTO, *Tourism Sector Study – Micronesia*, online at http://www.stpo.org

Main species:	Small cetaceans: *spinner dolphin, short-finned pilot whale*
Tourists:	
International	N/A
Domestic	N/A
Types of tours:	Boat-based, opportunistic (on dive trips)
Average adult ticket price:	N/A
Estimated employment numbers:	None
Main wale watch season:	Year-round

Acknowledgements:
South Pacific Tourism Organisation, FSM Tourism Board and dive operators.

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008, where we assume continued low numbers of whale watching.

Fiji

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	~1	Minimal	Minimal	Minimal
2005	Minimal	0%	Minimal	Minimal	Minimal	Minimal
2008	Minimal	0%	1	Minimal	Minimal	Minimal

★ Capital City: Suva

According to the South Pacific Tourism Organisation, Fiji has the most developed tourism market in the South Pacific. In 2004, the country attracted around 40% of the 1.1 million visitors to the South Pacific region[45]. In 2004, visitor arrivals were around 506,000[46], just less than 550,000 in 2007, with projections for 2009 at 600,000[47]. However, the county's whale watching industry is virtually non-existent.

There has in the past been an informal dolphin watching industry active in Fiji through the country's 70+ dive operators, but reports indicate that this de facto industry now attracts only low numbers with occasional sightings of small cetaceans on dive trips. Dolphin sightings do not appear frequent enough to support anything other than a low-scale, opportunistic industry and as a result there is currently no

[45] Hopkins, R, 'South Pacific – Facts and Figures of Tourism', SPTO, accessed July, 2006, available online at http://www.stpo.org
[46] ibid.
[47] Tourism Fiji, '2009 Marketing Plan', Executive Summary, accessed March 2009, available online at http://www.fijime.com

formal cetacean watching industry[48]. Feedback from an operator in early 2009 indicates that there is one small locally owned resort that takes guests to see and swim with spinner dolphins on Moon Reef, although this remains on a small scale.

Large cetaceans are seen only infrequently in waters around Fiji, with reports indicating that humpbacks were previously prevalent in local waters. Anecdotally, operators have suggested cetacean numbers have been low since the introduction of long line fishing in Fijian waters around a decade ago. This correlates with SPREP's Whale and Dolphin Action Plan that identifies dolphins taking bait from long line hooks as a serious threat to cetaceans in the region[49].

Main species:	Small cetaceans: *bottlenose dolphin, spinner dolphin*
Tourists:	
International	100%
Domestic	
Types of tours:	Boat-based, opportunistic tours, and one dedicated tour that includes swimming with dolphins
Average adult ticket price:	N/A
Estimated employment numbers:	1
Main whale watch season:	N/A

Acknowledgements:
Fiji Islands Visitors Bureau, Rob Barrel (Nai'a)

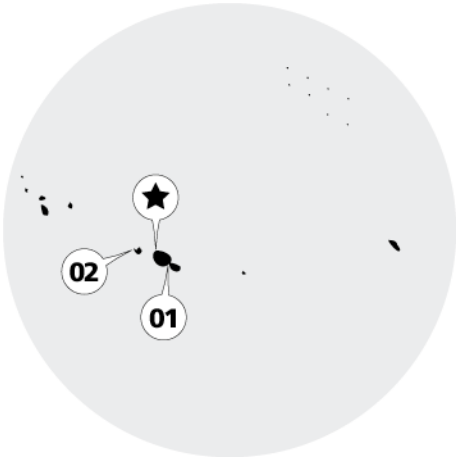
References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 with an assumed continued low rate of whale watching.

[48] University of the South Pacific, pers.comm. (April 2006) & operator feedback.
[49] SPREP, Whale and Dolphin Action Plan 2003-2007, accessed via SPREP May 2006.

French Polynesia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	~1	Minimal	Minimal	Minimal
1998	Minimal	N/A	~1	Minimal	Minimal	Minimal
2005	6,000	57.5%	12	$564,000	$750,000	$1,314,000
2008	6,442	38.4%[50]	12	$605,590	$805,306	$1,410,896

★ Capital City: Papeete
Whale Watch Locations:
01: Tahiti
02: Moorea



French Polynesia has a thriving dedicated whale watch industry that has seen a period of strong growth since 1998 of approximately 58% per year up to 2005. This is on the back of a large and mature tourism industry, with approximately 210,000 visitors in 2004[51].

The country has an annual migration of humpback whales that are said to breed in local waters, residing there between the months of July to November. Furthermore, resident spinner and bottlenose dolphins, as well as melon-headed whales, provide the basis for a small dolphin watching industry all year round. Reliable sightings of cetaceans, combined with a mature tourism industry in the country, have lead to this successful growth in recent years.

Besides this whale watching industry, there is a captive swim-with-dolphins operation that operates within a major resort on Moorea attracting several thousand tourists in 2005[52]. Dolphin watchers participating in this operation were not included in this report as this research aims to estimate whale watching of wild cetacean species in their natural environment.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *spinner dolphin, bottlenose dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Boat-based, short and multiple day trips, dedicated
Average adult ticket price:	N/A
Estimated employment numbers:	24
Main whale watch season:	July to November for whales, year-round for dolphins

[50] AAGR from 1998 to 2008
[51] Op.cit., Hopkins, R (2006)
[52] Dolphin Encounter, pers.comm. (May 2006)

Acknowledgements:
Michael Poole (Marine Mammal Research Program) provided critical input to our earlier Pacific Islands Whale Watch Tourism report.

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 at an average annual growth rate of 2.4% based on UN World Tourism Organisation regional growth data.

Guam

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	4,000	N/A	N/A	None	None	None
2005	84,000	70%	8	$5,712,000	$10,500,000	$16,212,000
2008	221,155	49.4%[53]	15	$13,048,145	$19,627,506	$32,675,651

★ Capital City: Hagåtña
Whale Watch Locations:
01: Agat Marina

Guam has one of the largest commercial cetacean watching industries in the Melanesian region of the Pacific Ocean, generating an estimated total expenditure of $32.7 million for 2008. Two or three large dolphin pods are known to inhabit the local waters, providing an accessible and reliable target for an established dolphin watching industry.

A significant proportion of local dolphin watching outfits reportedly has contractual arrangements with tour operators who bring predominantly Japanese tourists to the island. Guam is a unique island destination through its proximity to the main tourist markets of Korea and Japan and as a result, it has a near-continual tourist season all year round.

The bulk of whale watching businesses operate out of the Agat Marina, located on the southwestern side of the island, although tours also occasionally depart from the Agana Marina for excursions off the mid- to northwest coast. Most excursions run for several hours, with companies offering two or three tours per day. While some operators offer dedicated dolphin watching trips, many also combine the service with snorkelling and diving packages. An average ticket price is $59 per person.

Spinner dolphins are the only cetaceans seen regularly enough to support a commercial industry. However occasionally melon-headed, short-finned pilot, sperm and humpback whales and orcas are also reported.

Whale watching estimates for 2008 are derived from exit surveys by the Guam Visitors Bureau for Japanese and Korean tourists, who constitute the largest proportion of visitors to the island. The figures from these surveys are then combined with operator survey data. Government tourism data were not used to derive

[53] AAGR from 1998 to 2008

2005 estimates, and this fact may account for the dramatic rise in numbers since. This large figure for dolphin watching participants indicates that just under 20% of all international tourist arrivals undertake cetacean watching, which correlates to the fact that approximately 80% of all Japanese visitors undertake an optional tour whilst on the island, according to data from the Guam Visitors Bureau.

Main species:	Small cetaceans: *spinner dolphin*
Tourists:	
International	95%
Domestic	5%
Types of tours:	Short boat-based dolphin watching trips, sometimes combined with snorkelling and dive trips
Average adult ticket price:	$59
Estimated employment numbers:	225
Main whale watch season:	Year-round

Acknowledgements:
Guam Visitors Bureau

References:
Guam Visitors Bureau Exit Survey research, accessed at www.visitguam.org

Midway

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	None	N/A	None	None	None
1994	None	None	N/A	None	None	None
1998	289	N/A	1	$500,000	$43,000	$543,000
2008	Minimal	N/A	Minimal	Minimal	Minimal	Minimal

Whale Watch Locations:
01: Midway Atoll

In 1998, Midway was reported to have a small whale watching industry totaling nearly 300 tourists undertaking trips with a single operator. This developed after the atoll was opened to the public as the Midway Atoll National Wildlife Refuge (under strict permit conditions) following the closure of the Naval Air Facility Midway Island in 1993. Since then, small educational nature and historical trips have been undertaken to the atoll.

The atoll is situated within the recently declared (2006) Papahānaumokuākea Marine National Monument, the largest conservation area in the US, and the second largest highly protected MPA (marine protected area) in the world. Midway is the only part of this conservation area open to limited public access.

In 2008, research indicates around seven small trips were planned to the atoll through the NGO Oceanic Society Expeditions. These trips include dolphin watching, but are also dedicated towards the other natural elements of the atoll, particularly the bird colonies.

References:

Papahānaumokuākea Marine National Monument, http://hawaiireef.noaa.gov/about/welcome.html

Midway Atoll National Wildlife Refuge, http://www.fws.gov/midway/

New Caledonia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	1,695	61.4%	16	$107,000	$268,000	$375,000
2005	4,906	17%	18	$417,010	$614,250	$1,031,260
2008	6,222	14%[54]	24	$528,870	$778,085	$1,306,955

★ Capital City: Noumea
Whale Watch Locations:
01: Southern Lagoon

In recent years, New Caledonia has grown to become one of the South Pacific's largest whale watching countries, and that growth has continued in the three years since 2005, albeit at a slightly slower rate (8% per year since 2005, with an average rate of 14% in the ten years from 1998 to 2008). The industry is based around seasonal visits of humpback whales in the July to September period. During these months, many local sailing boat charters dedicate themselves full-time to whale watching, with 24 operators allowing viewing of cetaceans in the Southern Lagoon on peak weekends. There is also one dolphin watching operator in New Caledonia.

The country has a long-established, mature tourism industry that attracts around 100,000 visitor arrivals annually. However, interestingly, responses from operators and local researchers indicate that most whale watchers are local residents rather than international arrivals.

With the continuing growth of whale watching in such a concentrated location, there are concerns regarding the impacts on the whales due to excessive exposure to boats. Currently, there remains no regulation on whale watching, however in 2008 a code of conduct was signed by the majority of operators, boat patrols were initiated and some training was delivered to operators by NGOs.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin, spinner dolphin*
Tourists:	
International	
Domestic	Predominantly domestic
Types of tours:	Boat-based, dedicated trips
Average adult ticket price:	$94
Estimated employment numbers:	36
Main whale watch season:	July to September

[54] AAGR from 1998 to 2008

Acknowledgements:
Claire Garrigue and Aline Schaffar at Opération Cétacés and New Caledonia Tourism (South)

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW along with discussions with a local whale organisation in New Caledonia, Opération Cétacés. Large cetacean watching numbers have been updated to 2008 figures, however dolphin watching numbers remain the same as reported in 2005 due to a lack of more up to date data.

New Zealand

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1994	90,000	31%	N/A	$3,900,000	$8,600,000	$12,500,000
1998	230,000	27%	>50	$7,503,000	$41,233,000	$48,736,000
2004	425,432	11%	90	$22,477,154	$51,861,003	$72,338,157
2008	546,445	9%[55]	86	$34,058,744	$46,859,797	$80,918,541

★ Capital City: Welington

New Zealand has a large cetacean watching industry across both the North and South Islands, with visitors able to see and swim with a variety of whales and dolphins. The whale watch industry has been operating for over 20 years and is one of the more well-known and better-studied industries worldwide. It also is quickly becoming one of the largest, with nearly 550,000 whale watch tourists resulting in over $80 million in expenditure.

Since the last detailed study in 2004[56], the industry has continued to show a strong annual growth of 6.5% and bring economic benefits to many coastal communities across the country. Growth in the decade since 1998 has averaged 9%. The industry remains an important part of New Zealand's attraction for tourists, both international and domestic.

Along with the growth and benefits from the industry, a strong base of research has also been underway, particularly focused on the impact of cetacean watching on the animals being observed. Examples of this include work by Rochelle Constantine, David Lusseau, Christoph Richter, Elizabeth Slooten, Dave Lundquist, Wendy Markowitz, Tim Markowitz, Bernd Würsig and others. This pioneering research already forms a critical part of the international whale watching industry's sustainable long-term future as we continue to learn more about whale watching strategies that ensure minimal impact on the animals. Clearly, the benefits of such an outcome are mutual to both operators and whales to ensure the long term success of this industry.

[55] AAGR from 1998 to 2008
[56] Economists at Large 2005, 'The Growth of the New Zealand Whale Watching Industry: a socioeconomic assessment', a report for the International Fund for Animal Welfare.

The figures of whale watch tourists estimated in the table above need to be interpreted with care as whale watcher numbers in 2004 and 2008 include large numbers of opportunistic whale and dolphin watchers, figures omitted by some other estimates of whale and dolphin watching by other parties in recent years.

Opportunistic dolphin watching adds significantly to total whale watch numbers, particularly in Fiordland where an estimated 180,000 tourists see cetaceans incidentally as part of their general nature and scenery cruises. While not dedicated cetacean watching cruises, cetaceans feature strongly in the marketing material of many operators and government tourism resources for the region, forming an important motivation and attraction for tourists to travel to this region, and as such a small proportion of all cruise participants is included in this review, guided by the estimated likelihood of seeing cetaceans.

The New Zealand Ministry of Tourism has produced estimates for whale and dolphin watch tourism in a recent nature-based tourism report[57]. Data taken from the International Visitor Survey and Domestic Travel Survey indicate international and domestic visitors undertook 266,000 whale and dolphin watching and swimming experiences in 2006. Furthermore, a PhD candidate at Massey University, Emmanuelle Martinez, in conjunction with the New Zealand Department of Conservation offices, estimated that in 2007 there were 310,878 dedicated whale and dolphin watchers in the country.

We estimate in 2008 there were approximately 360,000 dedicated cetacean watchers in addition to 186,000 opportunistic watchers, suggesting some continuing growth in the numbers of core whale watch tourists compared with the 2007 estimate from the Massey University PhD candidate (see the methodology section for more information on this distinction and its impact on indirect expenditure).

To highlight the importance of cetaceans to New Zealand tourism, one operator explained that by changing the name of one of their boat tours to emphasise whales and dolphins explicitly, a significant surge in customer demand was experienced immediately.

Clearly, the opportunity to see cetaceans is a strong motivation for many of New Zealand's tourists.

Region	Number of whale watchers	AAGR[58]	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
North Island	147,364	5.8%	34	$11,902,600	$16,779,022	$28,681,622
South Island	399,080	6.8%	52	$22,156,145	$30,080,775	$52,236,920
Total (2008)	546,445	9%	86	$34,058,745	$46,859,797	$80,918,542
Total (1998)	230,000		>50	$7,503,000	$41,233,000	$48,736,000

Below we have included a regional breakdown of the main whale watching locations across the north and south islands of New Zealand. The data in the following sections reflect regional proportions of the above total number of whale watchers for the entire country.

[57] Ministry of Tourism, 'Tourism Sector Profile: Nature-Based Tourism, Series B3', accessed April 2008, available online at: http://www.tourismresearch.govt.nz/Data--Analysis/Tourism-Sector-Profiles/Tourist-Activity-Profiles/Nature-Based-Tourism-/

[58] AAGR from 1998 to 2008

North Island

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
2004	117,900	N/A	35	$7,009,564	$8,965,815	$15,975,379
2008	147,364	5.8%	34	$11,902,600	$16,779,022	$28,681,622

★ Capital City: Wellington
Whale Watch Locations:
01: Bay of Islands
02: Bay of Plenty
03: Hauraki Gulf

The main cetacean watching region in the North Island of New Zealand is the Bay of Islands, attracting around 65% of the North Island's total whale watch tourists and focusing predominantly on bottlenose dolphins. Several operators offer 'swim with the dolphins' experiences. Trips in the North Island are boat-based and take place all year round, with the peak season for dolphin swimming and watching being the summer months. Trips typically run for two to four hours and cost around $60-70. Other popular cetacean watching locations around the North Island are the Bay of Plenty and the Hauraki Gulf.

The main species are bottlenose and short-beaked common dolphins with occasional sightings of orcas and Bryde's whales. One operator claims to sight Bryde's whales on around 50% of trips, but undertakes trips based predominantly on dolphins.

Interestingly, the number of operators in the North Island and particularly the Bay of Islands area appears to have declined slightly since the last study in 2004. The industry in this region appears to be consolidating, with the largest operator taking over several other businesses and now accounting for approximately 50% of the industry in the North Island.

Main species:	Large cetaceans: *Bryde's whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, orca*
Tourists:	
International	85%
Domestic	15%
Types of tours:	Boat-based, typically short trips following pods of dolphins
Average adult ticket price:	$120
Estimated employment numbers:	237
Main whale watch season:	November to March

South Island

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
2004	307,532	N/A	55	$15,071,149	$48,100,948	$63,172,097
2008	399,080	6.8%	52	$22,156,145	$30,080,775	$52,236,920

Capital City: Wellington
Whale Watch Locations:
01: Kaikoura
02: Akaroa
03: Fiordland
04: Marlborough Sounds
05: Tasman Bay
06: Westland

The South Island of New Zealand supports the majority of whale watching opportunities in the country and boasts the internationally famous whale and dolphin watching locations at Kaikoura and Akaroa – an estimated 40% of total New Zealand whale watching trips occurred in these two well-known whale watching destinations in 2008.

Sperm whales and smaller cetaceans such as dusky dolphins and to a lesser extent Hector's dolphins are the main species viewed in Kaikoura by the two boat and three aircraft operators based there. This is the only location in the country with dedicated cruises that target primarily large cetaceans (sperm whales), and it attracts a significant portion of the country's whale watchers. It is also the only location in New Zealand where dedicated whale watching flights (fixed wing and helicopter) are undertaken.

Akaroa, near Christchurch, has a large dolphin watching industry based on the Hector's dolphin, one of the world's smallest dolphins and endemic to New Zealand. The industry specialises in swim with dolphin experiences.

The Fiordland region received close to 1 million visitors in 2007[59] with a key attraction for most being a cruise through the spectacular fiords. While there are few dedicated dolphin watching operations in Fiordland, the main cruise companies rely heavily on bottlenose dolphins as an important part of their marketing materials and the Department of Conservation reports that approximately ten marine mammal permits are issued for this region. Research for this report included an estimate of 180,000 opportunistic whale watchers in the Fiordland and Southland regions.

Other cetacean watching locations around the South Island include the Marlborough Sounds, Tasman Bay and Westland.

[59] Ministry of Tourism, 'New Zealand Regional Tourism Forecasts 2008-2014: Fiordland RTO', accessed November, 2008, available online at: http://www.trcnz.govt.nz/By-Region/South-Island/Fiordland-RTO-2008---2014/

Main species:	Large cetaceans: *sperm whale* Small cetaceans: *bottlenose dolphin, dusky dolphin, Hector's dolphin*
Tourists:	
International	80%
Domestic	20%
Types of tours:	Boat-based, short trips to nearby pods of dolphins and whale habitat. Kaikoura operators offer the only large cetacean viewing in NZ to view sperm whales. Aerial whale watching is also undertaken at Kaikoura.
Average adult ticket price:	$105
Estimated employment	441
Main whale watch season:	Year-round

Acknowledgements:
Special thanks to Rochelle Constantine (University of Auckland), Michael Donoghue, Andrew Baxter, and Steve Smith from the Department of Conservation, Emmanuelle Martinez (Massey University), Michael Lück (Auckland University of Technology and Journal of Tourism in Marine Environments), I-Site Visitor Centres and operators from across New Zealand including Jim Whitehorn of Dolphin Discoveries, Graeme Butler of the Tauranga Dolphin Company, Simon at South Sea Vagabond, Dolphin Encounter and Whale Watch Kaikoura.

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Niue

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	50	N/A	3	$1,500	$500	$2,000
2005	270	28%	1	$7,360	$33,750	$41,110
2008	290	19%[60]	1	$7,903	$36,239	$44,169

Capital City: Alofi

Although a small country with relatively low levels of tourism (approximately 2,558 visitor arrivals in 2004[61]), Niue has a reliable cetacean population of humpback whales and spinner dolphins that form the basis of a small industry.

The number of operators has decreased in recent years from three to one main operator who runs both dolphin and whale watching and swim-with tours in response to tourist demand, although this operator's core business is dive tourism. Whales also often pass close enough to shore that people can swim out to the whales from land or private yachts can easily access them.

The number of whale watchers in Niue has grown by an average of 19% per annum between 1998 and 2008.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *spinner dolphin*
Tourists:	
International	N/A
Domestic	
Types of tours:	boat-based, dedicated
Average adult ticket price:	$27
Estimated employment numbers:	1
Main whale watch season:	July to October for whales, year-round for dolphins

Acknowledgements:
Ian and Annie Gray of Niue Dive.

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 at an average annual growth rate of 2.4% based on UN World Tourism Organisation regional growth data.

[60] AAGR from 1998 to 2008
[61] Op.cit., Hopkins, R (2006)

Palau

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2005	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	Minimal	N/A	N/A	Minimal	Minimal	Minimal

★ Capital City: Melekeok

Despite a mature tourism industry, there is very little in the way of formal cetacean watching apart from the occasional opportunistic sighting as part of the islands' well-developed dive industry. As a result, whale watching in Palau continues to be minimal. There is one captive, swim-with-dolphin operation on the island, but this is not considered a 'wild' experience and is therefore not included within the scope of this research.

Papua New Guinea

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2005	600	17%	15	$22,500	$0	$22,500
2008	644	9.9%[62]	15	$24,159	$0	$24,159

★ Capital City: Port Moresby

Papua New Guinea (PNG) has a small niche tourism market for the eco-tourist type adventure traveler with some very high quality dive and snorkeling opportunities. It also has a diverse cetacean population including short-finned pilot whales, orcas, minke whales, spinner dolphins and bottlenose dolphins. Although there is no dedicated whale watching industry in PNG, many operators take advantage of its abundant cetacean species in an opportunistic manner on dive trips.

Visitor arrivals in 2005 were around 69,000[63]. Our research estimates a conservative figure of 644 opportunistic whale watchers in 2008 from approximately 15 operators. Most of these are dive operators across the many regions of PNG and this indicates an approximate growth rate of 10% per annum from 1998 to 2008.

The high marine biodiversity in PNG is a significant drawing card for eco-tourists. With such a rich and unique array of cetaceans, the country has the potential to further attract whale watching tourists. However, for now cetacean sightings still tend to occur on an opportunistic basis. In some areas resident pods of dolphins are reliably seen, but often the biggest barrier to attracting tourists is the difficulty and expense of accessing PNG regions.

Main species:	Large cetaceans: *minke whale* Small cetaceans: *bottlenose dolphin, orca, short-finned pilot whale, spinner dolphin*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Boat-based, multiple-day trip, dedicated
Average adult ticket price:	$37.50
Estimated employment numbers:	9
Main whale watch season:	Year-round

[62] AAGR from 1998 to 2008

[63] PNG Tourism Promotion Authority 2005, 'PNG – Short Term Visitors 2005', accessed March 2006, available online at: http://www.png.aqualagoon.com

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 at an average annual growth rate of 2.4% based on UN World Tourism Organisation regional growth data.

Samoa

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2005	725	20%	9	$18,488	$0	$18,488
2008	778	12%[64]	9	$19,851	$0	$19,851

★ Capital City: Apia

Samoa attracted in the vicinity of 99,000 tourists in 2004[65]. With a well-established tourism industry, the country's marine-based operators, such as dive and surf tour operators, take advantage of opportunities to view cetaceans when they are encountered on trips. The country is visited seasonally by humpback whales and resident spinner dolphin populations. In 2008, nine opportunistic operators were estimated to take around 800 tourists to see cetaceans, with these trips mainly focusing on small cetaceans. This is an average growth of around 12% per annum in the decade since 1998.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *spinner dolphin*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Boat-based, opportunistic
Average adult ticket price:	$25.50
Estimated employment numbers:	9
Main whale watch season:	July to October for whales, year-round for dolphins

[64] AAGR from 1998 to 2008
[65] Op.cit., Hopkins, R (2006)

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 at an average annual growth rate of 2.4% based on UN World Tourism Organisation regional growth data.

Solomon Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	1	Minimal	Minimal	Minimal
2005	500	14%	6	$36,250	$0	$36,250
2008	537	8%[66]	6	$38,923	$0	$38,923

★ Capital City: Honiara

Like Papua New Guinea, the Solomon Islands is a region rich in cetacean diversity and acts as an important migratory corridor as well as a permanent habitat for both small and large cetaceans. Although there are no dedicated whale watching operators in the country, some dive operators view cetaceans opportunistically on their trips with reasonably high sighting rates (up to 75% of trips).

It is estimated that in 2008, there were over 500 opportunistic whale watchers – approximately 8% annual growth since 1998[67]. Certain small cetacean species are abundant and traditional dolphin hunts still occur in certain parts of the Solomons, with dolphin teeth traded as a substitute currency.

The country has had low visitation rates in recent years (around 6,000 in 2004, compared to pre-1999 levels of up to 16,000[68]), largely as a result of civil unrest and political instability.

Main species:	Small cetaceans: *Indo-Pacific bottlenose dolphin, short-beaked common dolphin, false killer whale, melon-headed whale, orca, Risso's dolphin, spinner dolphin*
Tourists:	
International	
Domestic	
Types of tours:	Boat-based, opportunistic
Average adult ticket price:	$72.50
Estimated employment numbers:	6
Main whale watch season:	Year-round for dolphins, various for whales

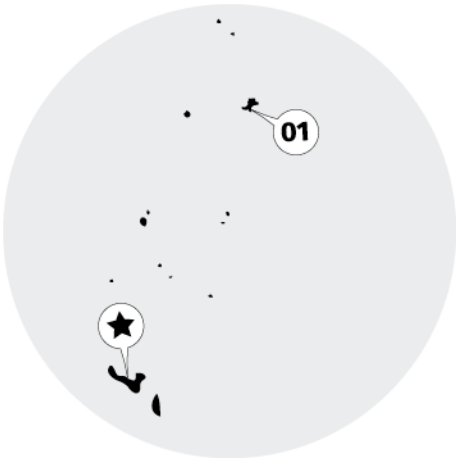
[66] AAGR from 1998 to 2008
[67] Based on estimates of 250 whale watchers in 1998.
[68] SPTO, 'Tourism Sector Study – Solomons', accessed June 2006, available online at: www.spto.org

References:
Research for this country was taken from the Pacific Islands Whale Watch Tourism report undertaken by Economists at Large for IFAW. 2005 data from that report have been projected forward to 2008 at an average annual growth rate of 2.4% based on UN World Tourism Organisation regional growth data.

Tonga

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	200	N/A	N/A	$10,000	$25,000	$35,000
1998	2,334	85%	5+	$55,000	$367,000	$422,000
2006	9,804	20%	14	$749,959	$1,130,418	$1,893,052
2008	9,804	15.4%[69]	14	$980,400	$1,130,418	$2,110,818

★ Capital City: Nuku'alofa
Whale Watch Locations:
01: Vava'u



Whale watching continues to contribute strongly to the Kingdom of Tonga's economy, with whales an iconic species for the tourism industry. In 2008, there were more than 9,800 whale watch participants in Tonga, representing average annual growth of 15% since 1998, with a large majority of these whale watchers undertaking trips in the northern islands of Vava'u. The lack of change between 2006 and 2008 reflects the lack of growth in vessel capacity and license holders in Tonga. As was identified in the previous report (see reference below), capacity is close to being reached in whale watching in Tonga, particularly at Vava'u, and particularly in terms of number of boats relative to the number of whales encountered. This is the main reason that no new operator licenses have been distributed.

It should be recognized that the figure of 9,800 whale watchers above is made up of only about 3,200 whale watch tourists across the country. In Tonga, as in only the minority of whale watching locations in the world, many of the tourists undertake multiple whale watch trips on their visit to the islands, with some undertaking up to 5 trips during their stay. As such, the figure represents the number of trips rather than the number of tourists. This is consistent with the methodology of this report; see the methodology section above for more detail on this.

Whale watchers in Tonga generated a total estimated expenditure of approximately $2.1 million in 2008. Direct expenditure figures have grown slightly since our previous report due to the fact (highlighted in the last report) that ticket prices have been slowly increasing in Vava'u. Indirect expenditures are assumed to have remained reasonably constant.

Humpback whales migrate from Antarctica to Tonga annually, remaining from the end of July until the end of October in the protected, warm waters to reproduce. As a result, a strong boat-based whale watching industry has grown from Vava'u to take tourists to view the humpbacks. The recent years have seen the

[69] AAGR from 1998 to 2008

industry expand from the first operators in the early 1990s to a point where there are approximately 14 licensed operators undertaking tours in Tongatapu, 'Eua, Ha'apai and Vava'u. Vava'u accounts for the majority of the industry, including ten of the 14 licensed operators in 2008.

As the industry has grown, it has matured and now includes a representative industry association, the Tongan Whale Watch Operators Association (TWWOA), which has seven members (representing around half of the industry, and approximately 75% of the whale watch episodes in 2006) as well as a marine awareness and education centre in Vava'u, which is managed by a local IFAW representative. Further formalisation of the industry has come through government-administered regulations regarding licensing and the development of whale watching guidelines. The guidelines were first implemented voluntarily and there was broad stakeholder (government, operator and NGO) input into their development, trial and evaluation in the late 1990s. The whale watching guidelines have recently been passed as legislation.

An element of the industry in Tonga that is uncommon in whale watch operations globally is the ability to swim with the whales, which is permitted as part of whale watch license conditions. This occurs in very few places globally, but a majority of the operators in Tonga offer it as part of their tour. One licensed operator explicitly states that it does not swim with whales. Most other operators report that they do not guarantee 'swim-with whale' experiences, but they do offer the possibility.

Main species:	Large cetaceans: *humpback whale*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Boat-based, half-day and multiple-day trip, dedicated.
Average adult ticket price:	$100
Estimated employment numbers:	28
Main whale watch season:	July to November

Acknowledgements:
Tongan Visitors Bureau, Allan Bowe, President of the Tongan Whale Watch Operators Association and other operators

References:
Economists at Large 2008, 'Whale Watching Tourism in the Kingdom of Tonga', a report for IFAW and Opérations Cétacés.

North America

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	3,430,225	N/A	3	$46,230,000	$179,045,000	$225,275,000
1994	4,074,195	7.9%	4	$65,791,000	$227,606,000	$293,397,000
1998	5,500,654	7.8%	4	$194,575,000	$399,692,000	$594,267,000
2008	6,256,277	1.3%	4	$566,200,198	$626,352,749	$1,192,552,947

All countries on the continent of North America are involved in whale watching with some of the most mature and long established whale watching communities – a history of over 50 years. In 2008, North America continues to be the largest whale watching region in the world, with two countries accounting for over 1 million whale watchers - the US taking nearly 5 million and Canada over 1 million.

The cetacean watching industry across the continent is a major generator of economic activity, being responsible for total expenditure of over $1 billion in 2008. This is a significant figure, particularly when considered that the entire global value of whale watch expenditure in 1998 was $1 billion.

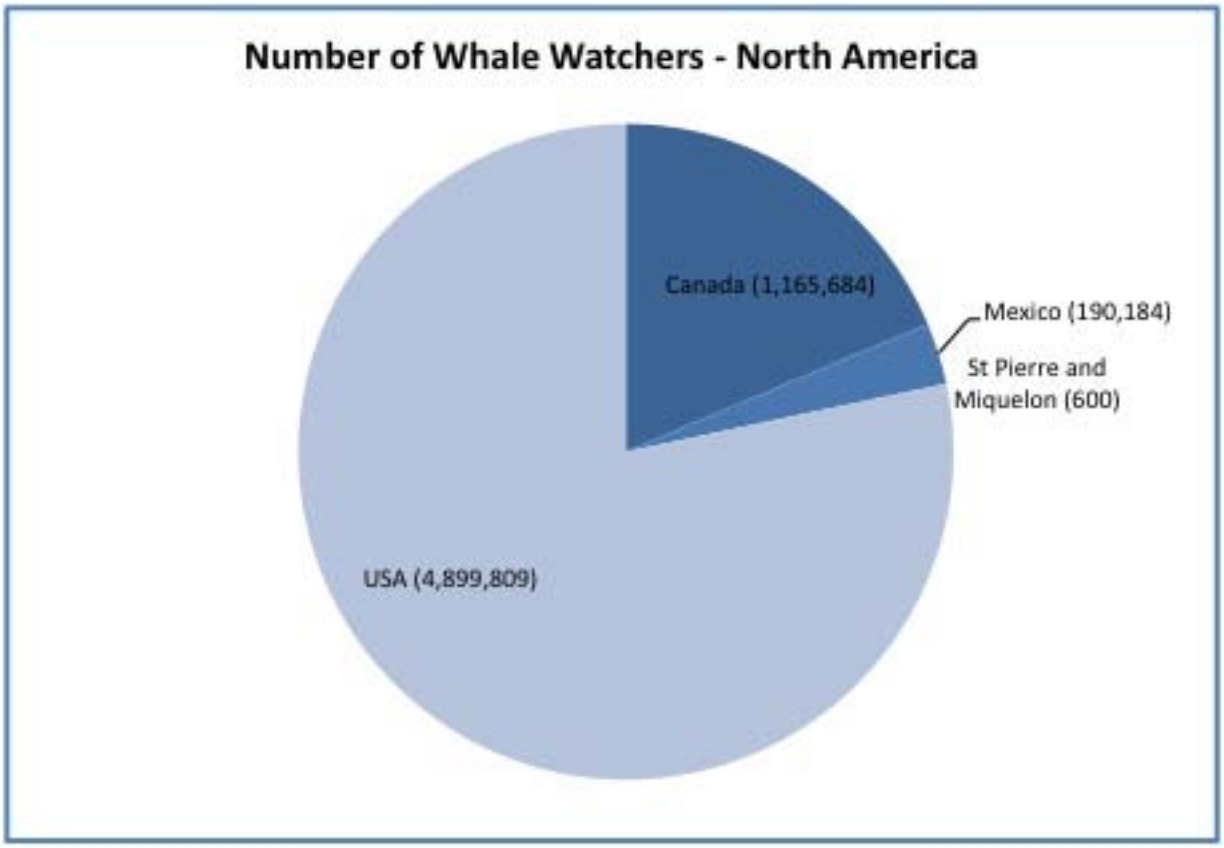
In 1998, North America accounted for 60% of the globe's whale watchers, which has dropped to approximately 50% in 2008, mainly as a result of the ever growing whale watching indsutries in many other parts of the world. However, some of the long established whale watching communities in North America are showing very slow or no growth over the last decade, explained by a number of factors in the country summaries below.

The following section outlines detailed descriptions of the whale watching industry across the four countries and territories in North America, this largest and oldest of whale watching regions.

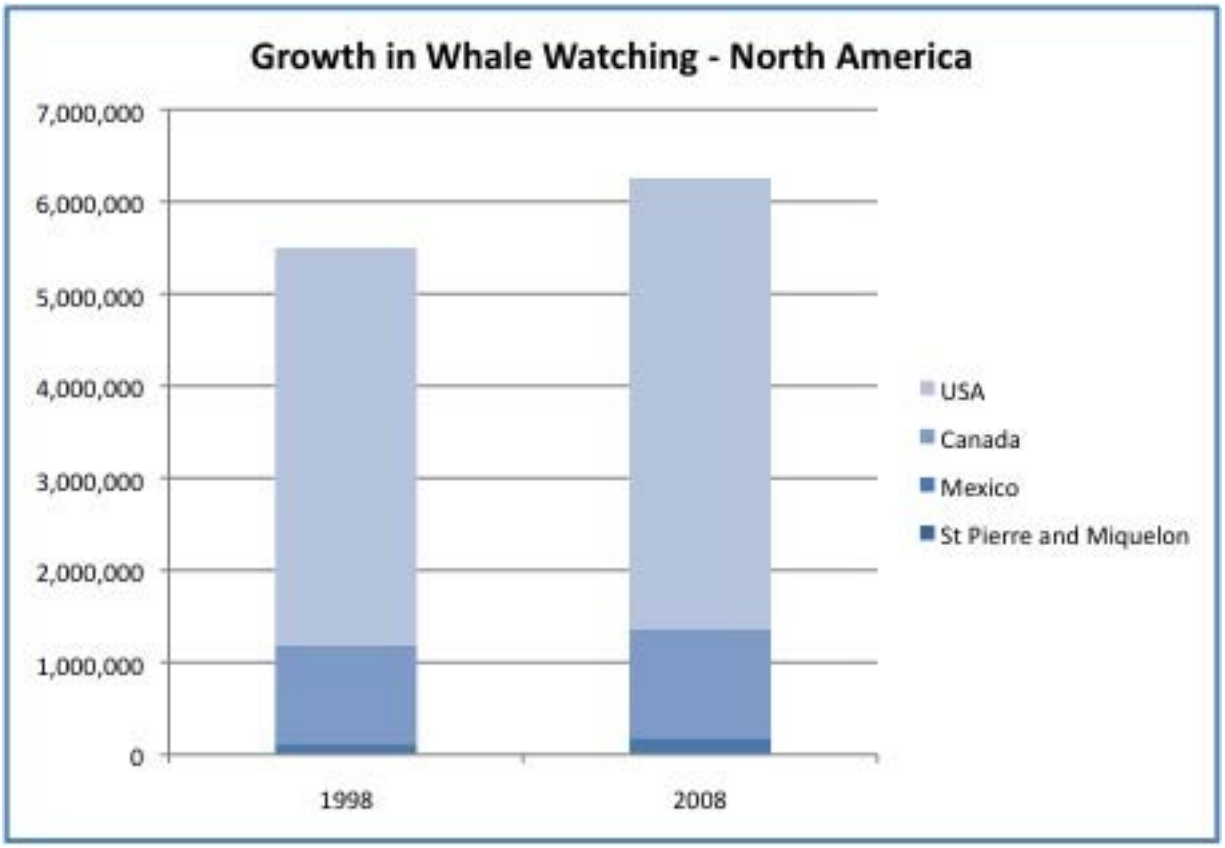
Summary of country results

Country	Number of whale watchers		Growth between 1998 and 2008
	1998	2008	AAGR
Canada	1,075,304	1,165,684	0.8%
México	108,206	190,184[70]	5.8%
St. Pierre and Miquelon	607	600	0%
USA	4,316,537	4,899,809	1.3%
REGIONAL TOTAL	5,500,654	6,256,277	1.3%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.



[70] Projected from 2006 year data in Hoyt and Iñíguez, 2008.


Growth in Whale Watching - North America
7,000,000
6,000,000
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4,000,000
3,000,000
2,000,000
1,000,000
0
1998
2008
USA
Canada
Mexico
St Pierre and Miquelon

Canada

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	185,200	N/A	N/A	$5,724,000	$23,421,000	$29,145,000
1994	462,000	35.6%	N/A	$14,154,000	$50,085,000	$64,239,000
1998	1,075,304	23.5%	237	$27,438,000	$168,077,000	$195,515,000
2008	1,165,684	0.8%	206	$48,420,000	$101,946,000	$150,366,000

★ Capital City: Ottawa

Canada has one of the world's largest whale watching industries, with activities on both Atlantic and Pacific coasts, as well as the country's Arctic regions. The industry has shown only moderate growth since 1998, remaining at a reasonably consistent level in terms of both numbers and revenues. As whale watching expands across the globe, there is more competition between whale watching locations. Some mature areas are consolidating their position, while others face more competition as their whale watching seems less unique than it did ten years ago. These trends are evident in various locations around Canada.

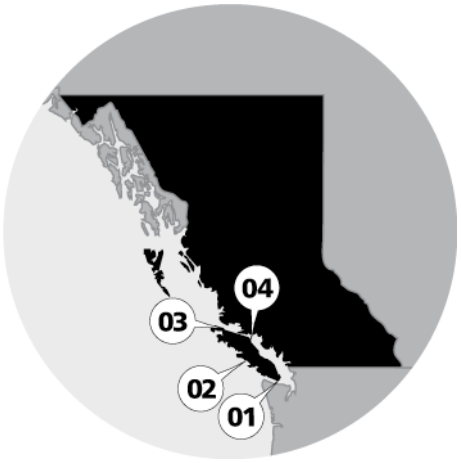
Five main regions have been assessed in this report and combined they show a picture of a mature whale watching industry that has been a well established part of the country's tourism attraction for many years.

Below we have included a regional breakdown of the main whale watching locations across Canada. The data in the following sections reflect regional proportions of the above total number of whale watchers for the entire country.

British Columbia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	285,000	N/A	47	$9,102,000	$60,027,000	$69,129,000
2008	430,600	4.2%	47	$27,105,800	$91,070,200	$118,176,000

Whale Watch Locations:
01: Victoria
02: Long Beach
03: Telegraph Cove
04: Campbell River



British Columbia has a large, established whale watching industry, which has grown approximately 4.2% per year since 1998. The main on-shore service centre is Victoria on Vancouver Island, which accounts for 70% of whale watch departures in British Colombia. There are also well-established operations around the rest of Vancouver Island, particularly around Campbell River, the Telegraph Cove-northeast Vancouver Island area, and the Tofino-Ucluelet area on the west coast of Vancouver Island. There are also tours offered from the Vancouver mainland.

The industry is focused on orcas, which are sighted year-round, though less often in winter. Resident populations of Dall's and harbour porpoises and Pacific white-sided dolphins are also sighted fairly regularly, while a highlight of seasonal whale watching is the migrating gray whales. Up to 22,000 gray whales pass through the region between March and May. Minke whales are also a feature of the summer season. Humpback whales are also seen increasingly especially off northern Vancouver Island.

The majority of the trips in British Colombia are boat-based day or half-day trips viewing gray whales in season (peak migration in March to April, along with summer residents), minke and humpbacks in northern summer and orcas and smaller cetaceans at other times (best seen in April to September, but are present year round). Many of these tours feature guides and educational content. More than 80% of estimated participants go for whale watching in the Canadian US transboundary waters of Haro Strait, with departures not only from Victoria, but also from Richmond (mainland) and Cowichan Bay (north of Victoria). Live-aboard trips, sometimes in excess of a week are also offered, following the Pacific Coast, sometimes continuing up to Alaska. These live-aboard trips can cost thousands of dollars and their contribution to direct expenditure has been calculated depending on the extent to which whales and dolphins feature in promotional material and trip itineraries, typically around 10%.

Land-based whale watching is also popular along the west coast of Vancouver Island on the Long Beach area, from the Pacific Rim Trail or Radar Hill, just south of Tofino. The annual northward migration of gray whales through the Pacific Rim National Park begins in late February and continues until the end of May. The communities of Tofino, Ucluelet and the Pacific Rim National Park hold the Pacific Rim Whale festival between 14th and 22nd March annually. The festival has family events such as the 'Tug-O-Whale' and the 'Annual Chowder Chowdown', as well as lectures and, of course, whale watching. The gray whale migration is estimated to attract up to 90,000 land-based whale watchers to the region annually.

Like other areas in Canada and elsewhere with large, long-running whale watch industries, concerns have been raised about the impact of whale watching on whales themselves. Disturbance by vessels, along with

food shortages and water pollution, could be placing the sustainability of the industry at risk. While industry standards are in place through the 'Be Whale Wise' programme, and commercial boats are generally aware of and follow the guidelines, recreational boat owners are not as well informed, and increasing education amongst these boat owners about wildlife viewing etiquette remains a priority. (Ford et al., 2000 and Trites & Bain, 2000).

Main species:	Large cetaceans: *humpback whale, gray whale, minke whale* Small cetaceans: *Pacific white-sided dolphin, Dall's porpoise, harbour porpoise, orca*
Tourists:	
International	60%
Domestic	40%
Types of tours:	Mainly boat-based half-day trips. Multiple-day whale watching and nature cruises are also a significant part of the market
Average adult ticket price:	$114
Estimated employment numbers:	200
Main whale watch season:	April to October

Acknowledgements:
Northwest Whale Watchers Association, Fisheries and Oceans Canada (DFO), Adam Hellicar, Alan McGillvray, Cedric Towers, Tourism Vancouver, Tourism BC and all the whale watch operators that responded to the survey

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North Western Whale Watchers Association, www.nwwhalewatchers.org

Pacific Rim Whale Festival, www.pacificrimwhalefestival.org

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Québec

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	505,000	N/A	75	$10,251,000	$66,684,000	$76,935,000
2008	567,161	1.12%	56	$19,510,214	$61,340,253	$80,850,467

Whale Watch Locations:
01: St. Lawrence River Estuary
02: Saguenay Fjord

Québec has the largest whale watching industry in Canada, based in the St. Lawrence River Estuary and Gulf, where harbour porpoises, minke, fin, humpback, and blue whales are regular visitors between May and October. Sperm whales are also seen occasionally. Other species are mostly observed in the Gulf of St. Lawrence and rarely in the Estuary – these include long-finned pilot whales and Atlantic white-sided dolphins as well as rare sightings of orcas and the endangered North Atlantic right whale. The threatened St. Lawrence Beluga whale is a year-round resident of the Estuary, but is rarely targeted by operators due to strict regulations.

The industry has grown slowly since 1998; some observers suggest it may in fact have contracted in the last few years. The decline in operator numbers in the figures above reflects different definitions of whale watch operator rather than a particular decline in offerings to tourists. Some consolidation of the industry has occurred, with larger companies buying some smaller operators.

The majority of dedicated whale watching in Québec takes place around the mouth of the Saguenay Fjord, near the town of Tadoussac. Multiple ports of departure, proximity to urban centres, spectacular scenery and whales being close to shore have made the area one of the most popular whale watching locations in the world. The core whale watching area is covered by the Saguenay-St. Lawrence Marine Park (1245 km^2), administered jointly by Parks Canada and Parcs Québec.

A detailed Parks Canada estimate from 2005 suggests that over 274,000 people take part in commercial, motorized, boat-based whale watching in the Saguenay-St. Lawrence Marine Park. Other whale watchers are onboard private pleasure craft (13,200), cruise ships (132,194) and kayakers (over 45,000). A further 60,000 people took part in land-based whale watching at various locations around the park, including interpretive sessions at the Marine Discovery Centre. Studies undertaken by Parks Canada suggest that land-based whale watchers usually spend several days in the marine park and surrounding areas, going to different locations and taking part in multiple activities. While fees are associated with some land-based viewing facilities, this is included as indirect expenditure in our calculations rather than direct expenditure.

Boat-based whale watchers tend to come on day or overnight trips from Québec City or other major cities, leading one Québec whale watch observer to describe the local industry as 'the fast food of whale watching'. Tadoussac industry insiders refute this, claiming that great efforts have been made to enhance the quality of whale watching in the Marine Park and surrounding area. Tourists are staying longer; 40% are still day trippers, but the remaining 60% spend an average of 3.2 nights in the area. A Parks Canada representative felt it was time to put aside the 'fast food of whale watching' label 'because it does not reflect the new reality which has moved towards more of a "slow food" approach, with higher quality and more time spent in the area even if there are still day-trippers'.

Regardless of its pace, the industry has long since passed the 'one million served' mark and continues to make a significant contribution to the local economy. Like popular whale watching locations the world over, concerns are often raised about the effects of whale watching vessels on whales. Parks Canada shares these concerns and works to enforce regulations and ensure the sustainability of the industry in the Saguenay-St. Lawrence Marine Park. Since 1994, Parks Canada is involved in monitoring of the whale watching activity in the Marine Park along with operators and a local non-profit organisation.

Whale watching can be found in several other locations around the Gulf of St. Lawrence, particularly on the North Shore. Around 25,000 whale watchers per year visit the Mingan region. Many of these are on trips run by a local research group to help fund their research activities. Visitors can even play a more active part in these research activities with opportunities to participate over full-day, week or two-week periods.

On the South Shore of the Gulf of St. Lawrence, around 15,000 people go boat-based whale watching off Gaspé with three operators, targeting blue and humpback whales.

Main species:	Large ceteaceans: *blue whale, fin whale, humpback whale, minke whale* Small cetaceans: *Atlantic white-sided dolphin, beluga whale, harbour porpoise, white-beaked dolphin*
Tourists:	
International	20%
Domestic	80%
Types of tours:	3-hour, half-day and full-day boat-based trips. Significant land-based opportunities, with telescopes, naturalists and lookouts with cover
Average adult ticket price:	$50
Estimated employment numbers:	2,000
Main whale watch season:	May to October

Acknowledgements:
Thank you to Nadia Ménard and Valérie Busque at Saguenay–St. Lawrence Marine Park (Parks Canada), Robert Michaud and Véronik de la Chenelière at GREMM, Richard Sears at Mingan Island Cetacean Study and 7 operators.

Nova Scotia and New Brunswick

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	140,000	N/A	57	$3,658,000	$22,774,000	$26,432,000
2008	135,000	-0.4%	43	$3,524,026	$15,551,123	$19,075,149

Whale Watch Locations:
01: Bay of Fundy
02: Halifax
03: Cape Breton

Nova Scotia and New Brunswick have large, established whale watching industries that have maintained their size over the last ten years. Operators and industry watchers suggest that 2005 and 2006 were busy years, while 2007 and 2008 have been relatively quiet due to higher fuel prices and a slight decline in wider tourism.

The industry is focused on three main areas: the Bay of Fundy, the area around Halifax, and Cape Breton. In spring, fin and minke whales and harbour porpoises are seen first, followed by Atlantic white-sided dolphins and humpback whales that migrate to the area in June and remain until autumn. Whale watchers are always keen to see the endangered North Atlantic right whale, as fewer than 400 remain.

As in other established whale watch areas, the number of operators has declined as businesses have consolidated or specialised in other tours such as bird watching, for example puffin-focused tours. Operations are often family-run, using one or two boats with the capacity for 20 – 50 passengers. Some vessels are spectacular, historic yachts reflecting the maritime history of the area, while other operators use inflatable boats for exciting trips around sea cliffs and water-level viewing of whales. Kayaking and hiking companies also promote their businesses with the chance of seeing whales.

Trips are usually from 90 minutes to four hours, with operators offering up to five trips per day in the peak summer season. Most operators place an emphasis on informing guests about the whales, usually with naturalists on board. Some operators in the Bay of Fundy assist research organisations to better understand the cetaceans of the area, particularly the North Atlantic right whale.

Around 75% of whale watchers are from Canada, although this varies greatly within the region. On Campobello Island, New Brunswick, most tourists are from the USA, as the island is connected by bridge only to mainland USA and not to Canada. Some operators emphasise the cheaper Canadian dollar to attract customers from the USA.

Main species:	Large cetaceans: *fin whale, humpback whale, minke whale, North Atlantic right whale* Small cetaceans: *harbour porpoise, long-finned pilot whale, Atlantic white-sided dolphin*
Tourists:	
International	25%
Domestic	75%

Types of tours:	A range of boat-based options including yachts, inflatables, larger and smaller vessels.
Average adult ticket price:	$37
Estimated employment numbers:	175
Main whale watch season:	June to September

Acknowledgements:
Sarah Haney and Jerry Conway at Canadian Whale Institute, Laurie Murison at Grand Manan Whale and Sea Bird Research Station, several operators.

Newfoundland and Labrador

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	137,604	N/A	48	$3,159,000	$16,778,000	$19,937,000
2008	138,000	0%	35	$2,507,000	$14,262,000	$16,769,000

Whale Watch Locations:
01: St. John's
02: Avalon Peninsula

Newfoundland and Labrador host considerable whale watching activity, which has been at a steady level since 1998. Land-based whale watching is a large part of whale watcher numbers, with whales visible from many of the major tourist landmarks. The number of land-based whale watchers has been estimated at 75,000, based on estimates from a local land-based tourism operator.

Commercial, boat-based whale watching is centred on the Avalon Peninsula, particularly Witless Bay and the capital, St. John's. Most operators are on the island of Newfoundland, with one small operator and other opportunistic watching on Labrador.

Whales are a major drawing card for tourism to Newfoundland, featuring heavily in promotional material and on the official tourism website. Few operators run dedicated whale watching tours, but many incorporate cetaceans into tours of the natural scenery, iceberg exploration, and puffin and other seabird watching. Operators generally run boat tours from May to September. The tours focus initially on icebergs and seabirds in May. Humpback, minke and fin whales migrate into the area in early June and stay until mid-September. Smaller cetaceans, mainly Atlantic white-sided dolphins, are seen from late July to late September.

Most operators are small businesses, often family owned, operating one or two boats, with capacity for 20-30 passengers. Some larger operators are based in St. John's and Witless Bay, while several businesses are also offering tours in inflatable boats. Boat cruises and inflatable trips run for between one and four hours. Sea kayaking and hiking trips offer more perspectives on the abundant cetacean life in the area.

Like some other long-running, mature whale watch areas worldwide, Newfoundland had seen a plateau in the number whale watchers, and a slight decrease in the numbers of operators, as companies have consolidated or specialised in other niche areas such as icebergs and bird watching.

Most whale watchers in Newfoundland are international tourists, with some operators reporting up to half their visitors being from outside Canada. This is unusual for developed countries, where domestic visitors often make up a large proportion of whale watchers. This anomaly is perhaps due to Newfoundland's isolation from major Canadian population centres.

Main species:	Large Cetaceans: *fin whale, humpback whale, minke whale* Small Cetaceans: *Atlantic white-sided dolphin, harbour porpoise, orca*
Tourists:	
International	35%
Domestic	65%
Types of tours:	Boat-based trips, mainly trips for 1-4 hours. Longer kayaking and hiking trips that encounter whales are also available.
Average adult ticket price:	$37
Estimated employment numbers:	150
Main whale watch season:	June to September

Acknowledgements:
Thanks to several operators.

Canadian Arctic - Manitoba, Nunavut and Baffin Island

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	6,700	N/A	10	$1,268,000	$1,814,000	$3,082,000
2008	4,800	-3.3%	28	$2,921,000	$1,068,000	$3,989,000

Whale Watch Locations:
01: Churchill, Manitoba
02: Pond Inlet, Nunavut
03: Baffin Island

A range of tour operators offers trips that encounter cetaceans over this vast area. Trips range from locally organised, informal boat trips, to fully-catered, multi-day trips including helicopter flights. These trips vary in terms of dedication to whale watching and only broad estimates have been possible from survey responses and operators' promotional material. The most concentrated cetacean watching occurs in Manitoba, with various other locations around the Arctic.

Churchill, Manitoba, on the shores of Hudson Bay, is primarily known as a place to watch polar bears; however, it is also the summer home of a large population of belugas. Two operators offer boat tours to see and listen to belugas through hydrophones. Particularly enthusiastic beluga watchers can even don dry suits and snorkel with the animals in the icy waters. Basic tickets cost around $70 while snorkelling with belugas costs around $116.

Churchill operators are small, family-run businesses, often with other nature tour options within their business. One main operator has a 30-passenger vessel, while smaller craft such as inflatables and kayaks are also used. Other opportunities for beluga watching can be found in various parts of the territory of Nunavut much farther north.

Several operators have begun offering exciting guided trips to northern Baffin Island to watch narwhals, the 'unicorns of the sea'. Male narwhals have a long tusk, actually an incisor, projecting from their jaws, which can be up to three meters long. The trips also encounter seals and occasionally orcas and bowhead whales. Tickets cost over $6000 without airfares. Narwhal trips are mainly based out of Pond Inlet, Nunavut.

Main species:	Large cetaceans: *bowhead whale* Small cetaceans: *beluga, narwhal*
Tourists:	
International	30%
Domestic	70%
Types of tours:	Boat-based trips, kayaking and swim-with belugas. Some land-based opportunities around Churchill. Around the other areas of the Arctic a range of tours exist from canoe to helicopter trips.
Average adult ticket price:	$70 (For basic boat-based trips in Churchill)
Estimated employment numbers:	40
Main whale watch season:	June to September

Acknowledgements:
Thanks to the operators and Nunavut tourism.

México

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	2,000	N/A	N/A	$3,000,000	$200,000	$3,200,000
1994	12,000	81.7%	N/A	$10,000,000	$5,000,000	$15,000,000
1998	108,206	73.3%	N/A	$8,736,000	$32,902,000	$41,638,000
2006	169,904	5.8%	206	$9,077,843	$76,401,220	$85,479,063

★ Capital City: Mexico City
Whale Watch Locations:
01: Baja California
02: Yucatán peninsula
03: Puerto Vallarta and Bahía de Banderas

Whale watching in México began with American cruise ships in the 1970s, while more locally based operations began in the late 1980s, bringing economic benefits to local operators. Since then the local industry has grown strongly and operators are now spread around the Baja peninsula (Baja California), the mainland west coast and also the Yucatán peninsula on the Caribbean coast. Operators vary from small boats (pangas), which can be hired locally, to large live-aboard vessels.

Baja remains México's most important whale watching region, accounting for 85% of the country's whale watchers. Visitors come to see gray whales, which mate and calve in the lagoons of the peninsula. On the

mainland Pacific coast around Puerto Vallarta and Bahía de Banderas operators target humpback whales, bottlenose dolphins, pantropical spotted dolphins, spinner dolphins, and false killer whales.

On the Yucatán peninsula dolphin watching is mainly opportunistic. Participants in whale shark tours often encounter bottlenose dolphins.

As México's whale watching has been established for over twenty years, many high quality operations have developed. Guidelines and regulations exist in many of the main whale watching areas with some level of enforcement. However, there is a substantial amount of casual, unreported whale watching outside the main ports. The unit price for these trips is lower and trips do not include naturalists or guides. Research in México suggests that many tourists would be willing to pay more if higher quality trips were available.

The whale watch communities in México run several whale-focused events, such as the Festival Internacional de la Ballena Gris (International Festival of the Gray Whale) in late February in Puerto San Carlos on Magdalena Bay in southern Baja. Other festivals are at nearby Puerto Adolfo López Mateos in Estero Soledad held every January and in April a festival celebrating the end of the whale watch season is held at Laguna San Ignacio.

All in all, this is a country with a substantial whale watching industry. Estimates for 2008 numbers based on past rates of growth suggest the industry accounts for total expenditure of nearly $100 million from over 190,000 whale watchers. Recent reports from local in-country researchers indicate that actual growth to 2008 well surpassed even this projected level, with the country having witnessed exceptionally strong growth in the last two years. Additional research is reportedly in process to ascertain the exact total figures.

Main species:	Large cetaceans: *blue whale, Bryde's whale, fin whale, gray whale, humpback whale, minke whale* Small cetaceans: *bottlenose dolphin, short-beaked common dolphin, long-beaked common dolphin, false killer whale, pantropical spotted dolphin, spinner dolphin*
Tourists:	
International	70-75%
Domestic	25-30%
Types of tours:	Cruise ships, local boat-based trips and land-based watching.
Average adult ticket price:	$53
Estimated employment numbers:	412
Main whale watch season:	December to March

Acknowledgements:
Thanks to José Antonio Casis and Marisol Rivera Planter.

References:
This is a summary from the 2008 report by Hoyt and Iñíguez (below), for more details, please refer to this report. Projections for 2008 are based on past rates of growth taken from the 2008 report:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

St. Pierre and Miquelon

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	195	N/A	1	None	None	None
1998	607	N/A	1	$16,400	$77,600	$94,000
2008	600	N/A	1	$29,880	$62,700	$92,580

★ Capital City: Saint-Pierre

St. Pierre and Miquelon are two small islands south of Newfoundland, Canada. They are a territory of France, a remnant of France's New World empire. They are important for the fishing rights they confer to France in the western North Atlantic, and some whale watching is also conducted. According to the one operator there has been little change in numbers of whale watchers over the last ten years.

Nature cruises that feature whale and dolphin watching, bird watching and highlighting points of geological interest on the islands are run out of the yacht club. The cruises use 12 passenger inflatable boats for short trips around the islands. Trips depart most days during the warmer months and target humpback and minke whales and Atlantic white-sided dolphins.

Main species:	Large cetaceans: *humpback whale, minke whale* Small cetaceans: *Atlantic white-sided dolphin*
Tourists:	
International	60%
Domestic	40%
Types of tours:	Short boat-based trips
Average adult ticket price:	$53
Estimated employment numbers:	1
Main whale watch season:	June to September

Acknowledgements:
Thanks to Thierry Vogenstahl and Emmanuel Chaigne.

USA

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	3,243,025	N/A	145	$37,506,000	$155,424,000	$192,930,000
1994	3,600,000	3.5%	220	$41,632,000	$172,520,000	$214,152,000
1998	4,316,537	4.6%	268	$158,385,000	$198,635,000	$357,020,000
2008	4,899,809	1.3%	459	$508,672,475	$447,942,829	$956,615,304

★ Capital City: Washington, DC

The United States remains the largest whale watching industry in the world, with nearly 5 million whale watchers and total expenditure of nearly $1 billion in 2008. Many parts of the USA have reached maturity – as predicted in the Whale Watching 2001 report (Hoyt, 2001) – and have shown minimal growth, or even declines. However, growth in Alaska, Florida and the Gulf States has expanded the industry as a whole since 1998.

The following sections describe whale watching in the different regions across the USA.

Alaska

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	76,700	N/A	66	$89,100,000	$33,550,000	$122,650,000
2008	519,000	21%	60	$410,000,000	$55,000,000	$465,000,000

Whale Watch Locations:
01: Inside Passage
02: Juneau
03: Gustavus
04: Homer
05: Kodiak Island

Alaska is one of the premier locations for whale watching in the United States, with humpback whale and orca populations drawing the greatest tourist focus. Whale watchers can also view minke whales, Pacific white-sided dolphins, Dall's porpoises and gray whales. The whale watching offerings in this part of the US are diverse, with the large growth in numbers being made up of cruise ship participants, multi-day nature cruise participants, and small-scale dedicated whale watchers.

The southeast region of Alaska is both the state's most visited area and its whale watching hub, centred around the northernmost limits of the famous Inside Passage – a series of protected waterways that stretch south into Canada and connect right down to Washington. Humpback whales feed in the northern part of the Passage from May to September, and are often seen breaching. As these whales remain in the same areas for 15 weeks or more (in particular Glacier Bay and the Icy strait), whale watching operators in this region are able to offer tours from May to September. Operators often guarantee whale sightings and offer refunds if no whales are sighted. More than 45 operators offer a variety of trips in this area, ranging from dedicated whale watching operations to sea kayaking tours. Whale watching departs from Juneau and Gustavus at the northern end of the Passage, where most trips are half-day in length.

Farther down the passage, around Ketchikan, Petersburg and Sitka, there are fewer operators in total, but a greater proportion of multi-day trips. These trips are usually nature cruises, less dedicated to whale watching alone, although cetaceans are still an attraction heavily emphasised in marketing.

The central south region of Alaska also has notable whale watching around Homer, Seward and Kenai. Whale watching here is more opportunistic than dedicated. Operators focus on a range of migratory species as one aspect of broader wildlife and sea kayaking tours.

The western coastal region of Alaska (southwest of Anchorage) draws considerably fewer visitors than either of the other regions (3% of total visitors compared to 70% and 56% of total tourists respectively). Whale watching represents only a small proportion of wildlife tourism in the region, as it is based on gray whales migrating past on the way to other areas. There are three operators located on Kodiak Island that offer whale watching alongside other wildlife viewing, particularly bears. Despite this, the local Whale Fest is one of Kodiak Island's main festivals, and has been running annually since 1997. The festival features educational lectures on whales and indigenous culture, films, music and whale watching.

Cruise ship tourism represents a considerable portion of Alaskan tourist volume at 61% of all visitors in the summer of 2008. As the vast majority of cruises passing through the southeast frequently sight whales,

there is an element of opportunistic whale watching that is not captured in this analysis. However, as many cruise ships offer whale watching either as part of the cruise, or the opportunity to go with local operators while in port, this more dedicated whale watching has been estimated on the basis of a proportion of all cruise ship visitors. Research indicates that of cruise ship visitors, over 60% on average include wildlife watching as a part of their trips. Estimates for this report, in keeping with Hoyt 2001, attribute approximately 10% of cruise ship participants to whale watching.

Throughout Alaska, but particularly around the whale watching hubs of Juneau and Gustavus, whale watching tours are predominantly run by small privately owned charter boats with a capacity of six to ten passengers which offer whale watching as an option among other charters, most notably sport fishing. This gives the local whale watching industry a large constituency of small, often family owned businesses, and hence a strong tie to local communities.

Main species:	Large cetaceans: *gray whale, humpback whale* Small cetaceans: *orca, Pacific white-sided dolphin, harbour porpoise, Dall's porpoise*
Tourists:	
International	85%
Domestic	15%
Types of tours:	Focused on boat-based cruises in feeding grounds of humpback whales. Also multi-day cruise ships encountering cetaceans. Some land-based watching of migratory gray whales at Whale Fest
Average adult ticket price:	$100
Estimated employment numbers:	250
Main whale watch season:	Late May to early September

Acknowledgements:
Thanks in particular to David Nemeth, as well as Glen Jacobsen, Kathy and Barry Bracken, Captain Greg, Kara Berg, Captain Joel Hanson, Dennis Rogers, David (Fritz) Koschmann, Todd Sebens, Jack Cadigan, Laurie Booyse, Dolphin tours, Nate Modica, Kaja Brix, Greg Silber and Lynn Aderho.

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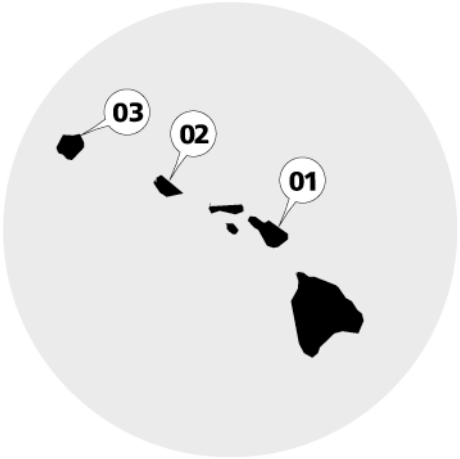
McDowell Group 2007, 'Alaska Visitor Statistics Program', State of Alaska Department of Commerce, Community and Economic Development, accessed January 2009, available online at: http://www.dced.state.ak.us/oed/toubus/research.htm.

McDowell Group 2008, 'Alaska Visitor Statistics Program V; Interim visitor Volume Report', State of Alaska Department of Commerce, Community and Economic Development, accessed January 2009, available online at: http://www.dced.state.ak.us/oed/toubus/research.htm.

Hawaii

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	448,000	N/A	N/A	$16,030,000	N/A	$27-54 million
2008	450,000	0%	67	$16,900,000	$114,500,000	$131,400,000

Whale Watch Locations:
01: Maui
02: Oahu
03: Kauai



Hawaii has a large commercial whale watching industry, including a growing dolphin-based tourist industry. Whale watching trips focus on humpback whales during the northern winter as well as viewing short-finned pilot whales when possible, while tours focusing on spinner dolphins, and to a lesser extent bottlenose dolphins, run year-round. In Hawaii, the humpback trips and the year-round dolphin trips are largely, though not completely, independent of one another, as their main operations are geographically separated. More than half of Hawaii's whale watching is based on Maui, while Oahu accounts for over 75% of dolphin tours. There is some overlap, and a number of businesses offer both activities, generally running dolphin tours year round and large cetacean watching late December to April.

The importance of cetacean-based tourism should not be underestimated for Hawaii's broader tourist industry, and for Hawaii's economy generally. Markrich (2004) notes that the tour boat industry has created badly needed jobs in Hawaii, particularly on neighbouring islands. Cetacean watching and ecotours have been the strongest section of the Hawaiian boat tour industry during a difficult period.

While operator survey responses for Hawaii were low, a number of reports enabled strong estimations for the local cetacean watching industry. Utech (2000) offers an invaluable and comprehensive account. Markrich (2004) and the Hawaiian Department of Business, Economic Development and Tourism's (DBEDT's) annual reports on visitor statistics and activities include numbers for whale watching, boat tours and snorkelling, enabling an update of Utech's estimates. For dolphin tourism, the draft report prepared by Impact Assessment Inc. for the Pacific Islands regional Office of the Protected Resources division of the NOAA Fisheries, 'Economic Data Report for NOAA Fisheries' Spinner Dolphin EIS', provided comprehensive statistics, and the DBEDT reports again offered the necessary information to assess any changes since the report.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *spinner dolphin, bottlenose dolphin, short-finned pilot whale, false killer whale*
Tourists:	
International	95%
Domestic	5%
Types of tours:	Short boat-based tours averaging 2 hours; some half-day and full-day trips
Average adult ticket price:	$25 on Maui

	$35 on other islands
Estimated employment numbers:	330
Main whale watch season:	December to April

Hawaiian Islands (Hawaii, Maui, Oahu and Kauai) - Whale watching – humpback whales

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
2008	330,000	N/A	50	$11,000,000	$74,000,000	$85,000,000

During the months of December through April, many of the North Pacific humpback whales that spend the northern summer feeding in Alaska and the Bering Sea migrate to the Hawaiian Islands to mate and raise their calves in warm, shallow waters – estimated at 10,000 whales. In 1992, the United States Congress created the Hawaiian Islands Humpback Whale National Marine Sanctuary in the waters around the main Hawaiian islands (Hawaii, Maui, Oahu and Kauai), centred on Maui. Oahu has the longest running whale watching industry, going back more than 35 years, but whale watching didn't become popular in the Hawaiian islands until it spread to Maui in 1975. Maui accounts for more than half of the total whale watcher volume and revenue generated by all four main islands.

Maui's whale watching communities are located at Lahaina and Ma'alaea, and to a lesser extent in Kihei, Mala Wharf and Ka'anapali beach. On the big island of Hawaii, whale watching operators are to be found at Kailua-Kona, Keauhou Bay, Honokohau Harbor, and the Kohala Coast. On Kauai whale watching businesses operate principally from Port Allen, with a few remaining in Hanalei, and in Oahu from Honolulu Harbor and the Kewalo Basin.

The four month duration of the humpback whales' presence in Hawaiian waters enables a substantial whale watching season. Each year more than 50 vessels take approximately 330,000 patrons on dedicated whale watching tours, providing more than 270 jobs during the season and generating approximately $9.5 million in direct expenditure. In addition, humpback whales factor significantly in the appeal of other tours (dinner cruises, ecotours, etc) (Utech, 2000) and of general tourism in Maui, due to its central location in the Hawaiian Islands Humpback Whale National Marine Sanctuary (Markrich, 2004).

There is considerable opportunistic whale watching in Hawaii, but given the difficulty of measuring the economic value of such activity, it has generally been omitted from this report. One exception is the snorkelling tours around Maui during whale season. Snorkelling tours emphasise the possibility of seeing whales in marketing material, and patrons surveyed reported whale watching as being a significant incentive in purchasing these tours (Utech). A proportion of revenue from snorkelling tours around Maui during the whale season has been included here as opportunistic revenue.

Hawaiian Islands (Hawaii, Maui, Oahu and Kauai) - Dolphin Watching

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
2008	120,000	N/A	15	$5,900,000	$40,500,000	$46,400,000

In the 2001 IFAW worldwide whale watching report, author Erich Hoyt noted the emergence of an industry based on viewing smaller cetaceans, as whale watch operators looked for year-round tour options. Dolphin watching has since grown dramatically, with approximately 15 operators taking 120,000 tourists on dedicated dolphin tours each year. Most companies are now around 10 years old and the longest running operator is 14 years. Dolphin watching provides 60 jobs and generates $4.4 million in revenue. In addition, many other tour operators watch dolphins opportunistically. Around 83 such operators of boating and kayaking tours take 390,000 patrons and generate around $37 million in revenue.

Dolphin watching in Hawaii often includes swimming or snorkelling with the animals. Some dolphin tourism operators market themselves as spiritual or holistic retreats that attempt to commune with dolphins as part of a general focus on alternative religion, spirituality, health and well-being.

78% of dedicated dolphin watching takes place from Oahu. Operators are located at the Wai'anae small boat harbor and the Ko'olina Marina. On Hawaii's main island some dolphin watch operators work from the Honokōhau small boat harbor, on Maui at the Lahaina Harbor, Mā'alaea Harbor, Kīhei boat ramp, Kā'anapali Beach, and Māla wharf and ramp. On Kauai, operators are at the Port Allen, Kīkī a Ola, and Kukui'ula small boat harbours.

Acknowledgements:
Thanks to Jayne LeFors, Sarah Courbis, Tori Cullins, Christine Brammer, Elizabeth Corbin, Kim Andrews, Karin Forney and Dan Salden.

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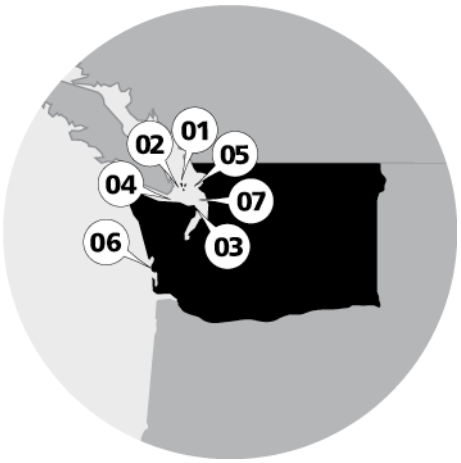
Washington

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1998	317,000	N/A	26	$3,312,000	$10,355,000	$13,567,000
2008	425,000	3.0%	42	$10,845,500	$50,590,500	$61,436,000

Whale Watch Locations:
01: Friday Harbor
02: Lime Kiln Point
03: Port Townsend
04: Port Angeles
05: Anacortes
06: Westport
07: Whidbey Island



In 1986, cetacean watching began in Washington State with the first dedicated vessel based on San Juan Island. Today, the industry continues focused on the Haro Strait and adjacent Juan de Fuca Strait area which accounts for approximately 95% of the total numbers of whale watchers.

According to the Whale Museum, located at Friday Harbour on San Juan Island, whale watching in the area reached a maximum of 32 vessels in 1997 and again in 2001. Today, with the industry well-established, 22 active whale watching vessels are undertaking whale watch trips, owned by 16 dedicated boat-based companies. Furthermore, several kayaking companies are also incorporating dedicated whale watching trips in addition to their traditional nature-based kayaking tours. In total 18 kayaking operators are accounted for either with dedicated or opportunistic trips. The remaining operators correspond to 8 charter businesses located on the Pacific coast of Washington State.

Orca watching occurs in the US-Canadian transboundary inland waters centred on Haro Strait. The main departing ports are Friday Harbour on San Juan Island, Port Townsend (east entrance of Puget Sound), Anacortes on Fidalgo Island, Port Angeles (on the south coast of the Strait of Juan de Fuca), and Bellingham (on Bellingham Bay). From the total whale watchers estimated for Washington, approximately 150,000 correspond to sea-based participants, departing from these points.

The whale watching season starts in April, extending through the summer and into October, with some operators offering sporadic trips year round and others targeting gray whale tours in March and April. Whale watchers can expect whale sightings more than 90% of the time due to the presence of resident orca pods off San Juan Island which are also easily spotted from shore. The main sighted species are resident and transient orcas, Dall's and harbour porpoises, as well as sometimes minke, gray, and humpback whales.

Tours cost on average $80 per adult and $59 per child for a three hour boat trip, and $86 for a half-day kayak trip. Kayak excursions are also offered as multiple-day tours, ranging from approx $350 to $800 for 2 or 5 days.

Farther south, along the west coast, in Westport, there is also a long history of offering sea-based whale watching, but at a much smaller scale than around the San Juan Islands and in Haro Strait. The industry in this area is predominantly charter boats that undertake fishing tours at other times of the year, but focused on the migratory gray whales during the months of March, April and May. Trips in Westport cost

considerably less than those departing from the San Juan Islands area: an average of $30 per adult and $20 per child for a two hour trip. These are offered by a local charter association.

Land-based whale watching also has a strong presence in Washington, mainly overlooking Haro Strait, but also along the Pacific coast. The most frequently visited location is Lime Kiln Point, set on the west side of San Juan Island, which attracted 198,200 participants in 2008, officially recorded by the Whale Museum, to watch the local orcas. According to local information, this figure is likely to be an underestimate due to alternative park facilities installed in 2002 alongside the main whale watching platform that detours visitors who are not counted in this estimate. If the annual growth rate between 1997 and 2002 (2.5%) is assumed to be the same in the years since 2002, it could be expected that this number would be as high as 250,000 shore-based whale watchers in Lime Kiln Point in 2008.

Other popular land-based locations for spotting the southern resident orcas are Whidbey Island, Port Townsend, Cape Flattery (where the Strait of Juan de Fuca joins the Pacific Ocean) and as far south as the Kitsap Peninsula. Likewise, the Pacific coastline offers diverse locations to spot whales on shore, such as La Push and Kalaloch Beach, although records are not collected at these locations. Farther south, close to the border with Oregon State, the Lewis & Clark Interpretive Center and the North Head Lighthouse also attract visitors, mainly in December and March, when the gray whales migrate and can be spotted on shore. Estimates for these locations have been calculated based on local tourism sources.

Considering the status of the main orca watching in the San Juan Islands area, it seems the industry has reached a steady state. From a boom between 1997-2001, the annual average number of commercial whale watch vessels remained at nearly the same level between 1998-2006 (Koski, 2006). Nevertheless, land-based whale watching is stimulating the development of new tourism growth and in response to this demand, it was reported that there are plans to establish a land-based Whale Trail for tourists in the region following the very successful Whale Watching Spoken Here programme in Oregon.

Main species:	Large cetaceans: *gray whale, minke whale, humpback whale* Small cetaceans: *orca, Dall's porpoise, harbour porpoise*
Tourists:	
International	9%
Domestic	91%
Types of tours:	Boat-based, kayak, land-based, air sighting, half-day, full-day and multiple day tours
Average ticket price:	$80 for a half-day trip $350 to $800 for 2 to 5 multi-day
Estimated employment numbers:	335
Main whale watch season:	April to October

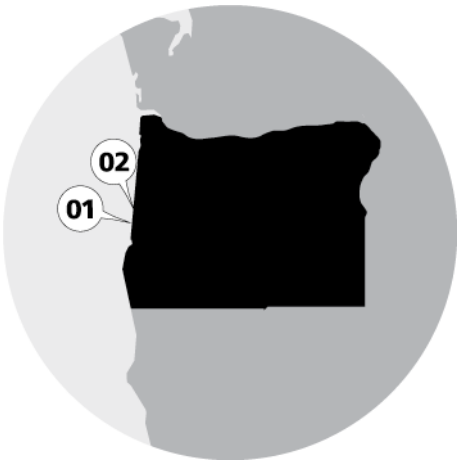
Acknowledgements:
Kari Koski of Whale Museum, Julie Tennis of Long Beach Area State Parks, Kayce Rodriguez of Parks Washington State, Kathryn Hansen of San Juan County Parks, Chris of Western Prince, Shane Aggergaard of Island Adventures and other Washington operators.

References:
Koski. K, 2006. Soundwatch Public Outreach/Boater Education Project. The Whale Museum, Friday Harbour, Washington.
http://www.parks.wa.gov/parks/

Oregon

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1998	190,137	N/A	10	$818,000	$5,577,000	$6,395,000
2008	376,618	7.1%	11	$1,587,205	$28,246,343	$29,833,548

Whale Watch Locations:
01: Newport
02: Depoe Bay



Oregon is a state well positioned to benefit from the regular annual migration of gray whales. In fact, some in the state claim an almost year round prevalence of whales, when the southern and northern migrations of gray whales are combined with the regular visitation of humpback whales and those gray whales that remain in the region to feed over summer months.

The state has long been aware of the potential tourist attraction presented by the consistent opportunity to view these whales. In 1998, it was estimated that over 126,000 people watched these whales from land, in addition to 64,000 from boats. In 2008, we estimate that a total of 377,000 tourists participated in land, sea and air-based whale watching along the Oregon coast.

The promotion of land-based whale watching in Oregon is some of the best-organised land-based whale watching in the world. The Oregon Parks and Recreation Department promotes 26 locations along the coast (2 of which are in the neighbouring states of Washington and California) as whale watching locations within a programme called Whale Watching Spoken Here. The programme focuses particularly on promoting two peak whale watching weeks annually that coincide with holidays in spring and winter. The weeks are organised to maximise the whale viewing opportunities for visitors as well as to provide educational content to the experience. To achieve this, each year volunteers are trained and located for two weeks at each of the 26 coastal sites to welcome and educate visitors providing a higher quality, and free, whale watching experience. The programme also produces comprehensive data of whale sightings each day of those two weeks from each site, as well as visitor numbers to each site. A Whale Watching Centre has also been established in Depoe Bay to provide visitors with year-round information.

Estimates for whale watchers in 2008 for this report are based on data collected by the Whale Watching Spoken Here programme, as well as visitor data to the Whale Watching Center in Depoe Bay, and then modelled across the year. The estimate for 2008 land-based whale watchers in Oregon is 315,148 (excluding the two Whale Watching Spoken Here sites that are in neighbouring states) - more than double the numbers in 1998.

Boat-based whale watchers have not seen such a rise in the last decade: rather, 2008 figures show a slight drop from 64,000 to around 61,470, on average 0.4% decrease per year. Research for this study indicated numbers have dropped slightly across the entire coast, with no one region dropping more drastically than others. It does appear that whale watching has become more concentrated, with a clear majority of trips occurring in the two main whale watch centres of Newport and Depoe Bay (over 95%) – the latter taking the highest numbers – and most trips taken by only a small number of operators. The other five smaller whale watching centres have dropped in numbers and operators since 1998 with the majority of operators seeming to focus more on their core business of charter fishing.

Nevertheless, the industry is undoubtedly strong and mature in Oregon, with many of the same operators still taking trips as they were in 1998. The industry is made up largely of fishing charter boats that undertake whale watching trips in peak season on demand. Despite the presence of whales year round, a majority of operators responded that they focus predominantly on the warmer months from May to October which includes the prime summer holiday season from end of May Memorial Day to early September Labor Day. Unlike California, there are few larger whale watch operations, with the majority of vessels averaging a capacity of up to 30 passengers.

Approximately 11 operators run boat-based tours along the entire Oregon coast in over 35 vessels. One operator runs air-based charter flights to see the whales. The main locations remain consistent with 1998, being predominantly Newport (Yaquina Bay) and Depoe Bay. Smaller operations run out of Brookings, Charleston and Garibaldi.

Main species:	Large cetaceans: *gray whale, humpback whale* Small cetaceans: *harbour porpoise*
Tourists:	
International	8%
Domestic	92% (North American)
Types of tours:	Boat-based and land-based
Average ticket price:	$30
Estimated employment numbers:	55
Main whale watch season:	Year round, with November and early December being low months

Acknowledgements:
Thanks to Oregon Parks and Recreation Department and particularly Morris Grover, Bruce Mate of Oregon State University, operator and researcher at Oregon State University, Carrie Newell, and seven other operators.

California

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	N/A	N/A	N/A	N/A	N/A	N/A
1994	N/A	N/A	N/A	N/A	N/A	N/A
1998	1,774,700	N/A	65	$14,110,000	$50,171,000	$64,281,000
2008	1,371,467	-2.5%	73	$14,308,814	$68,573,343	$82,882,157

Whale Watch Locations:
01: Fort Bragg
02: Channel Islands
03: Gulf of Farallones National Marine Sanctuary
04: Los Angeles
05: Cabrillo National Monument

California has the longest established whale watching industry in the world, with formal boat-based whale watching going back as far as the 1950s (Hoyt, 2008).

The primary focus of whale watching tourism in California is the winter migration of gray whales which occurs between November and May. Each year, gray whales migrate from Arctic feeding grounds along the California coast to mating and calving grounds in Baja California, México. The southern migration generally takes place between November and February, and is followed by the northern migration as the gray whales return, with calves, to northern feeding grounds. Except for in San Diego, whales tend to be farther from the shore during the southern migration and closer during the northern migration, which usually peaks during April, with slower mother and calf pairs still being sighted into May. Some regions offer summer whale watching of blue and humpbacks between May and December, although whale sightings of these two species is usually highest between June and September. Orcas are also increasingly seen year-round, particularly in Monterey Bay. Most locations also offer year-round sightings of at least some of the following species of dolphins and porpoises including long- and short-beaked common dolphins, Pacific white-sided dolphins, Risso's dolphins, bottlenose dolphins, northern right whale dolphins, harbour porpoises and Dall's porpoises. Species sighted less frequently include fin whales, minke whales, sperm whales and Baird's beaked whales. With offshore islands and marine sanctuaries along the coast, extended day trips are also popular, particularly to the Gulf of the Farallones National Marine Sanctuary, the Channel Islands National Marine Sanctuary and within the Monterey Bay National Marine Sanctuary.

Overall, land-based whale watching continues to be a big attraction with an estimated 981,000 land-based whale watching tourists in 2008. This is based on seasonal visitation data to around 30 state and national parks or beaches and is slightly higher than the estimate for land-based whale watchers in 1998. However, in 1998, the Cabrillo National Monument was estimated to attract approximately 300,000 land-based whale watching tourists based on overall annual tourist visitation of 1.1 million. By 2008, overall visitation to Cabrillo had dropped to 700,000, and hence the estimate for land-based whale watchers at Cabrillo has subsequently dropped to 125,000 tourists. Despite this, the Cabrillo National Monument remains in the top four locations for land-based whale watching in California, along with Point Reyes National Seashore, Sonoma Coast State Park and the Point Vicente Interpretive Center. Significant numbers of more casual land-based whale watchers are not included in these estimates, since in many locations along the coast, whales can be seen from any high point and along many coastal roads. This more informal whale watching has not been estimated in this report.

With the number of boat-based whale watching tourists in California estimated in 2008 at 390,000, the industry appears to have declined quite dramatically since 1998, when there were an estimated 750,000 whale watchers. The biggest factor attributed to this decline are reported declines in sightings of gray whales. The industry has also matured and in some locations, there has been some redistribution of whale watching tourists from certain locations to others. Some regions have expanded through offering year-round whale watching, where previously only seasonal gray whale watching was offered. Other regions have contracted, with operators in some ports in Los Angeles County seeing the industry drop away about 2 to 5 years ago. Some hypothesise that this drop off may have been due to reduced budgets for school groups to go on whale watching trips, which traditionally make up a large proportion of whale watching tourist numbers in certain regions of California. Operators in Marina Del Rey plan to address this situation by being more proactive in marketing their particular region and have plans to promote their whale and nature cruises in the winter of 2009/10. Some more remote areas have also seen declines in tourist numbers as more ports and often larger vessels have begun offering whale watching, resulting in tourists being able to go on trips closer to home.

Importantly, whales continue to be a significant social and cultural focus along the California coastline. As many as thirteen whale festivals are still organised annually, including three within Mendocino County alone, and two that have been running for nearly 40 years. Along with events and performances, some include whale watch tours and sales of various whale artefacts along with local produce and other souvenirs.

Although 2008 was a reasonable year for whale watching in California, most operators are reporting significant declines in passengers in 2009, particularly for school groups and domestic tourists. However, some operators reported that international tourism was still relatively strong.

With the whale watching industry in California now being relatively mature, operators are increasingly competing for a fixed number of whale watching tourists, and more active marketing of whale watching along with other attractions will be needed to draw tourists to any particular region. Compounding this is a reported significant decline in gray whale sightings close to shore, which was particularly acute between 1999 and 2001. Furthermore, the last ten years has seen an increasing awareness of the value of tourism across America, and so, more competition for tourists. Whale watching in California will continue to be a big tourist attraction, but operators are increasingly competing against other coastal regions for whale watchers, and other regions for tourists in general.

Despite this, the coast of California, is one of the best places in the world for reliable sightings of blue whales. Humpbacks are also frequently seen during the summer months and summer trips for humpbacks and blue whales could possibly provide some growth opportunities for the industry going forward.

Whale watching in the three main regions of California is summarised below:

Northern Region

Del Norte County, Humboldt County, Mendocino County

The northern region has six operators who take an estimated 8,735 boat-based whale watchers annually. Land-based watching is big in this region, with nearly 150,000 land-based whale watchers estimated for 2008. Although a total of 22 land-based locations are identified in this region, the vast majority of the tourism estimates are based on seasonal visitation to McKerricher State Park and Mendocino Headlands State Park.

Trips here only run during the gray whale season, between mid-December and February for the southern migration and February and April for the northern migration. Some mothers with calves can still be seen in May. An average adult ticket costs $35 for a 2hr trip.

Central Region

Sonoma County, San Francisco County, San Mateo County, Marin County, Santa Cruz County, Monterey County, San Luis Obispo County

The central region offers a greater variety of watching compared to the north, with twenty-two operators taking an estimated 128,509 boat-based whale watchers in 2008. This region is also the biggest for land-based whale watching in California, with an estimated 454,560 land-based whale watchers. Although approximately 20 land-based locations are identified in this region, the vast majority of tourist estimates are based on seasonal visitation to Point Reyes National Seashore and Sonoma Coast State Park, with San Simeon and Montaña de Oro State Park also attracting large numbers of whale watchers.

Around San Francisco, boat-based trips are offered year-round and focus on the gray whales between mid-December and May, with whale numbers peaking in mid-January for the southern migration and mid-March for the northern migration. Mothers with calves can be seen late April and early May. Humpback and blue whale tours are also offered between July and November and year-round day trips to the Farallon Islands are offered on weekends. The Farallon Islands are located 27 miles off the coast of San Francisco, close to the continental shelf, and are home to thousands of birds, seals and sea lions. The waters of the Gulf of the Farallones National Marine Sanctuary are also important feeding grounds for Pacific white-sided dolphins and Dall's and harbour porpoises, as well as being in the migratory path of larger cetaceans such as gray, humpback and blue whales. An estimated 4,500 to 5,000 passengers go on Farallon Islands trips annually. Average adult ticket prices around San Francisco are $60 for a half-day trip while full-day trips to the Farallon Islands can cost between $95 and $125. Shorter harbour trips of around 2 hours are also run and cost $30 but only offer opportunistic sightings of dolphins and porpoises. Most trips depart from San Francisco, Sausalito or Half Moon Bay.

South of San Mateo county, Monterey, Moss Landing and Santa Cruz account for the vast majority of boat-based whale watchers in the central region, offering reliable year-round whale watching in the Monterey Bay National Marine Sanctuary. Trips in Monterey Bay are offered year-round with gray whales between December to April, particularly during the peak of the southern migration in February and the peak of the northern migration in April. Humpback and blue whales are seen between May and December with humpbacks being more common than blue whales during this time. Orcas are also a common year-round sight in Monterey Bay — short-beaked common dolphins, bottlenose dolphins, Pacific white-sided dolphins, Risso's dolphins, northern right whale dolphins, Dall's porpoises and harbour porpoises are seen year-round. There are also occasional sightings of fin whales, minke whales and Baird's beaked whales. Average adult ticket prices for 2 to 3 hour trips are $46. Average adult ticket prices for longer trips are $86.

Farther south, trips are also run out of Morro Bay and Port San Luis. Operators here are smaller than those around Monterey Bay, and only one offers year-round whale watching, with most just offering gray whale watching in winter and sport fishing during summer.

Southern Region

Santa Barbara County, Ventura County, Los Angeles County, Orange County, San Diego County

Southern California is the home of organised whale watching, and remains the largest region for boat-based operators in California, with forty-five operators taking an estimated 253,381 boat-based whale watchers in 2008.

The region also attracts an estimated 386,618 land-based whale watchers, primarily to Cabrillo National Monument, the Point Vicente Interpretive Center and Crystal Cove State Park. A total of 25 land-based locations are identified in the southern region, although as in central California, whales can usually be seen from any elevated location, including along many of the coastal highways.

In Santa Barbara and Ventura County, trips are offered year-round with the southern migration of gray whales between late-December and February and the northern migration between February and mid-May. The peak of activity is between January and March and particularly during the northern migration, as the whales travel much closer to the shore and often more slowly as the mothers are travelling with calves. Blue and humpback whale watching occurs between June and November, although the highest concentration of whales usually occurs between June and September. The Santa Barbara Channel has very reliable sightings of blue whales during this time and is one of the best spots in the world for boat-based blue whale watching. Bottlenose dolphins, short-beaked common dolphins, Pacific white-sided dolphins, minke whales and Risso's dolphins are also seen year-round with occasional sightings of orcas. Adult ticket prices for operators from Santa Barbara and Ventura County are between $30 to $50, with day trips to the Northern Channel Islands costing between $65 and $95.

Farther south in Los Angeles and Orange County, operators also offer both winter gray whale watching and to some extent, summer whale watching of blue whales. Humpback whale watching is not as prominent here as north in Santa Barbara and Ventura County. Adult ticket prices for operators in Los Angeles County range between $15 and $30 although many operators with larger vessels offer discounted ticket prices for school and other group bookings which can be as low as $10 per person. Adult ticket prices for operators in Orange County are between $30 and $55, with day trips to the Southern Channel Islands (Catalina Island) costing around $70.

In San Diego, land-based whale watching is popular at the Cabrillo National Monument, with an estimated 125,000 land-based whale watchers in 2008. Visitation to the Cabrillo National Monument has decreased from over 1 million visitors annually in 1998, to only 700,000 in 2008, resulting in a big decline in estimated land-based whale watchers - down from over 300,000 in 1998. Apart from the Cabrillo National Monument, a further six land-based locations are identified in San Diego county, mostly at beaches or highway bluffs.

Boat-based trips from San Diego are mostly offered between December and May and focus on the northern and southern migrations of the gray whale. Off the coast of San Diego, unlike farther north, gray whales swim closer to the shore during the southern migration and farther out during the northern migration. One operator is offering year-round trips that include other whales and dolphins by going farther out off the coast. Commonly sighted species include long and short-beaked common dolphins, bottlenose dolphins and Pacific white-sided dolphins. Occasional sightings of short-finned pilot whales, fin whales, orcas, minke whales and Risso's dolphins also occur year-round. Some operators based in San Diego run trips into Mexican waters, in this report, passengers on these trips have been included in the Mexican numbers.

Average adult ticket prices for 2 to 4-hour trips are $50. Sailing yachts and smaller vessels charge between $65 and $85 per person, while larger boat-based vessels charge between $30 and $35 per person. Nearly all trips depart from San Diego.

Main species:	Large cetaceans: *gray whale, blue whale, humpback whale* Small cetaceans: *long-beaked common dolphin, short-beaked common dolphin, Risso's dolphin, Pacific white-sided dolphin, bottlenose dolphin, Dall's porpoise*
Tourists:	
International	10%
Domestic	90%
Types of tours:	Boat-based, day trips
Average ticket price:	Varies significantly between regions 2 to 3hr trips cost anywhere from $10 to $50 Day trips may cost between $80 and $125
Estimated employment numbers:	600
Main whale watch season:	December to May (gray whales) May to December (blue whales) May to November (humpback whales) Year-round (dolphins and other small cetaceans)

Acknowledgements:
Bernardo Alps (American Cetacean Society), Birgit Winning (Oceanic Society), John Arnold and Christopher Knoll (Parks California), and all of the operators, tourism bureaus and Chambers of Commerce who assisted with this research.

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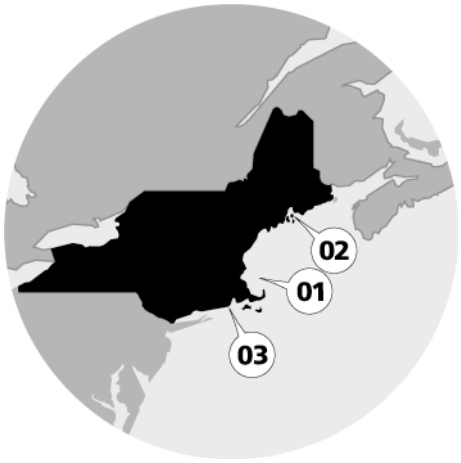
New England

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	1,240,000	N/A	36	$30,600,000	$76,650,000	$107,250,000
2008	910,071	-3%	31	$35,000,000	$91,000,000	$126,000,000

Whale Watch Locations:
01: Stellwagen Bank
02: Maine
03: New Hampshire



New England has a very large whale watching industry, which has experienced a significant contraction since 1998. In 2008, an estimated 910,000 tourists went on boat-based whale watching trips from ports in Massachusetts, Maine, New Hampshire, and Rhode Island.

The most popular whale watching location in New England is Stellwagen Bank, 25 miles to the east of Boston, Massachusetts. This area accounts for around 80% of whale watching in the region. Stellwagen Bank National Marine Sanctuary was designated in 1992 and is visited by boats from many nearby ports, such as Provincetown, Plymouth, Gloucester and increasingly from Boston. (See boxed text for more details.)

The whale watching season in New England is from late April to October, with a peak in July and August. During this period, boats in the main ports make up to three trips per day. Trips generally last from three to four hours.

Operators claim that whale watcher numbers have contracted around 25% since 1998. The local industry was hit hard by a downturn in tourism following the terrorist attacks on September 11, 2001. Some operators stated international tourist numbers have been particularly slow to recover from this decline.

Following this shock there were several years with poor numbers of whale sightings which also affected whale watcher numbers. The Stellwagen Bank National Marine Sanctuary Draft Management Plan quotes various reports suggesting a decline of one of the main food sources for fin and humpback whales was causing the decline in whale sightings. Several studies have linked whale sightings to concentrations of a small, semi-pelagic fish called sand lance (NOAA 2008). Since 2006, however, whale sightings have improved again, with operators claiming sightings to be as frequent as ever, seeing up to 40-50 whales per trip early in the 2009 season.

As one operator's website claims, "The Whales are back in Full Force!!!", but other factors are preventing the return of the whale watchers. All operators said the current economic downturn was affecting their business. As one operator said "If you've got three kids, a day out whale watching will cost you over $200, and a lot of people don't have that disposable income at the moment." As suggested elsewhere in this report, whale watching, like tourism in general, is sensitive to economic conditions.

Ticket prices for whale watch trips to Stellwagen Bank are around $40 for adults and $30 for children for trips of around 4 hours. Operators tend to use large vessels capable of taking 100 to 400 passengers. Many operators provide packages to school groups early in the season.

Operations farther north in New Hampshire and Maine offer similar length trips and see similar species. Prices are also similar although vessels tend to be smaller, and there are fewer operators and whale watchers than in the concentrated Stellwagen area. New Hampshire operators also use the northern part of the Stellwagen Sanctuary, as well as Jeffreys Ledge, a long bank that stretches from northern Stellwagen to near Portland in Maine. Some trips also offer fishing, lobster catching, puffin watching and general nature cruises.

A handful of operators also run boat-based trips out of Nantucket and Rhode Island. There are some dedicated trips, though these have to travel farther than operators farther north. Many trips are also offered featuring seals and pelagic birds.

Main species:	Large cetaceans: *fin whale, humpback whale, minke whale, North Atlantic right whale* Small cetaceans: *Atlantic white-sided dolphin, harbour porpoise*
Tourists:	
International	15%
Domestic	85%
Types of tours:	4 hour boat-based trips, mainly to Stellwagen Bank or Jeffreys Ledge some 20 miles offshore.
Average adult ticket price:	$40 for adults and $30 for children
Estimated employment numbers:	730
Main whale watch season:	May to October

Acknowledgements:
Thanks to Bob Avila, Kathy Zagzebski at the National Marine Life Center, Jooke Robbins at Provincetown Centre for Coastal Studies, Mason Weinrich at Whale Center of New England and several operators.

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http://www.jeffreysledge.org/

Local Case Study: Stellwagen Bank, USA

About 20 miles off the coast of Massachusetts, stretching from the tip of Cape Ann to the end of Cape Cod, lies an underwater treasure. Stellwagen Bank is a massive underwater plateau, whose hidden grandeur rivals North America's southwestern mesas and South Africa's table mountain. This underwater plateau attracts abundant marine life, which, in turn, attracts humans. Stellwagen Bank is consistently ranked as one of the best places in the world for whale watching.

Encompassing 842 square miles, Stellwagen Bank National Marine Sanctuary is one of 13 National Marine Sanctuaries spread throughout US territorial waters. Within the sanctuary's boundaries, Stellwagen Bank rises hundreds of feet from the depths of the Atlantic Ocean, forming a massive plateau that lies approximately 100 feet below the surface. The plateau's steep walls are the reason for Stellwagen's appeal to humans and wildlife. When deep ocean currents collide with the plateau, they flow up its side and toward the surface. This process—known as upwelling—brings nutrient-rich water to the ocean's surface. There, fuelled by sunlight, it sparks a food web that attracts a range of marine wildlife, from the smallest fishes to the largest whales. More than 575 species are found in Stellwagen Bank National Marine Sanctuary, including 22 species of marine mammals.

Blessed with these offshore riches, New England's coastal communities have always embraced a maritime lifestyle. For centuries, hardy men and women have plied these waters for fish, crabs, lobsters, oysters and more. Not surprisingly, New England was also once home to a thriving commercial whaling industry. The Yankee Spirit—a whale watching vessel based out of Gloucester—is a reminder of those more difficult days, honouring the determination of New England's whalers. Today, the indomitable Yankee spirit still drives captains to pilot their boats in pursuit of New England's whales. But they seek to watch rather than kill, and are armed with cameras, not harpoons.

More than 700,000 tourists ventured to Stellwagen Bank on commercial whale watching vessels in 2008. These tourists—eager for the chance to glimpse some of the world's largest creatures—spent approximately $126 million on tickets and associated expenses. This industry creates and supports hundreds of full- and part-time jobs for scientists, students, ships' captains and more.

Stellwagen Bank's whale watching industry provides more than economic benefit. Two Massachusetts-based research organisations—the Center for Coastal Studies and the Cetacean Research Unit—were started and continue to flourish due to their close relationships with commercial whale watching operations. In fact, whale watching is critical to whale research and conservation. Sharp-eyed whale watching crew members in the Stellwagen Bank National Marine Sanctuary provide vital information, alerting researchers to regular sightings and potential rescue scenarios. Photos from whale watchers also contribute data to photo-identification and scarification studies.

Finally, whale watching drives whale conservation. Despite the worldwide ban on commercial whaling, today's whales face more threats than ever before. Right whales are no longer hunted with harpoons, but too many are killed when they are hit by large ships or become entangled in fishing gear. Humpbacks and other whales are also threatened by the increasing volume of ocean noise pollution, which overwhelms their communication.

The benefits brought by the whale watching industry are obvious within and around the Stellwagen Bank National Marine Sanctuary. Tourists infuse New England's coastal communities with dollars and jobs. Crew and passengers provide scientists and conservationists with vital information that supports whale research projects. And, perhaps most importantly, whale watching connects people with whales, forging a bond that could ultimately save these species.

Jake Levenson - IFAW

Eastern Seaboard United States – New York to Georgia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	204,000	N/A	N/A	N/A	N/A	N/A
2008	297,000	3.8%	50	$7,300,000	$12,500,000	$19,800,000

Whale Watch Locations:
01: Cape May
02: Lewes
03: Dewey Bay
04: Virginia Beach
05: Outer Banks
06: Hilton Head
07: Cape Hatteras

Whale and dolphin watching on the eastern seaboard of the United States occurs in New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina and Georgia. Dolphins are seen year-round while whales - some resident, some on migration - are seen mainly between March and September, although some sightings are possible earlier and later in certain areas. The peak season for tourists is during the May to September holiday season. With an estimated 204,000 whale watchers in 1998 (E Hoyt, pers. comm., 2009), this form of tourism has grown at an average annual rate of 3.8% in the region and now takes nearly 300,000 passengers annually.

New York to Virginia:
The Coastal Research and Education Society of Long Island (CRESLI), New York, offers members of the public the chance to participate in its research, with occasional trips from Montauk Harbor. The trip runs for around 5 hours as they must travel some distance offshore to see whales. Basic accommodation is provided and tickets cost $300 for adults and $150 for children. CRESLI has identified 25 species of cetaceans in Long Island's offshore waters, such as fin, humpback, minke, North Atlantic right and sei whales, as well as short-beaked common and bottlenose dolphins.

Operators between New Jersey and Virginia predominantly target humpback and fin whales and occasionally see the North Atlantic right whale. Bottlenose dolphins are commonly seen and most operators run dolphin watching trips when whales are not in the area. Several operators guarantee dolphin sightings, while whale sightings are less consistent. Some operators report seeing whales on only 50% of their whale watch trips.

Whale and dolphin watching trips in New Jersey are offered from March to December. These trips run for approximately 3 hours and cost $20-$40 for adults and $10-$25 for children with vessels mostly launching out of Cape May and some from Atlantic City. Vessels in New Jersey, as in Delaware and Virgina, are generally large and can accommodate up to 150 passengers.

In Maryland, only one operator advertises dolphins as a feature of cruises leaving from Ocean City. Trips in this area are predominantly marketed as scenic cruises.

Similar to New Jersey, big vessels operating out of Lewes and Dewey Beach in Delaware offer whale and dolphin watching offshore. Some land-based dolphin watching is also advertised as an activity at Cape Henlopen State Park, although minimal numbers have been included in this report.

Cetacean watching in Virginia is based in Virginia Beach, where a local aquarium runs whale watching trips from January to mid March and dolphin watching from mid April to mid October. Trips run for two to three hours. Emphasis is placed on the educational content of these trips, with naturalist guides going on each cruise. Other operators run general cruises and fishing tours from Virginia Beach that include opportunistic dolphin watching.

North Carolina to Georgia:
Cetacean watching from North Carolina to Georgia is characterised by small operators running short, boat-based dolphin watching trips. Most operators in the region are small, one boat businesses. Many boats have a capacity of fewer than ten passengers, although there are some larger operators particularly in North Carolina and Hilton Head, South Carolina. The abundance of small operations is possible due to the sheltered waters, resident dolphin populations and proximity to tourist areas.

While one North Carolina operator advertises seasonal whale watching opportunities offshore, nearly all of this area's dolphin watching takes place in sheltered waters, either inside the Outer Banks of North Carolina or in the estuarine waterways of South Carolina and Georgia. Trips are short, at around two hours, cost $20-$30, and often guarantee dolphin sightings. Level of dedication to dolphin watching varies with operators and within the region. North Carolina operators often feature wild horse watching on the Outer Banks, while options to catch fish, watch birds and see alligators are common throughout the region.

A considerable amount of informal land-based dolphin watching occurs from Cape Hatteras National Seashore, Cape Lookout National Seashore and Cape Fear Coast CVB in North Carolina, while in Georgia, Cumberland Island National Seashore also has significant, but informal land-based dolphin watching. The most popular of these, Cape Hatteras, receives around 2 million visitors per year. Although dolphin sightings are common, most visitors are not dedicated dolphin watchers, and are there to surf, windsurf or enjoy the coastline generally.

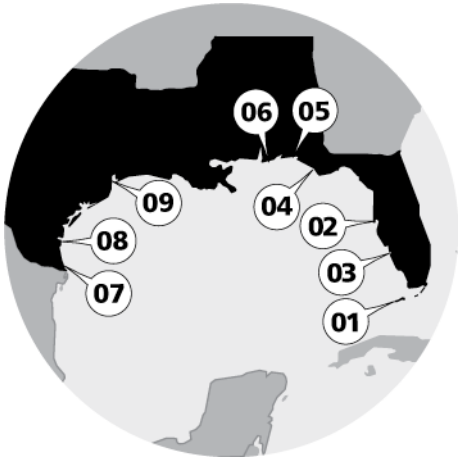
Main species:	Large cetaceans: *humpback whale, fin whale, North Atlantic right whale* Small cetaceans: *bottlenose dolphin*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Dolphin watching often from smaller craft. Watching of larger, pelagic cetaceans on larger vessels offered seasonally in New Jersey, Delaware and Virginia
Average adult ticket price:	$35 (whale watching), $29 (dolphin watching)
Estimated employment numbers:	375
Main whale watch season:	Whales: mainly March to September. Dolphins: year-round.

Acknowledgements:
Thanks to Julia Clark, Keith Rittmaster at Cape Lookout Studies Program and all the operators who participated in our research.

Florida and the Gulf States

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1998	61,000	N/A	N/A	N/A	N/A	N/A
2008	550,653	24.6%	125	$12,730,956	$27,532,643	$40,263,599

Whale Watch Locations:
01: Key West
02: Clearwater/St. Petersburg
03: Sanibel
04: Panama City
05: Destin
06: Orange Beach
07: South Padre Island
08: Port Aransas
09: Galveston



Florida has the longest running and most established cetacean watching industry in this region, with Texas and Alabama only starting up in the late 1990s. Louisiana and Mississippi have minimal activities. Bottlenose dolphins are the main focus of cetacean tourism in the region. Because of the wide continental shelf in the Gulf, larger cetaceans are rarely seen except in deeper water far from the coast.

Cetacean tourism in Florida and the Gulf States has increased significantly since IFAW's 1998 study, which estimated 61,000 for the region (E Hoyt, pers. comm., 2009). The main locations continue to be resorts and tourist areas with most passengers being local and interstate US tourists.

Florida has some of the main dolphin watching areas in the United States, particularly on popular tourist beaches from the Keys to the Panhandle. Major areas where dolphin watching tours are offered include Key West, Clearwater/St. Petersburg, Sanibel, Panama City, Destin and Pensacola. Some small operators also offer dolphin watching in the Florida Everglades.

In this report, we estimate that nearly 250,000 people participated in some form of dolphin watching in 2008, so there has been strong growth, despite Florida's long history of dolphin watching (see boxed text). One Florida Keys operator mentioned that in her area there had actually been a decline in recent years – when she began 12 years ago there were 3 operators in the Key West area. This grew to over 21 between the late 1990s and about 2005, before declining to what she sees as a more sustainable 13. The decline was due to competition, consolidation and falls in tourism following hurricanes, and the recent economic downturn.

Trips offered by Florida's dolphin watch operators tend to be short, for two to four hours, costing $15-$50 depending on length of time, other attractions and facilities. Many guarantee dolphin sightings or offer a free second trip. Swim-with-dolphins trips are also common, particularly in Key West. They are usually run from small boats for four hours, costing around $85 (see boxed text).

The Dolphin SMART programme aims to promote responsible viewing of wild dolphins by operators. It is a partnership between the National Oceanic and Atmosphere Administration (NOAA), the National Marine Fisheries Service, the Whale and Dolphin Conservation Society, and the Dolphin Ecology Project. The project began in the Florida Keys and is now also being adopted in Alabama. Fifteen operators in Alabama

participated in a workshop on the programme in 2008 and expressed a 'strong desire to participate' (Mississippi-Alabama Sea Grant Consortium 2009).

In Alabama at least 26 operators now offer dolphin tours. Some of these operators advertise more heavily than others; many are charter companies and don't heavily promote dolphin watching, but watch them on an opportunistic basis. Most operators are based in Orange Beach and offer short excursions to surrounding bays and bayous, such as Perdido Bay and the Bayou St. John. Trips are between one and two hours long and cost between $10 and $20, with trips usually cheaper during weekdays or for morning trips. Charter vessels can cost between $100 and $200 per hour with individual prices depending on the number of passengers. Vessel capacities range from under ten passengers for smaller charter yachts, through to larger boats carrying as many as one hundred and fifty passengers. At least one operator has invested in glass bottom boats for underwater viewing of dolphins.

Cetacean watching tourism in Louisiana and Mississippi is much less developed than in Florida, Alabama and Texas. Fishing charters and other cruises sometimes advertise the possibility of seeing dolphins during expeditions. The recent appearance of a rare, pink albino bottlenose dolphin in Calcasieu Lake, Louisiana, attracted temporary but widespread media coverage and may lead to further interest in and awareness of dolphin watching in Louisiana.

In Texas, trips are offered from South Padre Island close to the Mexican border, as well as nearby Port Isabel. In North Padre Island, tours are offered out of Port Aransas, close to Corpus Christi. Closer to Houston trips are run from Galveston. A total of sixteen operators have been identified in Texas. Trips are mostly short, lasting between forty-five minutes and two hours, and many operators run multiple trips per day. Early evening trips which combine dolphin watching with dinner and sunset viewing are also common. One operator mentioned that they get busier during bad weather 'because people are looking for something to do other than lie on the beach'.

Hurricanes and poor weather can interfere with the frequency of tours during summer and early autumn in the Gulf area; however, as long as the region remains a popular holiday destination, cetacean watching should continue to be an attraction.

Main species:	Small Cetaceans: *bottlenose dolphin*
Tourists:	
International	5%
Domestic	95%
Types of tours:	Dedicated and opportunistic boat-based dolphin watching. Swim-with tours in Florida
Average ticket price:	$10 - $20 (Texas and Alabama) $39 (Florida) $85 (swim-with tours in Florida)
Estimated employment numbers:	625
Main whale watch season:	Year-round for dolphins, with a peak in tourists during holiday season

Acknowledgements:
Florida Keys Wild Dolphin Alliance, NOAA Fisheries Service and the National Marine Sanctuaries Program, Courtney Vail (Whale and Dolphin Conservation Society/ Dolphin SMART), Amy Whitt

References:
Mississippi-Alabama Sea Grant Consortium, 2009, accessed May 2009, available online at: http://www.masgc.org/page.asp?id=353

Dolphin Smart, 2009, accessed May 2009, available online at: http://sanctuaries.noaa.gov/dolphinsmart

Local Case Study: Florida Keys to the Florida Panhandle, USA

Florida's coast from the Keys to the Panhandle has a long history of dolphin watching, both captive and wild. Businesses off the Florida Keys were pioneers in captive dolphin training from the 1950s, training the dolphins in the famous TV series Flipper. Dolphin shows became, and to some extent remain, a feature of tourism in the area, later diversifying into wild dolphin watching, 'swim-with' captive dolphins and later swim-with and feeding of wild dolphins. Beachside apartments and hotels even boast that you can watch dolphins from their balconies. Given this history, it seems only natural that the Miami football team adopted the name the Dolphins.

Given the size, fame and nature of dolphin watching industries from the Keys to the Panhandle, it is not surprising that debates over ethics and sustainability rage here, while they merely smoulder elsewhere. Captive dolphin businesses often emphasise that their animals were saved from injuries or born in captivity, while swim-with businesses boast of their long-developed relationships with certain pods. Some boat-based watching operations condemn swim-with operations as harassment, while Whitt & Read (2006) note that boat-based operations in Clearwater adhered to dolphin watching guidelines only 60% of the time. While most operators emphasise the 'naturalness' of their encounters with dolphins, others boast of the size of the wake their boats create, as dolphins like to play in it.

A more direct but widely criticized method of attracting dolphins, and the money that can be made from them, has been feeding. Feeding of wild dolphins has brought guaranteed sightings for many tourists, but changes the behaviour of the dolphins, leading to potentially dangerous interactions with boats, fishing gear and people. It can also be bad for the dolphins' health; there have been reports of people feeding them with inappropriate foods such as hotdogs and beer (NOAA, 1999), and feeding has been shown in some studies to diminish the dolphins' reproductive success.

Feeding wild dolphins is illegal in the USA and the National Oceanic and Atmospheric Administration (NOAA) has prosecuted dolphin watch operators who have sold food and provided a platform for feeding the animals. NOAA and conservation groups such as the Whale and Dolphin Conservation Society (WDCS), have been active in educating operators and the public with campaigns such as Dolphin SMART (see www.sanctuaries.noaa.gov/dolphinsmart) and www.dontfeedwilddolphins.org. As Florida has led the world in establishing dolphin watching, perhaps it will also one day lead in managing dolphin watching industries into the future.

References:

NOAA, 1999, NOAA press release on dolphin feeding. NOAA Florida. Available online at: http://www.publicaffairs.noaa.gov/releases99/may99/noaa99r126.html.

Whitt, A. and Read, A, 2006, Assessing compliance to guidelines by dolphin-watching operators in Clearwater, Florida, USA. Tourism in Marine Environments, 3(2), pp. 117-130.

Central America and Caribbean

Year	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	2,034	N/A	6	$1,524,000	$210,000	$1,734,000
1994	19,212	111.4%	12	$3,526,000	$3,831,000	$7,357,000
1998	90,720	47.4%	19	$5,968,000	$5,117,000	$11,085,000
2008	301,616	12.8%	23	$19,500,388	$34,267,141	$53,767,529

The Central American and Caribbean region covers a diversity of countries, from those situated along the isthmus of the Americas with both Pacific and Caribbean coastlines, to the chain of islands that encompass the Caribbean.

The whale watching industry in this region is as equally diverse as the countries, with some well-established mature whale watching industries and some in their very early stages. The most mature of these is Dominica. The largest is a relatively young whale watching industry in Costa Rica. At the other end of the scale is Jamaica, which has a new industry with one operator testing the opportunities to see sperm whales.

Since 1998, the industry overall across the region has taken a significant step up in terms of numbers of whale watchers participating in tours, growing at 13% per year over the decade to an industry responsible for $54 million in expenditure, well above the $11 million in 1998. In that same period, the number of countries participating in whale watching has grown from 19 to 23.

A very detailed study of whale watching in this region commissioned by the Whale and Dolphin Conservation Society, IFAW and Global Ocean was released in 2008. Covering the entirety of Latin America (not including the Caribbean), the report gave comprehensive data on the industry for the 2006 calendar year. Due to the comprehensive nature of this recent report, we have relied on the 2006 numbers in the following section for the Central American countries of Belize, Costa Rica, Guatemala, Nicaragua and Panamá, as well as for México and South America in other sections. For all Caribbean countries, new data has been collected as part of this Whale Watching 2008 report to provides estimates for the 2008 calendar year.

In the regional summary table above, a projection based on the 2006 figures has been used to estimate the overall size of the whale watching industry for the five Central American countries in 2008. This projection used previous growth rates in whale watching on a country-by-country basis combined with tourism arrival growth figures from the World Tourism Organisation to estimate whale watch numbers for 2008. However, in the following individual country section, only 2006 data are presented for the Central American countries.

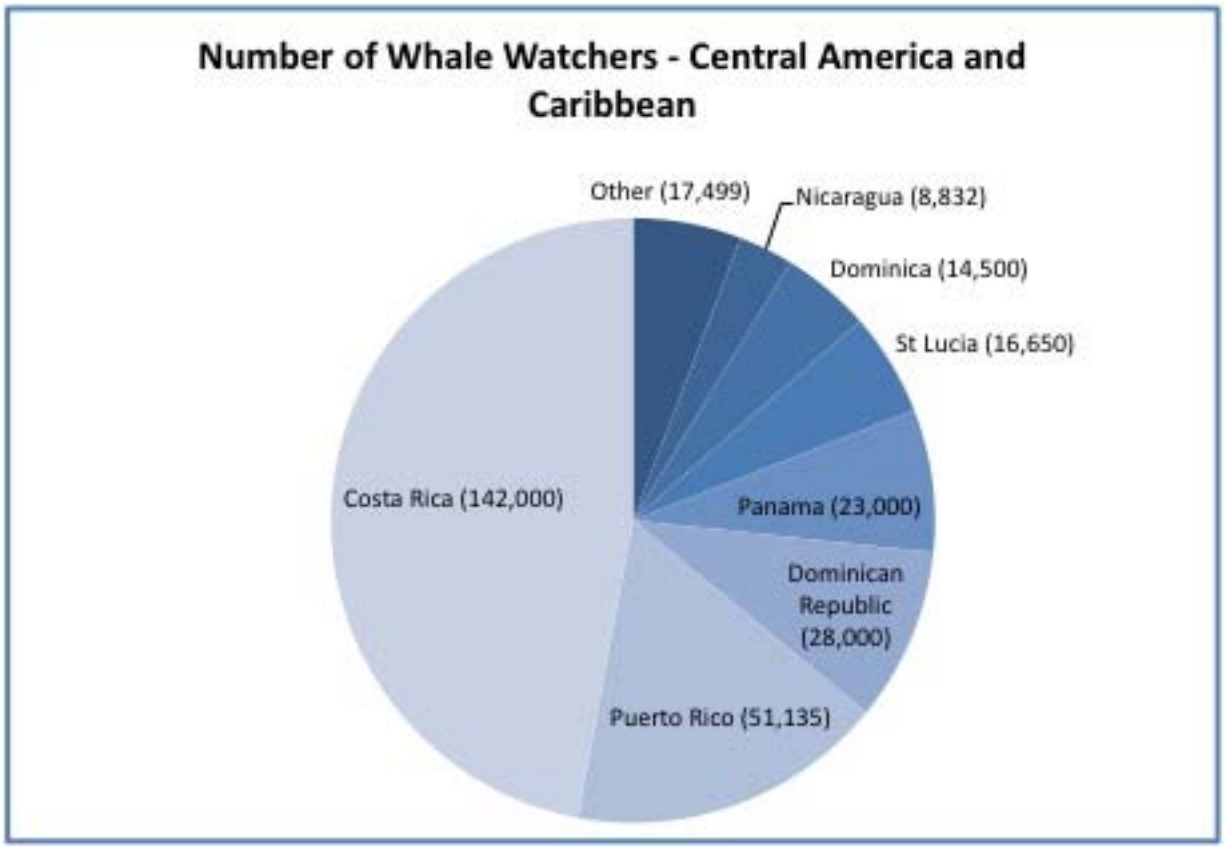
Acknowledgements:
Erich Hoyt and Miguel Iñíguez for their fine work compiling the Latin American whale watch report from which data for this region is largely drawn.

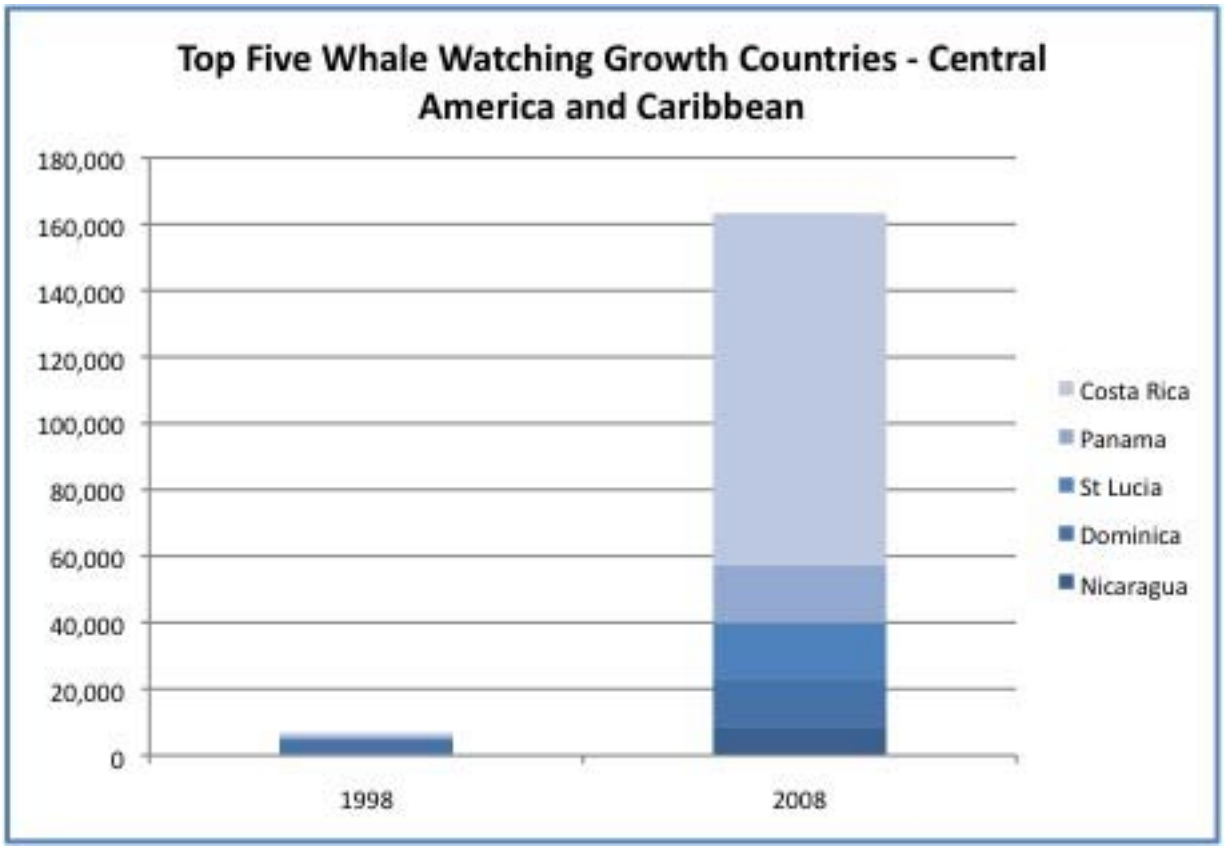
References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Summary of country results

Country	Number of whale watchers		Growth between 1998 and 2008
	1998	2008	AAGR
Antigua and Barbuda	None	500	7.2%
The Bahamas	1800	3,159	5.8%
Belize	339	368	0.8%
Bermuda	180	250	3.3%
British Virgin Islands	200	100	-6.7%
Costa Rica	1,227	105,617	56.1%
Dominica	5,000	14,500	11.2%
Dominican Republic	22,284	28,000	2.3%
Grenada	1,800	3,390	6.5%
Guadeloupe and islands	400	3,650	24.7%
Guatemala	None	800	12.3%
Honduras	Minimal	Minimal	N/A
Jamaica	None	10	N/A
Martinique	Minimal	2,800	27.3%
Netherlands Antilles	200	Minimal	N/A
Nicaragua	None	8,832	56.1%
Panama	Minimal	17,711	53.1%
Puerto Rico	55,000	51,135	-0.7%
St. Kitts and Nevis	50	Minimal	N/A
St. Lucia	65	16,650	74.1%
St. Vincent and the Grenadines	600	2,100	13.3%
Turks and Caicos Islands	1,500	265	-15.9%
US Virgin Islands	75	100	2.9%
REGIONAL TOTAL	90,755	259,437	11.1%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.


Number of Whale Watchers - Central America and Caribbean
Other (17,499)
Nicaragua (8,832)
Dominica (14,500)
St Lucia (16,650)
Panama (23,000)
Dominican Republic (28,000)
Puerto Rico (51,135)
Costa Rica (142,000)


Top Five Whale Watching Growth Countries - Central America and Caribbean
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1998
2008
Costa Rica
Panama
St Lucia
Dominica
Nicaragua

Antigua and Barbuda

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	500	7.2%	3	$28,750	$18,750	$47,500

★ Capital City: Saint John's

Antigua and Barbuda have no dedicated whale watching industry despite cetaceans being regularly seen in local waters. Humpback whales pass by the west coast of Barbuda in the months of December to April.

Nevertheless, due to the presence of whales, there are three main cruise operators who offer a variety of boat cruises around the islands, and when whales are present, will opportunistically include some watching in their cruises. These activities we estimate conservatively at around 500 tourists in 2008, in accordance with operator responses. Pantropical spotted and bottlenose dolphins are seen on trips more regularly than whales, especially in Barbuda.

Main species:	Large cetaceans: humpback whale Small cetaceans: pantropical spotted dolphin, bottlenose dolphin
Tourists:	
International	N/A
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$115
Estimated employment numbers:	3
Main whale watch season:	December to April

Acknowledgements:
Nathalie Ward, Eastern Caribbean Cetacean Network and boat-based operator Eli Fuller from Adventure Antigua.

The Bahamas

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	1,000	N/A	N/A	$1,500,000	$150,000	$1,650,000
1994	1,500	14.5%	N/A	$2,250,000	$225,000	$2,475,000
1998	1,800	4.7%	10	$2,700,000	$270,000	$2,970,000
2008	3,159	5.8%	11	$3,428,364	$554,947	$3,983,310

★ Capital City: Nassau
Whale Watch Locations:
01: Grand Bahama
02: Bimini
03: Abaco Island

The Bahamas are renowned for dolphin watching because of the large numbers of resident dolphins and their tolerance to people swimming with them. The industry in the 80s and 90s focused largely on dolphin swimming north of Grand Bahama, then Bimini and now also includes whale and dolphin watching from Abaco. There are still few organised tourism trips to spot whales – this activity in the area is largely research-based trips. On average, the numbers of people have continued to grow, despite there being a similar number of operators. The average amount each person is paying for a trip has fallen – due to the increase in day trips in the past decade.

There remains substantial untapped potential for whale watching especially in the Out or Family Islands where there is the chance of spotting larger cetaceans as well as the dolphins. However, tourism is generally less developed on these islands so this is likely to need investment in new infrastructure.

The largest segment of the industry is live-aboard trips run directly from the United States. These trips are convenient because some of the islands are very close to US waters and it is mostly US citizens who travel to The Bahamas. Indeed of eleven organisations running dedicated dolphin watching/swim-with activities, five pick-up from Florida by boat and one includes the US to Bimini flight in the package. These trips are extremely popular and have very high occupancy rates – usually running full. The benefits of dolphin tourism to The Bahamas are reduced because these trips are run by US operators out of Florida. Although they are taxed at 4% of gross and pick up supplies from The Bahamas, they create little other spending because the trips are all inclusive and guests live on board the vessels.

Two of the organisations are non-profit and have paying volunteers who assist with their research. There is an emphasis on longer trips - only three operators run day trips and they all also operate multi-day packages. Day trips account for approximately 30% of passenger numbers, but only 5% of direct expenditure.

Some dive trips benefit from opportunistic whale and dolphin sightings and their presence certainly adds to the draw of The Bahamas. This value has not been included in calculations – apart from an estimation of the proportion of those long trips which includes a specific whale watching activity.

Informal land-based whale watching occurs in an ad hoc manner on the Bahamas, however due to the high level of informality, no numbers have been included in this estimate. There has also been an intention to

organise dedicated land-based activities in Abaco, but as yet this has not led to any commercial trips. The three locations with the best potential for land-based watching are Hole-in-the-Wall Lighthouse, Great Abaco; Elbow Cay lighthouse, Great Abaco; and North Bimini. It is estimated that potentially hundreds of people spot dolphins from land thereby adding to the enjoyment of their visit to The Bahamas and some hotels use this possibility in their advertising.

There are three captive dolphin facilities on the islands which have thousands of visitors each year – these are not included in this study. These trips are commonly promoted to cruise ship passengers rather than short trips to see and swim with wild dolphins.

The islands make up one of the wealthiest Caribbean countries with an economy heavily dependent on tourism and offshore banking. Tourism accounts for approximately 60% of GDP and half the labour force when tourism-driven construction and manufacturing is included.

Tourism to The Bahamas has fluctuated over the last decade, especially air arrivals, with some very low years and an overall decline. Most people now visit as part of a cruise, although there are still some 1.5 million non-cruise arrivals. Numbers on cruises stopping at the islands grew strongly until 2004, declined slightly, and remain 65% higher than in 1998. The whale watching sector of the tourism industry seems to be performing reasonably given the overall pattern. The US is the source of more than 80% of visitors.

Main species:	Large cetaceans: *sperm whale, humpback whale, beaked whales (especially Blainville's).* Small cetaceans: *bottlenose dolphin, Atlantic spotted dolphin, Risso's dolphin, short-finned pilot whale, false killer whale, orca, dwarf or pygmy sperm whale*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Boat-based, mostly live-aboard, also day trip. Strong emphasis on education, photography and research
Average ticket price:	$130 for day trips $250 per day for multi-day live-aboard
Estimated employment numbers	11
Main whale watch season:	April to October

Acknowledgements:
Thanks to the Dolphin Communication Project, the Bahamas Marine Mammal Survey and eight operators.

Belize

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	262	N/A	N/A	$460,000	$40,000	$500,000
1998	339	6.6%	N/A	$433,000	$51,000	$484,000
2006	368	1%	1	$155,000	$39,000	$194,000

Capital City: Belmopan

Despite the presence of cetaceans along the country's significant barrier reef, there remains only a low level of whale watching in the country.

One ecotourism operator in Belize has run educational trips that include dolphin sightings since 1992. The multi-day programmes also include bird-watching, snorkelling and hikes through the tropical forest. Several other marine nature tour companies encounter dolphins, but do not offer dedicated dolphin watching trips.

The government is keen to promote eco-tourism, and so there may yet be some further growth in whale watch tourism in Belize.

Main species:	Large cetaceans: *humpback whale, sperm whale* Small cetaceans *Atlantic spotted dolphin, bottlenose dolphin, clymene dolphin*
Tourists:	
International	80%
Domestic	20%
Types of tours:	Boat-based dolphin watching
Average adult ticket price:	$500 (for multi-day ecotourism trips)
Estimated employment numbers:	4
Main whale watch season:	N/A

References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Bermuda

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	120	N/A	N/A	Minimal	Minimal	Minimal
1994	150	7.7%	N/A	$8,000	$18,000	$26,000
1998	180	4.7%	3	$13,000	$7,000	$20,000
2008	250	3.3%	4	$16,900	$15,000	$31,900

Capital City: Hamilton

Bermuda has a short season of humpback whale watching that occurs annually from March to April. Although only four operators are listed, some additional dive operators will also occasionally attempt a whale watching cruise if there is tourist demand, however the numbers of trips tend to be low and sightings can also be inconsistent.

As well as dive operators, the government-owned aquarium and zoo also run some whale watching trips in season, as does the Bermuda Underwater Exploration Institute, although in all cases, numbers are low. It is estimated in 2008 that numbers remain only slightly above 10 years previous, at 250 whale watchers across Bermuda.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *short-finned pilot whale, various dolphin species*
Tourists:	N/A
International	
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$55 (can be much higher where the whole vessel must be chartered)
Estimated employment numbers:	4
Main whale watch season:	March to April

Acknowledgements:
Ondrej Hindl at Blue Water Divers, Wendy Tucker of the Bermuda Underwater Exploration Institute, Andrew Stevenson of Whales Bermuda and Bermuda Tourism

British Virgin Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	300+	N/A	N/A	$10,000	$25,000	$35,000
1998	200	-9.6%	2	$4,000	$10,000	$14,000
2008	100	-6.7%	1	$2,000	$6,000	$8,000

★ Capital City: Road Town
Whale Watch Locations:
01: Tortola

The British Virgin Islands have regular visitation by humpback whales in the first three months of each year. However, there is little in the way of a formal whale watching industry, which from a low start back in the early 1990s, now has become almost non-existent. Responses from dive operators and tourism officials in the country indicated that sightings of whales are too infrequent to justify undertaking dedicated whale watching trips, despite cetaceans being occasionally seen on dive trips.

In earlier research on the British Virgin Islands (Hoyt, 1999), it was noted that most whale watching tours had dried up in the late 1990s, including the previously offered air charters to see whales. One captive dolphin operation does exist in the British Virgin Islands, but is not counted in this study.

One operator remains after many years, running trips to listen to the humpback whales from Tortola Island. This operator runs occasional trips over the season, but doesn't charge for the privilege, beyond some coverage of costs and selling his high quality CD recordings of whales. He reported his numbers were down by around 50% in 2008 after spending less time running the trips (rather than due to any significant drop in demand). This operator records the sounds of humpback whales, and these recordings are distributed around the world on CD.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin*
Tourists:	
International	> 90%
Domestic	<10%
Types of tours:	Boat-based
Average adult ticket price:	N/A
Estimated employment numbers:	1
Main whale watch season:	January to March

Acknowledgements:
Paul Knapp of Whale Listening Tours, Jeff McNutt of Dive BVI, and British Virgin Islands Tourism Board.

Costa Rica

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	100+	N/A	N/A	$200,000	$50,000	$250,000
1998	1,227	87.2%	N/A	$100,000	$118,000	$218,000
2006	105,617	74.5%	52	$5,318,487	$15,842,550	$21,161,037

★ Capital City: San José
Whale Watch Locations:
01: Bahía Drake
02: Quepos
03: Manzanillo

Costa Rica is the fastest growing whale watch area in Latin America. Costa Rica's long Pacific coastline, with numerous gulfs and bays, provides a habitat for coastal cetaceans and good spots for whale watching. Growth in whale watching is being driven by an increase in overall tourism, which is outpacing the rest of Central America. This is most likely due to Costa Rica's political stability and efforts to establish and publicise its extensive national park system. The growth in tourism is being led by US tourist numbers, which have nearly doubled in five years.

Most whale and dolphin watching occurs on the Pacific coast, and is centred on Bahía Drake and Quepos. Most businesses are small and owner-operated. Visitors can expect to see humpback whales, bottlenose dolphins, pantropical spotted dolphins and spinner dolphins, and false killer whales. Prices for boat-based trips are around $20 Bahía Drake; Quepos is more expensive, and tours cost around $60.

Seven operators have begun trips on the Caribbean coast, around Manzanillo. These trips are focused on smaller cetaceans, mainly bottlenose and Atlantic spotted dolphins, short-finned pilot whales and tucuxi (marine). Boat-based trips here cost around $30.

Main species:	Large cetaceans: *blue whale, humpback whale* Small cetaceans: *Atlantic spotted dolphin, bottlenose dolphin, false killer whale, pantropical spotted dolphin, spinner dolphin, tucuxi*
Tourists:	
International	Mainly international, from USA
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$45
Estimated employment numbers:	104
Main whale watch season:	December to March (main tourist season)

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Dominica

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	14	N/A	1	$14,000	$0	$14,000
1994	1,100	328.3%	1	$50,000	$333,000	$383,000
1998	5,000	46%	4	$127,000	$843,000	$970,000
2008	14,500	11.2%	4	$585,000	$1,200,000	$1,785,000

★ Capital City: Roseau
Whale Watch Locations:
01: Roseau
02: Portsmouth

Dominica is a mountainous country whose topography continues underwater in the sea surrounding the islands, creating deep ocean trenches close to shore. These trenches, combined with the warm, sheltered waters of the island's west coast, have made this area an ideal mating and calving ground for the animal kingdom's most proficient diver, the deep feeding sperm whale. One group of these whales is thought to remain in local waters year round. Dominica also plays year-round host to Cuvier's beaked whales and seven species of dolphin, including the short-finned pilot whale, melon-headed whale, false killer whale, dwarf and pygmy sperm whales, pantropical spotted, spinner and Fraser's dolphins, though some of these species are elusive and seldom glimpsed. In addition, migratory species such as Bryde's and humpback whales, also grace these waters from November to April. As a result, the country is now the premier site for whale watching in the eastern Caribbean with a history of whale watching going back to the early 1990s (see local case study below).

Since the last global review of whale watching, tourist arrivals to Dominica have comfortably doubled, and whale watching has kept abreast of this change, with approximately 5,000 whale watchers in 1998 growing to 14,500 in 2008. Ticket prices have stayed reasonably constant in this time, but the swell in numbers has nevertheless resulted in a growth in direct expenditure from $127,000 to approximately $585,000.

The two original whale watching companies continue to service the bulk of the Dominican whale watching industry, with the two smaller operators taking fewer tourists on slightly longer tours. Of these companies, three operate from Roseau on the island's southwest coast. The fourth, run by Fitzroy Jones - the original pioneer of Dominican whale watching – operates non-invasive whale, dolphin and turtle research safaris along the northwest coast out of Portsmouth.

As cruise ship-based tourism tends to dominate Dominica's general tourist influx - bringing seven to eight times as many visitors to Dominica in 2007-8 as arrived by plane - the indirect expenditure attributable to whale watchers is disproportionately low. Tour operators report that between 50-90% of their whale watching patrons are from cruise ships. Dominica's lack of direct air connections to its main tourist source countries doubtless continues to strongly affect these proportions. However, this also limits the developmental impact that tourism has had upon Dominica's environment, in contrast to many of its

neighbours, earning it the reputation of the 'nature isle of the Caribbean' and facilitating the eco-friendly and responsible way in which the whale watching industry has developed.

Main species:	Large cetaceans: *sperm whale, Bryde's whale, Cuvier's beaked whale, humpback whale* Small cetaceans: *dwarf sperm whale, pygmy sperm whale, short-finned pilot whale, false killer whale, melon-headed whale, pantropical spotted dolphin, spinner dolphin, Fraser's dolphin*
Tourists:	
International	85%
Domestic	15%
Types of tours:	Boat-based short trips generally from resorts
Average adult ticket price:	$45
Estimated employment numbers:	20
Main whale watch season:	November to April

Acknowledgements:
Captain Billy Lawrence, Derek Perryman, Fitzroy Jones Armour and Palesa Leevy-Jolly

Local Case Study: Dominica

According to apocryphal legend, when Christopher Columbus was asked to describe the island he had named after the day of the week upon which he encountered it – Dominica – he roughly crumpled a piece of parchment and tossed it upon the table, indicating its mountainous nature and absence of flat land.

Indeed, the youngest island of the lesser Antilles, Dominica is still in the process of being formed by volcanic activity as may be seen with its famous boiling lake – the second largest hot spring in the world. The resultant vertical topography, reflected in the pre-Columbian indigenous Carib name for the island – 'Wai'tu kubuli', meaning 'Tall is her Body' - served to limit cultivation and development of the landscape during the intermittent British Colonial era and consequently Dominica boasts a greater proportion of pristine rainforest wilderness than its more developed neighbours, affording it the unofficial title of the 'Nature Isle of the Caribbean'.

This same topography continues underwater in the sea surrounding the islands, creating deep ocean trenches close to shore which, combined with the warm, sheltered waters of the island's west coast, make this ideal cetacean territory.

Whilst running dive tours for the Anchorage Hotel, Fitzroy Armour began noticing the interest divers showed in the whales sighted which, combined with Fitzroy's own interest in these animals as a naturalist and photographer, led him to begin whale watching tours in 1988. Some five years later Derrek Perryman and Captain Billy Lawrence became interested in the promise of whale watching and began including it in some of their diving packages, and in 1995 the company for which they worked, Dive Dominica, began its first commercial whale watching tours.

Today, Dominica has one of the largest boat-based commercial whale watching industries in the Caribbean, taking nearly 15,000 tourists in 2008. Along with St Lucia, the Dominican Republic and Puerto Rico, it has firmly established whale watching as a significant tourist attraction in the region.

The industry has been proactive in its self-management in a manner not frequently seen, but is likely to be a partial reason for its continuing success as it has a unique ability to provide a quality tourism experience.

As noted by Hoyt (1999), the development of the whale watching industry in Dominica has maintained a strong emphasis upon education and conservation, with multiple workshops between operators, scientists and government officials, including the close involvement of IFAW.

In the absence of laws regulating whale watching, the Dominican operators have generally adopted and complied with their own modified system of international regulations which they have termed the Marine Mammal Code of Conduct. The Dominica Fisheries Division is, at the time of writing this report, in the process of developing regulations to formalise the good management of whale watching, which has been submitted to parliament.

Although there are only four operators undertaking whale watch trips in Dominica, all are members of the pan-Caribbean cooperative organisation, CARIBwhale. This industry association was founded in 2000 and formally incorporated in 2007 by over 15 whale watching organisations from various Caribbean nations in conjunction with IFAW. The organisation is dedicated to fostering an environment that will conserve cetaceans and their habitat, promoting responsible whale watching and support non-invasive scientific research, education and community involvement.

Such a strong commitment from the entire industry ensures a continuing high standard of whale watching in the country.

Dominican Republic

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	900	N/A	N/A	$10,000	$60,000	$70,000
1994	15,300	32.8%	N/A	$500,000	$3,000,000	$3,500,000
1998	22,284	3.8%	N/A	$2,307,000	$2,893,000	$5,200,000
2008	28,000	2.3%	33	$5,215,000	$3,712,000	$8,927,000

★ Capital City: Santo Domingo
Whale Watch Locations:
01: Samaná
02: Puerto Plata

The Dominican Republic remains the premier site in the Caribbean for whale watching, with 33 companies operating 46 boats taking approximately 28,000 passengers cetacean viewing in 2008. The industry in the country attracts the largest number of whale watchers in the Caribbean owing to the large numbers of humpback whales that migrate in the winter months to the warm shallow waters along the north coast of the island to mate and calve.

There are three principal areas within the Dominican Republic's territorial waters in which these whales congregate; Samaná Bay, located in the Republic's north east, and the adjacent Silver and Navidad Banks, jointly located approximately 100 kilometres northwest of the Samaná peninsula. All three areas are included in the Sanctuary for the Marine Mammals of the Dominican Republic that was established in 1999, enlarging the previous Silver Bank Sanctuary that was founded in 1986.

The whale watching season occupies three months from January to March, encompassing the time during which humpbacks reside in the marine sanctuary, though other cetacean species share these waters with their larger and more popular relative, including pantropicalspotted, spinner and bottlenose dolphins as well as short-finned pilot whales.

The Samaná Bay area is home to the vast majority of the island's whale watching activity, with 10 whale watch and marine transport companies that run multiple boats and 20 individuals operating single vessels – totalling a combined fleet of 43 vessels – running trips from 6 different ports around the bay - Samaná, Plaza Simi Báez, Las Galeras, Cayo Levantado, Carenero, Caletón - with Samaná port the home to most of these businesses. Over 95% of the Republic's whale watchers (more than 27,000 tourists) take their trips in the Samaná Bay area, generating over $3.6 million in direct expenditure in 2008, of which $82,000 went in entrance fees to the marine sanctuary itself.

In the Silver Bank and Navidad Bank areas, three vessels run six-day, seven-night all-inclusive live-aboard tours, departing from Puerto Plata on the island's north coast. These tours are considerably more expensive, averaging $2600 plus 15% tips, and cater to a smaller group of tourists. Silver Bank whale watch companies took approximately 500 passengers whale watching in the 2008 season, generating more than $1.5 million in direct expenditure, of which approximately $50,000 went to the marine sanctuary in entrance fees. These longer trips feature 'soft-in-water' encounters with humpback whales, where passengers enter the water and float passively near whale pods without diving or swimming towards them, enabling those whales that are curious to approach and interact with the swimmers of their own volition.

Every vessel entering the marine sanctuary requires a permit. In Samaná there are two classes of permit according to vessel size – categorised as Lanchas and Barcos respectively - with the former costing $200 and the latter $400. Permits for Silver Bank, of which there are three, are $2,500 dollars each. Thus the total revenue raised by boat permits for the Marine Sanctuary exceed $20,000 each season, on top of the revenue generated by park entrance fees, pushing the total revenue including these fees to over $150,000. In addition, there is a thriving cetacean-based souvenir industry in Samaná selling t-shirts, caps, jewellery, videos and CDs of whale songs which is likely to inject millions more dollars into the local economy.

The Centre for the Conservation and Ecodevelopment of Samaná Bay and its Environs (CEBSE), an NGO focused on the conservation of biodiversity, sustainable development and community participation and education, took over the organisation and regulation of whale watching in 1998 - including revising the guidelines for whale watching practices and monitoring and policing them, educating whale watch operators and administrating whale watch permits - continuing the previous work of the Intergovernmental Management Committee for the Silver Bank Marine Sanctuary (Comisión Rectora). CEBSE works cooperatively with the Association of Boat Owners, the director of National Parks, the Secretary of Tourism and the Ministry of Environment and has facilitated a co-management system for the whale watching industry involving all stakeholders.. CEBSE relies heavily upon local and international volunteers to supplement its education and monitoring programmes where funding is insufficient to fully finance these operations, continuing the comprehensive role that Hoyt noted volunteers have had in managing the Dominican Republic's whale watching industry (Hoyt, 1999).

Whale watching in the Dominican Republic has experienced modest growth in the decade since IFAW's 2001 report, expanding at a slightly greater rate than the growth in tourism generally, it is reported to have reached annual numbers of 30,000 whale watchers in 2004 and 2005.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *pantropical spotted dolphin, bottlenose dolphin, short-finned pilot whale*
Tourists:	
International	90%
Domestic	10%
Types of tours:	2 to 4 hour boat-based trips, predominantly part of all- inclusive tours from resorts and cruise ships, and week long, live aboard tours.
Average adult ticket price:	$80 day tour $2,600 for a week long live-aboard trip.
Estimated employment numbers:	99
Main whale watch season:	October to May

Acknowledgements:
Grateful acknowledgement to Kim Beddall, a founding member of CEBSE and operator, Patricia Lamelas, the current president of CEBSE, and Idelisa Bonnelly de Calventi, President of FUNDEMAR.

Grenada

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	1,800	N/A	2	$90,000	$180,000	$270,000
2008	3,390	5.8	1	$203,500	$82,400	$285,900

★ Capital City: St. George's

Grenada, is the Windward Isle south of the Grenadines chain in the eastern Caribbean. It has a well-developed tourism industry attracting around 120,000 visitors each year and an increasingly number of cruise passengers. The waters around Grenada have small whales and dolphins all year round and humpbacks from December to March. The humpback season coincides with the high season for both hotels and cruises making whale watching trips very popular.

One commercial operator runs boat-based trips out of St George's for four hours to see whales and dolphins off the three islands that comprise the nation of Grenada. Another boat operator who once ran both fishing and whale watching no longer runs trips. The Kido Project which also previously included whale watching on a small catamaran, now concentrates on education about whales with the local communities and does not run trips.

The existing operator has good links with hotels and cruise ships. During high season, trips for the cruises will go out four or more times a week with over 30 passengers with additional trips for tourists staying on the island – two on average. Outside of high season there is usually only one trip a week. Indirect expenditures are low because of the high proportion of cruise ship passengers who have little additional expenditure on the islands. At present the majority of the whale watchers in Grenada come from cruise ships (estimated at 85%). This is very different to 1998 when cruise arrivals were not a major source of customers.

Cruise visits to Grenada have nearly doubled in five years to 292,700, whereas tourist arrivals of 123,770 in 2008 are only about 10% above their 1998 level after an initial strong increase. Half of all visitors come from two countries - the United States and United Kingdom - with a substantial proportion from other Caribbean countries. At least one resort advertises whale watching as part of its attractions and their clients can go on one whale watching trip as part of some of their packages.

Main species:	Large cetaceans: *humpback, sperm whale* Small cetaceans: *spinner dolphin, pantropical spotted dolphin, bottlenose dolphin, Fraser's dolphin*
Tourists:	
International	100%
Domestic	0%

Types of tours:	Day boat trips from resorts and cruises.
Average ticket price:	$75 for day trips, less from cruises.
Estimated employment numbers:	1
Main whale watch season:	October to May

Acknowledgements:
Thanks to one operator, the Kido Project on Cariacou and one resort.

Guadeloupe and islands (including St. Martin and St. Barthélemy)

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1998	400	N/A	3	$13,000	$10,000	$23,000
2008	3,650	24.7%	2	$283,000	$548,000	$831,000

★ Capital City: Basse-Terre

Two main operators undertake trips to watch whales in Guadeloupe. Cetaceans are accessible for most of the year, including pantropical spotted dolphins as well as sperm whales, pygmy sperm whales, humpback whales and short-finned pilot whales.

The two main operators are responsible for a rapid expansion in the numbers of whale watch tourists in the last decade, when the whale watching activities had just begun, growing at an average rate of 25% per annum to nearly 4,000 tourists in 2008.

Despite humpback whales travelling past St. Barthélemy, there was no indication of any operator undertaking regular whale watching trips. In previous studies, one dedicated operator had been identified in this location.

Main species:	Large cetaceans: *humpback whale, sperm whale, pygmy sperm whale* Small cetaceans: *Pantropical spotted dolphin, short-finned pilot whale*
Tourists:	
International	N/A
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$96
Estimated employment numbers:	2
Main whale watch season:	Year round

Acknowledgements:
Evasion Tropicale and Heures Saines.

Guatemala

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2006	800	15.6%	1	$104,000	$48,000	$152,000

★ Capital City: Guatemala City
Whale Watch Locations:
01: Pacific Coast

Despite having some good opportunities for whale watching, a whale watching industry has been slow to develop in Guatemala.

In late 2005, operators began offering whale and dolphin watching on its Pacific coast. Following considerable support from NGOs, one whale watch operator is now offering boat-based whale and dolphin watching trips. The trips last up to six hours and target bottlenose, spinner and pantropical spotted dolphins year round, along with humpback whales in the high season (December to April).

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *bottlenose dolphin, pantropical spotted dolphin, spinner dolphin*
Tourists:	
International	20%
Domestic	80%
Types of tours:	Mainly boat-based, two land-based sites under development
Average adult ticket price:	$130
Estimated employment numbers:	15
Main whale watch season:	December to April

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Honduras

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2006	Minimal	N/A	2	Minimal	Minimal	Minimal

★ Capital City: Tegucigalpa
Whale Watch Locations:
01: Utila

Honduras has only minimal whale watching activities. With the consistent sightings of dolphins, however, some activities do make the most of opportunities to observe these animals. Dolphin sightings are a regular feature of dive operations and some marine boat operators (non-dive) market the possibility of seeing dolphins as part of their cruises.

Some university research-based trips have also been undertaken to observe and monitor the dolphins. As with the tourist cruises, this is based predominantly in the Bay of Islands. The research trips were offered around the island of Utila. The 2008 report by Hoyt and Iñíguez stated that in 2006, 12 students paid approximately $2,400 in direct and $15,600 in indirect expenditure to work with the wild dolphins.

Main species:	Small cetaceans: *bottlenose dolphin, tucuxi (marine), various tropical dolphins*
Tourists:	
International	90%
Domestic	10%
Types of tours:	Boat-based
Average adult ticket price:	N/A
Estimated employment numbers:	2
Main whale watch season:	Year round

References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Jamaica

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2008	10	N/A	1	$1,000	$1,500	$2,500

★ Capital City: Kingston
Whale Watch Locations:
01: Negril

An operator in Jamaica, based in Negril, has recently begun taking dedicated whale watching trips to see sperm whales around 12 miles off shore. In 2008 the company experimented with the tours, using a fishing charter vessel, after the owner had experienced close up interaction with sperm whales on his own fishing trips. The same operator reports regular opportunistic sightings of dolphins around dive sites, with dolphins encountered on average twice per week.

Jamaica has not previously been identified as a whale watching location, but with some further marketing of the opportunity here, there is certainly room for growth in line with some of the other Caribbean islands' significant industries, particularly in light of the large existing tourism industry.

Main species:	Large cetaceans: *sperm whale* Small cetaceans: *dolphins - various species*
Tourists:	
International	N/A
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$100
Estimated employment numbers:	1
Main whale watch season:	year round

Acknowledgements:
David Wallace at Negril Scuba.

Martinique

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	100+	N/A	N/A	Minimal	Minimal	Minimal
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2008	2,800	27.3%	~2	$191,000	$421,000	$612,000

★ Capital City: Fort-de-France

Despite the opportunities of the mature tourism industry, the many dive operators, and the presence of whales and dolphins especially off the west coast of Martinique, there remains only a small whale watching industry.

However, one dedicated dolphin and whale watch operator undertakes trips to see a variety of cetaceans, most commonly seeing Atlantic spotted dolphins, Fraser's dolphins, humpback and sperm whales, guaranteeing sightings for passengers. These trips are in a small vessel, with an average ticket price of $68. Other cetacean sightings occur frequently as part of dive trips, with dolphins most commonly seen.

Earlier research on Martinique (Hoyt, 1999) found great potential for whale watching, with cetaceans being accessible to the islands, especially from the coastal village of Le Prêcheur. Sperm whales have been recorded off the coast, and spinner dolphins are commonly seen. In fact, 14 species of cetacean have been recorded around the island.

Main species:	Large cetaceans: *Humpback whale, sperm whale* Small cetaceans: *spinner dolphin, Atlantic spotted dolphin, Fraser's dolphin*
Tourists:	
International	> 95%
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$68
Estimated employment numbers:	2
Main whale watch season:	N/A

Acknowledgements:
Evasion Tropicale

References:
Hoyt, E 1999, *The Potential of Whale Watching in the Caribbean: 1999+.* Whale and Dolphin Conservation Society, Bath, UK, 81 pp.

Maillard, J 2004, 'Orientations Régionales de Gestion de la Faune sauvage et d'amélioration de la qualité de ses Habitats - Région Martinique - Etat des Lieux', Office National de la Chasse et de la Faune Sauvage et Direction Régionale de L'Environnement Martinique

Netherlands Antilles – Aruba, Bonaire, Curaçao and St. Maarten

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	200	N/A	1	Minimal	Minimal	Minimal
2008	Minimal	N/A	N/A	Minimal	Minimal	Minimal

★ Capital City: Willemstad
Whale Watch Locations:
01: Bonaire

In 1998, Bonaire was identified as having an estimated 200 whale watchers who interacted with whales and dolphins purely in an opportunistic manner as part of dive trips. There was no formal dedicated whale or dolphin watching industry. Largely this remains the case today, apart from a small number of cruises that focus on dolphin watching as a highlight. One operator in particular offers a sunset cruise to watch the dolphins, however the total numbers of tourists for these cruises remain minimal.

Research for 2008 indicates no increase in whale watch numbers across the Netherland Antilles including the ABC islands of Aruba, Bonaire, Curacao (near Venezuela) and St. Maarten (as well as the small islands of Saba and St. Eustatius) part of the broader Antilles in the eastern Caribbean. There remains some opportunistic watching of dolphins but no formal industry has developed in the past 10 years.

Responses to this research indicated that cetaceans continue to be occasionally seen, particularly in Bonaire, and if seen on route to a dive site, operators will slow down to watch the dolphins.

Main species:	Small cetaceans: *spinner dolphin, long-beaked common dolphin*
Tourists:	
International	N/A
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$33
Estimated employment numbers:	N/A
Main whale watch season:	year round

Acknowledgements:
Jack Chalk at Habitat Bonaire, Ramón de León of the Bonaire National Marine Park, Tourism Bonaire, Curaçao Tourism.

Nicaragua

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2006	8,832	56.1%	30	$719,808	$1,324,800	$2,044,608

★ Capital City: Managua
Whale Watch Locations:
01: San Juan del Sur

Whale and dolphin watching is new to Nicaragua, but several diving and nature cruise companies are now offering trips that include cetacean viewing. Many local fishermen are also taking advantage of increased tourism on the Pacific coast by running informal trips. These activities are based at San Juan del Sur, one of the main tourism towns on the Pacific coast. Humpback whales are targeted during the winter season, while dolphins are sighted year round.

Main species:	Large cetaceans: *humpback whale* Small cetaceans: *pantropical spotted dolphin*
Tourists:	
International	Mainly international
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$81
Estimated employment numbers:	30
Main whale watch season:	September to March for whales, year-round for dolphins

References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Panama

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2006	17,711	70.3%	81	$448,025	$2,692,350	$3,140,375

Capital City: Panama City
Whale Watch Locations:
01: Archipelago Bocas del Toro
02: Isla Iguana

Panama's cetacean watching industry was established in the late 1990s and has grown quickly, along with both general tourism and a focus on national parks and ecotourism. Most cetacean watching activity occurs on the Archipelago Bocas del Toro off the Caribbean coast, where some 16,000 visitors a year watch bottlenose dolphins. The area has over 200 boats that offer snorkelling, scenic cruises and dolphin watching.

Several locations on the Pacific coast offer boat-based whale and dolphin watching trips. Trips encounter bottlenose, pantropical spotted and spinner dolphins, along with humpback, sperm, Cuvier's beaked and short-finned pilot whales and occasionally orcas. The main locations are Isla Iguana, where 15 fishermen offer whale watch tours, and Isla Coiba, a former prison island that now attracts tourists on tours that include dolphin watching in the surrounding national park.

Main species:	Large cetaceans: *humpback whale, sperm whale* Small cetaceans: *Atlantic spotted dolphin, bottlenose dolphin, Cuvier's beaked whale, pantropical spotted dolphin, short-finned pilot whale, spinner dolphin*
Tourists:	
International	Mainly international
Domestic	
Types of tours:	Boat-based, short trips
Average adult ticket price:	From $15 to $150 depending on location and nature of the tour
Estimated employment numbers:	81
Main whale watch season:	December to April (main tourist season)

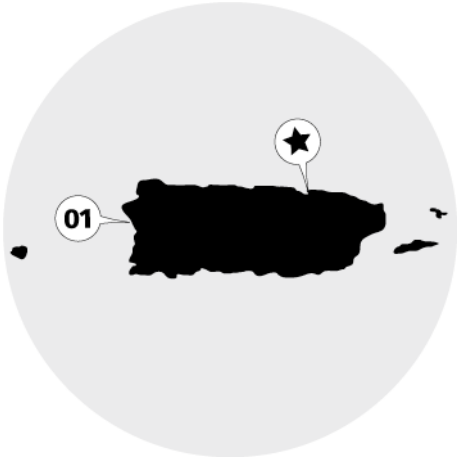
References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Puerto Rico

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1998	55,000-130,000	N/A	N/A	Minimal	Minimal	Minimal
2008	51,135	-0.7%	2	$56,750	$920,250	$977,000

★ Capital City: San Juan
Whale Watch Locations:
01: Rincón



Puerto Rico is in the fortunate position of being an important highway for migrating humpback whales that pass through the Mona Passage at the western end of the country each year between January and April, coinciding with the peak tourism season.

Making the most of this good fortune, many of the guesthouses located along the coast in this region, particularly around Rincón, advertise that fact that they can see whales from their front doorsteps. In this region, a small number of boat-based operators include whale watching in their cruises at this time of year, particularly on sunset cruises. These operators took an estimated 1,135 tourists on whale watching cruises in 2008 with an average ticket price of $50.

The larger numbers of whale watchers for Puerto Rico come to watch these marine mammals from the various land-based locations where whales are easily seen, in particular, the Rincón Lighthouse and Observation Park (Parque El Faro de Rincón). Situated at an ideal location, overlooking the Mona Passage, the vantage point is perfect for watching the passing humpbacks in the winter months. Earlier reports on this region's whale watching industry indicated up to 500,000 people visit this lighthouse each year, with land-based whale watchers over the four key months being estimated at 50,000 to 125,000. Research undertaken for 2008 finds the lighthouse still a popular whale watching location for locals and tourists alike, and, combined with some numbers for other locations near Rincón, we maintain estimates of 50,000 land-based whale watchers in 2008.

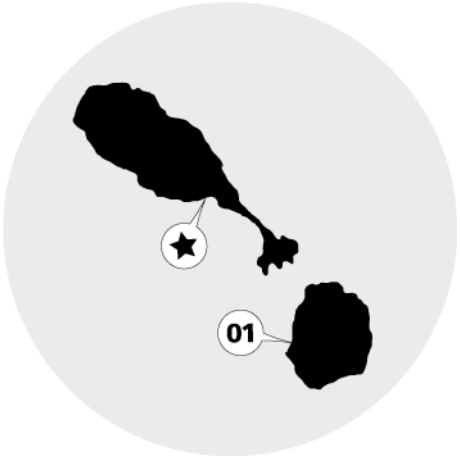
Main species:	Large cetaceans: *humpback whale*
Tourists:	
International	50%
Domestic	50%
Types of tours:	Boat-based and land-based
Average adult ticket price:	$50 (for boat-based)
Estimated employment numbers:	2
Main whale watch season:	January to April

Acknowledgements:
Steve Lantz, President of the Tourism Association of Rincón, Katarina Charters and Coconut Palms Inn

St. Kitts and Nevis

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	50+	N/A	1	Minimal	Minimal	Minimal
2008	Minimal	N/A	1	Minimal	Minimal	Minimal

★ Capital City: Basseterre
Whale Watch Locations:
01: Nevis



Small-scale dedicated whale and dolphin watching trips have been offered from the island of Nevis, for more than ten years. These trips take advantage of humpback migration from January to April near Nevis as well as resident populations of dolphins and other whales. Whilst these trips are still offered, 2008 through into early 2009 was a very poor time for tourism on the island and so no dedicated whale watching trips were run. The one operator instead concentrated on its core business of scuba-driving.

In a good year, such as 2006, a couple hundred tourists book onto specialised half-day whale watching trips. These are a 3 ½ hour educational tour, including the use of a hydrophone, on small boats (capacity of either 14 or 25) and are aimed at the humpback migration season.

There is also a telescope especially made for whale watching on Saddle Hill, but this is not part of organised tours or formal monitoring. None of the dive or charter companies based at St. Kitts offer dedicated trips, although whales and dolphins are often spotted during their other trips.

Both St. Kitts and Nevis have potential for whale watching but this will depend on the development of tourism more generally. Nevis is not a cruise destination, although St. Kitts is (150,000 arrivals in 2004) and stop-over arrivals for the nation are low in comparison to other destinations (91,700 in 2004). However this comparative isolation could provide its own opportunities if whale watching was marketed as part of an eco-tourism trip to those willing to pay more for an exclusive visit.

Main species:	Large cetaceans: *humpback whale, fin whale* Small cetaceans: *spinner dolphin, bottlenose dolphin*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Boat-based day trips
Average ticket price:	$50
Estimated employment numbers	1
Main whale watch season:	January to April

Acknowledgements:
Thanks to Ellis Chaderton, operator.

St. Lucia

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	65	N/A	2	$4,500	$3,500	$8,000
2008	16,650	N/A	4	$832,500	$744,510	$1,577,010

★ Capital City: Castries
Whale Watch Locations:
01: Soufrière Bay

St. Lucia is one of the Windward Isles in the Eastern Caribbean and has dolphins and whales present near its coasts throughout the year. There are higher numbers of sperm whales between October to January and humpback whales only from January to April and the drier weather for much of these periods makes it a good time for trips. Some of the best locations are Soufrière Bay off the southwest of the island and the waters north-west of St. Lucia towards Martinique. These are readily accessible to the main tourist areas on the island.

The whale watching business has grown rapidly from its start about ten years ago and now is one of the larger in the Caribbean. The St. Lucia Whale and Dolphin Watching Association, formed in 1997, encouraged operations withits goal to “ensure the well being of both the whales and small boat operators”.

Four operators offer dedicated whale watching trips, but these are not their sole business. Instead the trips are offered as part of a range of boat trips, charters and fishing. The larger two operators are equipped to offer large capacity trips to the cruise ships and also run trips aimed at the hotel trade. The development of the industry has happened alongside a major increase in tourism since the 1980s. Cruise arrivals are still increasing and are more than double those of a decade ago, with 622,680 arrivals in 2008. Tourist numbers are nearly 20% up on 1998 at 295,760, although this is a slight fall from a peak in 2005.

The ability to cater for cruise passengers along with the growth of the cruise market in St. Lucia has been excellent for the development of the whale watching industry. Cruise numbers are expected to remain at a high level at least through the next few years which bodes well for the business.

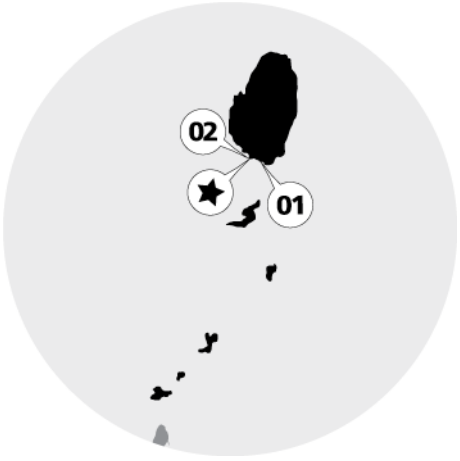
Main species:	Large cetaceans: *sperm whale, humpback whale* Small cetaceans: *spinner dolphin, pantropical spotted dolphin, short-finned pilot whale*
Tourists:	
International	100%
Domestic	0%
Types of tours:	Day trips
Average ticket price:	$50
Estimated employment numbers:	4
Main whale watch season:	October to May

Acknowledgements:
Thanks to two operators.

St Vincent and the Grenadines

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	800	N/A	2	$24,000	$129,000	$153,000
1998	600	-6.7%	2	$34,000	$66,000	$100,000
2008	2,100	13.4%	2	$88,200	$118,200	$206,400

★ Capital City: Kingstown
Whale Watch Locations:
01: Arnos Vale
02: Kingstown



St. Vincent and the Grenadines have two commercial operators running dedicated day trips to watch dolphins and whales out of Arnos Vale and Kingstown on St. Vincent. Both operators have now run trips for many years but numbers have increased substantially the last decade with an average annual increase of 13.4%. Dolphins and whales are found in the waters of St. Vincent and the Grenadines all year round, while sperm and humpback whales are seasonal visitors. The trips have an excellent 80% sighting success rate for dolphins from April to September.

St. Vincent and the Grenadines tends to appeal to the more exclusive tourist partly because there are no direct flights from the US or Europe, with about a third of visitors to the islands arriving by yacht. Tourist stays on the island chain initially increased in the early part of the decade, but then fell back to lower levels with air arrivals around 65,000 in 2008 (Caribbean Tourism Organisation). As with many Caribbean islands, cruises are an important section of the tourism market. In St. Vincent cruise arrivals fell from a peak in 2006 of 106,474 to 67,537 last year - partly due to hurricane damage to the cruise terminal.

One whale watch operator has capitalised on the cruise market to St. Vincent up until 2006 by using a large capacity boat for up to 65 people at a time. The other operator, having smaller boats, has been more successful with the hotel market. The focus on the cruise market has resulted in excellent growth with an estimated 3 cruise passengers for every 1 hotel guest, despite the decline in cruises last year. As for all destinations, the cruise market brings in low per person indirect expenditure so has a lower benefit to the St. Vincent economy.

There is still plenty of room for growth for trips aimed at the cruise market if numbers return to the recent highs. A possible difficulty for expanding out of the day trip market or to other islands may arise from the existence of small scale commercial whaling of short-finned pilot whales and the allowance by the International Whaling Commission of an indigenous hunt for four humpback whales each year by islanders of Bequia, one from the Grenadines. However, a pro-whaling stance has not prevented whale and dolphin watching industries developing in Japan, Norway and Iceland.

Main species:	Large cetaceans: *humpback whale, sperm whale* Small cetaceans: *spinner dolphin, pantropical spotted dolphin, bottlenose dolphin, Fraser's dolphin*
Tourists:	
International	100%
Domestic	
Types of tours:	Short trips for hotel and cruises
Average ticket price:	$30-50 for day trips
Estimated employment numbers:	2
Main whale watch season:	October to May

Acknowledgements:
Thanks to two operators.

References:
Hoyt, E 1999, *The Potential of Whale Watching in the Caribbean: 1999+.* Whale and Dolphin Conservation Society, Bath, UK, 81 pp.

Turks and Caicos Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	100+	N/A	N/A	$10,000	$25,000	$35,000
1998	1,500	96.8%	2	$43,000	$107,000	$150,000
2008	265	-15.9%	3	$16,600	$16,000	$32,600

★ Capital City: Grand Turk (Cockburn)
Whale Watch Locations:
01: Salt Cay
02: Providenciales

Tourism in the Turks and Caicos has been severely affected by the hurricane of Sept. 2008, including an operator who had his boat destroyed. This has had a direct impact on whale watching in 2009 with more general cruise and dive operations on the islands reporting some vessel damage. As a result, numbers of whale watchers may temporarily drop as compared to 1998. However, the industry, as of 2008 before the storm, seemed in fact much the same as a decade ago, with a few operators undertaking dedicated whale watching trips, and many other dive operators who will take trips to see whales when there is demand with numbers reported by operators at a much lower level.

2007 was however reportedly a much bigger year for whale watching compared to the 2008 season. It is likely therefore that future seasons will see numbers increase again. As identified in previous research (Hoyt, 1999), there is great opportunity for whale watching in the Turks and Caicos.

Humpback whales are present in the waters around the islands in January to March, with most whale watching trips being undertaken from Salt Cay and Grand Turk, and less frequently Providenciales (Provo). One particularly friendly dolphin by the name of JoJo is resident in and around Provo where he regularly entertains tourists with his friendly ways. No whale watching has been counted for JoJo.

Main species:	Large cetaceans: humpback whale Small cetaceans: bottlenose dolphin
Tourists:	
International	100%
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$65
Estimated employment numbers:	3
Main whale watch season:	January to March

Acknowledgements:
Salt Cay Divers, Green Flash Tours and Pirate's Hideaway.

US Virgin Islands

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	500	N/A	N/A	$23,000	$57,000	$80,000
1998	75	-37.8%	2	$3,500	$4,500	$8,000
2008	100	2.9%	1	$6,500	$12,000	$18,500

★ Capital City: Charlotte Amalie
Whale Watch Locations:
01: St. Thomas

The US Virgin Islands, in much the same manner as the British Virgin Islands, have regular visitation by humpback whales over a few short months of the year, however no established whale watching industry exists, despite the major tourism industry.

One non-government organisation continues to take a few trips per year to see the whales from St. Thomas, however in some years no whales are seen on these trips. In recent years it appears to have been more difficult to find whales. No further established whale watching industry is active on the islands. There are occasional sightings of cetaceans on dive trips, from both St. Thomas and St. Croix, and recreational boats also occasionally report sightings of whales. As well as humpbacks, sightings have included sperm whales, orca and short-finned pilot whales.

In earlier research on the US Virgin Islands (Hoyt, 1999), it was noted that another operator which had been taking whale watch trips dropped out of the business due to the short season and the irregularity of sightings.

Main species:	Large cetaceans: *humpback whale, sperm whale* Small cetaceans: *bottlenose dolphin, spinner dolphin, short-finned pilot whale*
Tourists:	N/A
International	
Domestic	
Types of tours:	Boat-based
Average adult ticket price:	$65
Estimated employment numbers:	1
Main whale watch season:	January to March

Acknowledgements:
Dalma Simon from the Environment Association of St. Thomas and St. John (EAST) and Paul Jobsis, marine biologist at the University of the Virgin Islands.

South America

Year:	Number of whale watchers	AAGR	Number of countries	Direct expenditure	Indirect expenditure	Total expenditure
1991	22,418	N/A	5	$15,447,000	$11,245,000	$29,692,000
1994	231,530	117.8%	8	$19,117,000	$43,464,000	$62,581,000
1998	266,712	3.6%	8	$25,667,000	$69,141,000	$94,808,000
2006	582,547	10.3%	11[71]	$63,614,528	$102,367,103	$165,981,631
2008 Projection	696,900	10%[72]	11	$84,210,754	$127,576,320	$211,787,074

Nearly all countries on the continent are involved in whale watching. South America has numerous resident and migratory cetaceans in coastal and inland waters. The largest industries are in Argentina and Brazil, both with well over 200,000 whale watchers each in 2008. At the other end of the scale are Bolivia, Peru and the Falkland Islands, with just a few hundred whale watchers.

It is clear from recent research that cetacean watching across the continent is a major generator of economic activity; the industry generated a total expenditure of over $200 million and took nearly 700,000 people whale watching in 2008.

A detailed study of whale watching in Latin America based on 2006 data was released in 2008. The report

[71] Hoyt and Iñíguez did not include Falkland Islands in their 2006 study, however it is assumed to have had minimal whale watchers in 2006.
[72] AAGR for ten years 1998 to 2008 is 10%, for 2006-2008 is 9.2%

was commissioned by the Whale and Dolphin Conservation Society, IFAW and Global Ocean. Due to the comprehensive nature of this recent report, we have relied on the 2006 numbers in the following section for all South American countries.

In the table above, we have also estimated the size of the whale watching industry in 2008. We used previous growth rates and tourism arrival growth figures from the World Tourism Organisation to make an estimate for each country. However, in the following section, only 2006 data are presented.

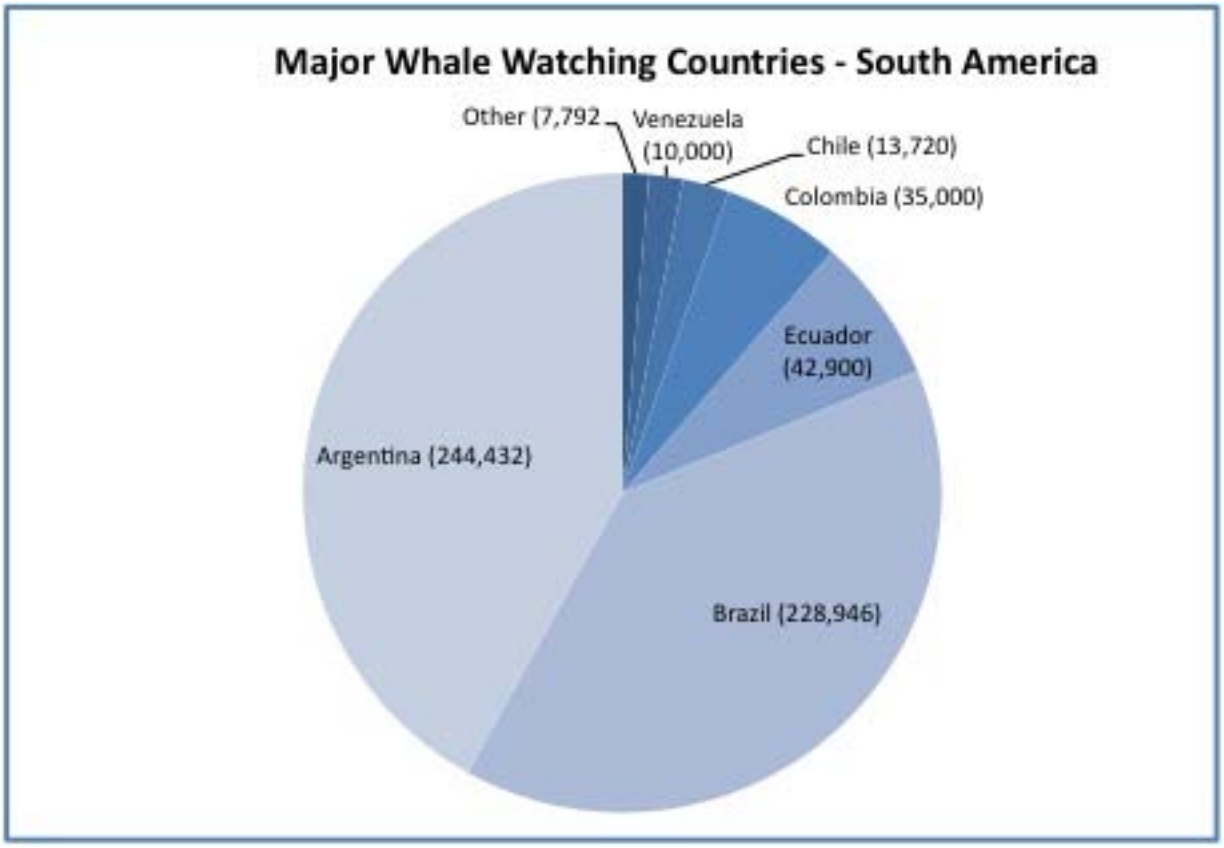
Acknowledgements:
Erich Hoyt and Miguel Iñíguez for their fine work in compiling the Latin American whale watch report from which these data are largely drawn.

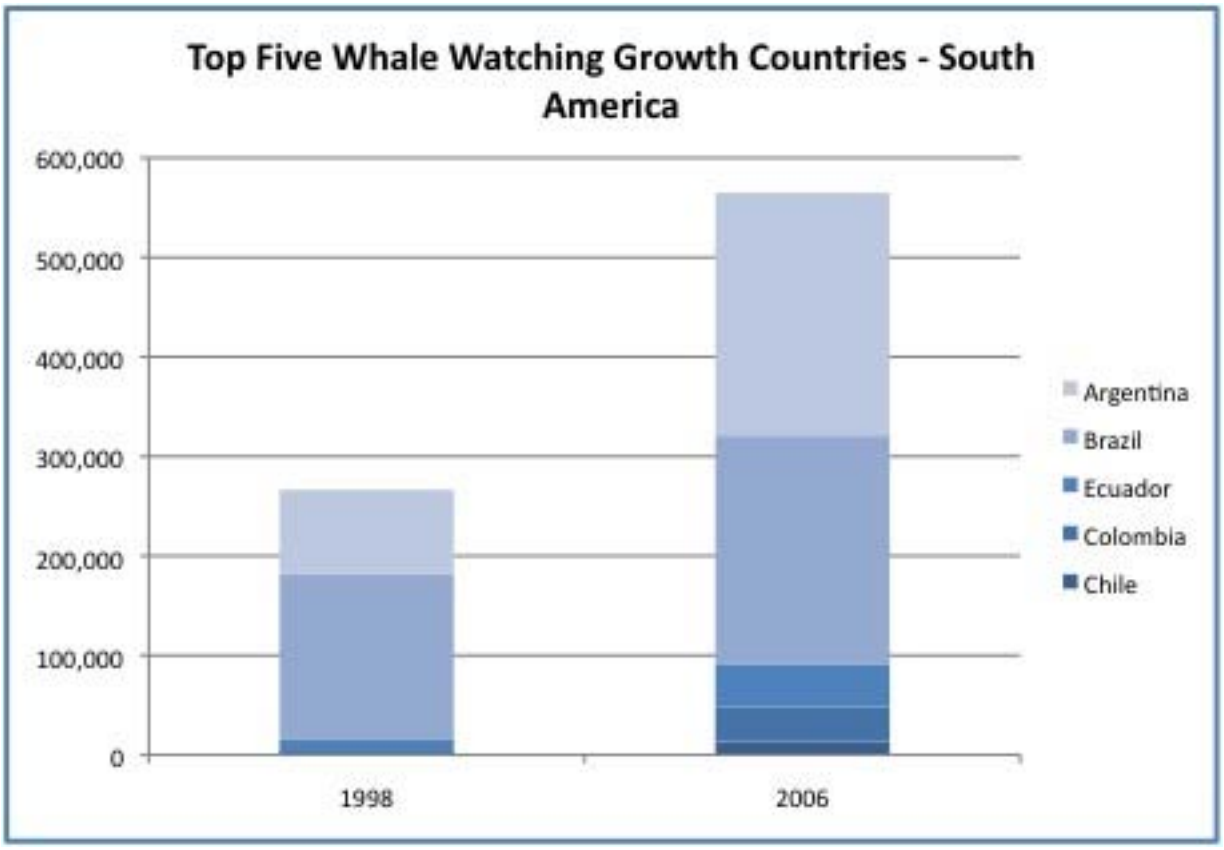
References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Summary of country results

Country:	Number of whale watchers		Growth between 1998 and 2006
	1998	2008	AAGR
Argentina	84,164	244,432	14.3%
Bolivia	None	400	6.1%
Brazil	167,107	228,946	4%
Chile	3,300	13,720	19.5%
Colombia	Minimal	35,000	27.5%
Ecuador	11,610	42,900	17.7%
Falkland Islands	Minimal	100	N/A
Peru	531	586	1.2%
Suriname	None	1,906	28.9%
Uruguay	None	4,800	44.7%
Venezuela	Minimal	9,757	58.1%
REGIONAL TOTAL:	266,712	582,547	10.3%

NB: Where an industry had 'None' or 'Minimal' for whale watchers in 1998, a figure of 250 has been used to calculate AAGR.


Major Whale Watching Countries - South America
Other (7,792
Venezuela (10,000)
Chile (13,720)
Colombia (35,000)
Ecuador (42,900)
Argentina (244,432)
Brazil (228,946)


Top Five Whale Watching Growth Countries - South America
600,000
500,000
400,000
300,000
200,000
100,000
0
1998
2006
Argentina
Brazil
Ecuador
Colombia
Chile

Argentina

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	17,371	N/A	N/A	$347,000	$14,245,000	$14,529,000
1994	44,580	37.0%	N/A	$892,000	$35,218,000	$36,110,000
1998	84,164	17.2%	N/A	$1,638,000	$57,746,000	$59,384,000
2006	244,432	14.3 %	32	$2,218,339	$59,346,765	$61,565,104

★ Capital City: Buenos Aires
Whale Watch Locations:
01: Península Valdés
02: Puerto San Julián
03: Las Grutas
04: Puerto Deseado
05: Ushuaia

Argentina's large and well-established whale watching industry is based mainly around Península Valdés, in the Chubut province. Whale watching began around this area in the 1980s and has been increasing steadily since. The area is most famous for orcas and southern right whales. Land-based whale watching is popular here, particularly from February to early May when orcas hunt young sea lions and elephant seals close to shore, at times beaching themselves to catch their prey. The orcas are present year-round and can be seen practicing their hunting routines along the shore from a path along the cliff.

Six operators at Península Valdés run boat-based tours focused on southern right whales. The trips last for about two hours. The 17 boats in the fleet take up to 84 passengers per boat, and regulations are in place to manage the whale watching fleet and maintain the sustainability of the industry.

Other locations with cetacean watching in Argentina include Puerto San Julián, Las Grutas and Puerto Deseado in Santa Cruz province. In Puerto Deseado, three tour operators offer one- to two-hour river trips in small inflatables and fiberglass boats (capacity 27 persons), which encounter Commerson's dolphins.

Approximately 20 of the total 32 operators work out of the southern port of Ushuaia where journeys depart for Antarctica.

Main species:	Large cetaceans: *southern right whale* Small cetaceans: *Commerson's dolphin, dusky dolphin, orca, Peale's dolphin*
Tourists:	
International	
Domestic	Mainly domestic
Types of tours:	Boat-based. Land-based viewing from Península Valdés
Average adult ticket price:	$17 (boat-based trips)
Estimated employment numbers:	45
Main whale watch season:	February to May

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Bolivia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2006	400	N/A	3	$76,000	$90,000	$166,000

★ Capital City: La Paz
Whale Watch Locations:
01: Mamoré River

Land-locked Bolivia has river-based dolphin watching opportunities in its central Amazon region.

Formerly considered a subspecies of the Amazon River dolphin, the recently designated river dolphin of Bolivia has the highest encounter rates recorded in the Amazon. At the moment, the only dolphin watching trips are opportunistic with small boat trips in the Mamoré River and its tributaries. Prices vary but $190 per passenger is reportedly a minimum price for a tour that can last from one to several days. Figures from the previous Latin America report have counted only 10% of the estimated tour participant numbers as opportunistic river dolphin watchers.

Main species:	Small cetaceans: *Amazon (Bolivian) river dolphin*
Tourists:	
International	Mainly international
Domestic	
Types of tours:	Boat-based, river cruises
Average adult ticket price:	$190
Estimated employment numbers:	4
Main whale watch season:	N/A

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Brazil

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	175,000	N/A	N/A	$2,500,000	$6,250,000	$8,750,000
1998	167,107	-1.1%	N/A	$4,071,000	$7,243,000	$11,314,000
2006	228,946	4.0%	44	$6,316,288	$25,190,550	$31,506,838

★ Capital City: Brasília
Whale Watch Locations:
01: Anhatomirim
02: Fernando do Noronha
03: Amazonas

Brazil has a large and varied cetacean watching industry. The main areas are Anhatomirim, off Santa Catarina in the southeast; Fernando de Noronha, an island off the State of Pernambuco in the country's northeast; and the Amazon basin.

Approximately 130,000 people go dolphin watching around Bahia Norte de Santa Catarina and the protected area at Anhatomirim. These are not dedicated cetacean watching trips, although the tucuxi dolphins feature in many operators' promotional materials. A range of craft, often schooner sailboats, takes visitors for cruises around the island. Concerns have been raised in this area about the impact of many boats on the dolphin population.

Fernando do Noronha is an isolated island 350km off the State of Pernambuco. The popular beach resort has around 70,000 people watching spinner dolphins each year.

While there are few dedicated dolphin watching trips in the Amazon region, many tourists see them during visits to jungle lodges on cruise ships, trekking or canoeing. Hoyt and Iñíguez (2008) estimate that 10% of the 100,000 foreign tourists going to Amazonas and the rest of the Brazilian Amazon watch dolphins.

Larger cetaceans can be watched at Praia do Forte, Bahia, near Salvador and Imbituba, Santa Catarina. Each of these location host several thousand whale watchers per year.

Main species:	Large cetaceans: *Humpback whale, minke whale, southern right whale* Small cetaceans: *Amazon River dolphin, bottlenose dolphin, spinner dolphin, tucuxi*
Tourists:	
International	abou25%
Domestic	about 75%
Types of tours:	Land and boat-based, day trips and longer cruises.
Average adult ticket price:	$28

Estimated employment numbers:	62
Main whale watch season:	Many dolphin species can be seen on tours year-round, but July to November is best for large whales..

References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Chile

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	300+	N/A	N/A	$15,000	$38,000	$53,000
1998	3,300	82.1%	N/A	$194,000	$485,000	$679,000
2006	13,720	19.5%	59	$1,169,443	$1,284,383	$2,453,826

★ Capital City: Santiago
Whale Watch Locations:
01: Isla Choros-Damas
02: Punta Arenas

Chile has diverse whale and dolphin watching opportunities: from dolphin watching around rocky islands in the desert north to large baleen whales leaping against the backdrop of the southern fjords. However, the vast bulk of commercial and dedicated dolphin watching occurs at Isla Choros-Damas, in the north central part of the country, 500 km (300 miles) north of Santiago. Local fishermen offer tours using small fishing boats (capacity 12 passengers).

In the south of the country, many cruises to Antarctica encounter cetaceans in Chilean waters, particularly in Punta Arenas, the Strait of Magellan and Patagonian Channels.

Earlier reports noted that despite the strong presence of many different cetacean species in Chilean waters, the whale watching industry had been slow to take off. Species sighted off Chile include the three biggest cetacean species: the sei whale, the fin whale and the largest of all, and most common in terms of sightings, the blue whale. It appears now that the opportunities are being seized and the industry is in a strong growth phase.

Main species:	Large cetaceans: *blue whale, humpback whale, southern right whale* Small cetaceans: *bottlenose dolphin, Commerson's dolphin, Chilean dolphin, orca, Peale's dolphin, long-finned pilot whale, Risso's dolphin*
Tourists:	
International	Mainly international

Domestic	
Types of tours:	A range of boat- and land-based viewing opportunities
Average adult ticket price:	From $12 to $5714
Estimated employment numbers:	83
Main whale watch season:	November to April for small cetaceans (in the south); for large cetaceans, blue whales can be seen between January and March and other large cetaceans between December and March.

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Colombia

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	N/A	Minimal	Minimal	Minimal
1994	5,000	N/A	N/A	$250,000	$1,668,000	$1,918,000
1998	Minimal	N/A	N/A	Minimal	Minimal	Minimal
2006	35,000	17.6%	36	$3,125,000	$5,400,000	$8,525,000

★ Capital City: Bogotá
Whale Watch Locations:
01: Leticia
02: Valle del Cauca
03: Golfo de Morrosquillo
04: Santa Marta
05: Cartagena

Colombia has three distinct areas for cetacean watching: the Amazon, the Pacific coast and the Caribbean coast. The Amazon is the busiest dolphin watching area, with around 24,000 people taking boat-based trips with the 22 operators based in Leticia, near the borders with Brazil and Peru. These trips encounter both the Amazon River Dolphin, or boto, and the tucuxi.

The operators on the Pacific coast range from fishermen with small boats to hotels that run cruises using a range of craft. Day trips are offered, as well as multi-day package trips. Most activity is based out of Valle del Cauca, with approximately 10,000 visitors reported in 2006.

Dolphin watching in the Colombian Caribbean is mainly opportunistic, with other cruises making regular sightings of marine tucuxi and bottlenose dolphins from land and boats in Golfo de Morrosquillo, Santa Marta and Cartagena.

Main species:	Large cetaceans: *Bryde's whale, humpback whale* Small cetaceans: *Amazon River dolphin, bottlenose dolphin, spinner dolphin, tucuxi*
Tourists:	
International	Mainly international
Domestic	
Types of tours:	Mainly boat-based short trips
Average adult ticket price:	$17 on the Pacific coast, $125 in the Amazon
Estimated employment numbers:	51
Main whale watch season:	December to March is the main tourist season; humpback whales visit the Pacific coast between June and November

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Ecuador

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	5,020	N/A	N/A	$15,060,000	Minimal	$15,060,000
1994	6,650	9.8%	N/A	$15,100,000	$200,000	$15,300,000
1998	11,610	15%	N/A	$19,700,000	$3,650,000	$23,350,000
2006	42,900	17.8%	119	$50,229,000	$10,053,700	$60,282,700

★ Capital City: Quito
Whale Watch Locations:
01: Galapagos Islands
02: Machalilla National Park
03: Amazon basin

Cetacean watching has been a part of ecotourism on the Galápagos Islands for over 30 years and continues to attract visitors today. However, the biggest cetacean watching area in Ecuador is Machalilla National Park on the mainland central coast, which attracts around 20,000 visitors. Day trips to see humpback whales run from June to September aboard a range of small boats, with capacities of up to 16 passengers.

Two operators offer dedicated trips to see river dolphins in the Ecuador's part of the Amazon basin. Amazon River dolphins and sometimes tucuxi are seen. Small groups are taken to the confluence of the Aguarico and Napo rivers and the Yasuni and Napo rivers, as well as to Lagarto Cocha Lake.

At least 80 operators offer trips to the Galápagos. These are typically journeys of seven days or more aboard a range of vessels carrying from six to 90 passengers. These are not dedicated whale watch tours, but

nature tours that include regular dolphin sightings between the islands. Whales are also seen in the Canal Bolívar between Fernandina and Isabela and in the area west of Isabela Island. Several cruise ships offer special whale watching options and will spend a day or more looking for whales.

Other locations with cetacean watching include Salinas near Guayaquil and land-based viewing at Guayas and Salango.

Main species:	Large cetaceans: *Bryde's whale, humpback whale, sperm whale* Small cetaceans: *Amazon River dolphin, bottlenose dolphin, orca, pantropical spotted dolphins, short-finned pilot whale, tucuxi*
Tourists:	
International	Mainly international. At Machalilla National Park, 75% international and 25% domestic
Domestic	
Types of tours:	Boat and land-based viewing on the mainland and Amazon. A range of trips to the Galápagos, some multiple-day
Average adult ticket price:	$25 to $30 for mainland boat trips. Cruises to Galapagos and Amazon treks can cost several thousand dollars
Estimated employment numbers:	168
Main whale watch season:	Year-round depending on the location but humpbacks are highly seasonal from June to September-Orctober

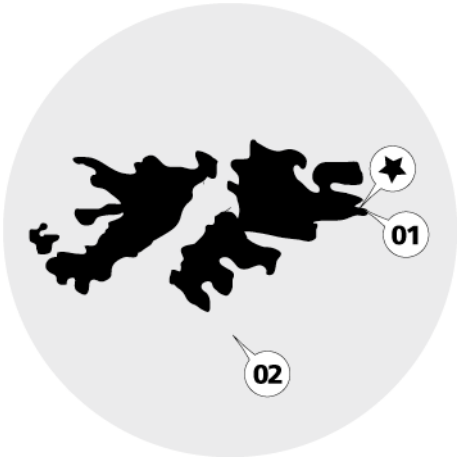
References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Falkland Islands (Las Malvinas)

Year	Number of whale watchers	AAGR:	Number of operators	Direct expenditures	Indirect Expenditures	Total Expenditure
1991	None	N/A	None	None	None	None
1994	Minimal	N/A	None	None	None	None
1998	Minimal	N/A	None	Minimal	Minimal	Minimal
2008	100	N/A	2	$5,500	$19,000	$24,500

★ Capital City: Stanley
Whale Watch Locations:
01: Stanley
02: Sea Lion Island



The Falkland Islands, also known as Las Malvinas, are located off the southern coast of Argentina but governed by Britain, are renowned for their diverse wildlife including sea birds, seals and sea lions, penguins, whales and dolphins. Despite this, the island lacks a formal whale watching industry. Our data for 2008 indicates that few people undertake formal whale watching whilst visiting the islands.

While two companies offered whale watching in 2008 only one operator conducted any trips. The tours view sei whales that pass by the capital, Stanley, in February and April. On Sea Lion Island, land-based trips see colonies of sea lions, around which orcas are frequently seen.

The low number of whale watchers reported here is somewhat misleading, as there is substantial opportunistic whale and dolphin watching on the many boat-based and land-based nature tours. Whales and dolphins are used in marketing materials for these tours, but due to the focus on other wildlife we have included only a small number as whale watchers.

Most visitors to the Falklands arrive by ship. An estimated 35 cruise ship companies visit the islands, often as part of trips to Antarctica. Numbers of cruise ship arrivals in the last full season of 2007/08 was 62,203. Of these tourists, many would see cetaceans as part of trips in inflatable dinghies around the outer islands. This opportunistic viewing is part of broader nature watching expeditions and has not been counted in this study. Only a small number of visitors arrive by air, with overnight visitors estimated at just over 6,000 for 2008.

Cetaceans are an important part of the attraction to this remote part of the world. Whales are common in local waters, especially orcas and Commerson's and Peale's dolphins. New Island has been noted in tourism literature as a common site for dolphin sightings by ships on longer cruises. Other islands noted for short-beaked common dolphin sightings include Saunders, Weddell and West Point Islands.

Main species:	Large cetaceans: *sei whale, minke whale* Small cetaceans: *Commerson's dolphin, Peale's dolphin, orca*
Tourists:	
International	90%
Domestic	10%

Types of tours:	Boat-based, land-based viewing
Average ticket price:	N/A
Estimated employment numbers:	2
Main whale watch season:	Year-round

Acknowledgements:
Thanks to Peter Carey of the SubAntarctic Foundation for Ecosystems Research, Ian Strange of New Island Conservation Trust, Karen Neely of the Shallow Marine Surveys Group, Jake Downing of the Falkland Islands Tourist Board and operators including South Atlantic Marine Services and Falkland Islands Company.

References:
Falkland Islands Tourist Board, *Falkland Islands Air Visitor Survey: Report for the period December 2008 to March 2009*.
Falkland Islands Tourist Board, *Falkland Islands Cruise Survey: Report for the period 31st October 2008 to 12th February 2009.*

Peru

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	27	N/A	N/A	$40,000	None	$40,000
1994	150	77.1%	N/A	$360,000	$90,000	$450,000
1998	531	37.2%	N/A	$64,000	$17,000	$81,000
2006	586	1.2%	10	$120,632	$114,800	$235,432

★ Capital City: Lima
Whale Watch Locations:
01: Amazon Basin

Cetacean watching is a small industry in Peru. Initial efforts to start the industry met with difficulties due to the prevalent dolphin hunting and local customs of eating dolphin meat. While hunting of dolphins has now been banned, the industry has been slow to develop. Some operators are now including dolphin watching in tours on the coast, including some dedicated dolphin watching trips. The main species viewed in coastal waters is the bottlenose dolphin while the Amazon River dolphin and tucuxi are seen on river cruises.

In the mid-1980s, an American eco-tour operator offered research trips open to the public in the Pacaya-Samiria National Reserve area of the Perúvian Amazon. These tours are reported to have stopped, but may re-start in 2009.

Main species:	Small cetaceans: *Amazon River dolphin, tucuxi, bottlenose dolphin*
Tourists:	
International	Mainly international
Domestic	
Types of tours:	boat-based, dedicated, opportunistic
Average adult ticket price:	$125
Estimated employment numbers:	14
Main whale watch season:	June to August (peak tourist season)

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Suriname

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2006	1,906	28.9%	N/A	$88,292	$9,530	$97,822

★ Capital City: Paramaribo
Whale Watch Locations:
01: Suriname River

Some small-scale dolphin watching occurs on the Suriname River near Paramaribo. A local NGO, Green Heritage Fund Suriname, runs data-collecting boat trips in the Suriname River and the surrounding estuary through its Dolphin Programme. Through this NGO, locals and tourists can participate in tours for a fee and see the local tucuxi dolphins. Local boat owners also offer trips on a casual basis. More formal tour operators are also said to occasionally undertake boat cruises.

A report from an environmental group that runs some dolphin tours in Suriname suggested in early 2009 that there has been considerable growth since 2006, claiming that trips have been running most days taking up to 50 people on trips. The potential number of whale watchers in Suriname could therefore now be several thousand (estimated around 4,500 whale watchers based on 300 days with an average occupancy of 15 passengers), but, for consistency with other countries in this region, we report above the 2006 figure. In the regional totals at the start of this section, we have included a projected rate of 4,500 for Suriname.

Main species:	Small cetaceans: *marine tucuxi*
Tourists:	
International	N/A
Domestic	N/A
Types of tours:	boat-based, river cruises
Average adult ticket price:	$45
Estimated employment numbers:	6
Main whale watch season:	N/A

Acknowledgements:
Monique Pool of Suriname Environmental Advisory Services.

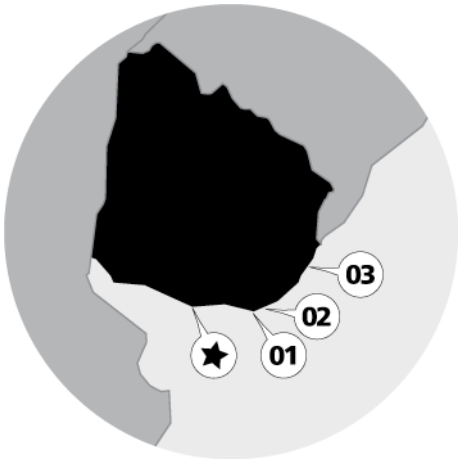
References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Uruguay

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	None	N/A	None	None	None	None
1994	None	N/A	None	None	None	None
1998	None	N/A	None	None	None	None
2006	4,800	44.7%	5	$26,000	$99,750	$125,750

★ Capital City: Montevideo
Whale Watch Locations:
01: Punta del Este
02: Maldonado
03: Rocha



Uruguay has some good offerings of cetacean viewing from both sea and land, with a mix of commercial tours and research trips.

From August to October southern right whales can be seen close to Uruguay's coast. Five operators run boat-based trips from Punta del Este, east of the capital, Montevideo. Eight platforms for land-based whale watching have also been built along the coast in Maldonado and Rocha.

Although a small and new industry, there remains significant potential for further development.

Main species:	Large cetaceans: *southern right whale* Small cetaceans: *bottlenose dolphin, franciscana*
Tourists:	
International	40%
Domestic	60%
Types of tours:	Boat-based, land-based
Average adult ticket price:	$35 (boat-based trips)
Estimated employment numbers:	7
Main whale watch season:	August to October

References:
Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Venezuela

Year	Number of whale watchers	AAGR	Number of operators	Direct expenditure	Indirect expenditure	Total expenditure
1991	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1994	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
1998	Minimal	N/A	Minimal	Minimal	Minimal	Minimal
2006	9,757	58.1%	130	$240,034	$758,625	$998,659

★ Capital City: Caracas
Whale Watch Locations:
01: Mochima National Park
02: Margarita Island
03: Puerto la Cruz

Venezuela has tours that include dolphin and occasional large whale watching in many areas of its broad coastline and inland water courses – from the Caribbean coast, Amazon and Orinoco basins to Lake Maracaibo and the Gulf of Venezuela.

The most popular location for dolphin watching is Mochima, a national park on the Caribbean coast in the northeast of the country. Over 5,000 tourists, mainly domestic, take part in small boat tours to see long-beaked common dolphins and occasionally Bryde's whales in this region.

Other larger locations include El Guamache, Margarita Island and Lechería, Puerto la Cruz, Anzoátegui State. Nature cruises in the Amazon basin and Orinoco also sometimes encounter cetaceans.

Main species:	Large cetaceans: *Bryde's whale* Small cetaceans: *bottlenose dolphin, long-beaked common dolphin, Atlantic spotted dolphin, tucuxi*
Tourists:	
International	
Domestic	Mainly domestic
Types of tours:	Boat-based nature trips. Some dedicated, some opportunistic watching
Average adult ticket price:	$12 at Mochima, the most popular location.
Estimated employment numbers:	173
Main whale watch season:	November to February

References:

Hoyt, E & Iñíguez, M 2008, 'The State of Whale Watching in Latin America', WDCS, Chippenham, UK; IFAW, Yarmouth Port, USA; and Global Ocean, London, 60 pp..

Afterword by Erich Hoyt

Erich Hoyt is Research Fellow with the Whale and Dolphin Conservation Society and leads their Critical Habitat/ Marine Protected Areas work. He is author of 17 books and some 500 articles, papers and reports. His work for IFAW includes the widely cited Whale Watching 2001, as well as contributions to a number of other key whale watch workshops and reports. He is a member of the IUCN Species Survival Commission's Cetacean Specialist Group as well as the IUCN High Seas MPA Task Force.

Everything that you have read so far — the detailed accounts of 13 million people spending $2.1 billion dollars in 119 countries — goes back to a small fishing boat off the southern California coast in 1955.

Imagine the scene. In the low light of winter off San Diego harbour, a huge, spouting, air-sucking mammal approaches the boat. It is longer, larger, grander in every way than anything the fisherman has ever seen. Wait! Two of them, a calf in tow breaks the surface. There is nothing the fisherman can do but sit there and watch, wait and listen as they swim past. Later that evening, glowing from the day, the man makes a sign and the next day hangs it on his boat on the wharf in the harbour: 'See the whales — $1'.

With this action of a putting value on seeing a whale, fisherman Chuck Chamberlin started something.

More than 50 years later, we are still considering the implications of his actions. What are the benefits — and the costs — of putting a monetary value on a wildlife experience? How did the global industry of whale watching get from a small fishing boat off the California coast to where we are today, and where will it go next? Can whale watching contribute to saving whales and protecting the sea?

Reading the 119 country and territory accounts in this report, I can't help but recall the whale watch experiences that I have had over the years in some 40 countries. Everything from the eye-popping sight of short-finned pilot whales swimming underwater against the backdrop of a coral reef and peering up at us through a glass-bottom boat *to* smelling the krill-laden breaths of seven 80-foot blue whales all around us in the North Atlantic as they turn their fire-hose spouts on the sky. Yet illuminating and equally relevant to this report are the many discussions and arguments about whale watching I have heard. I will never forget:

• the tour boat operator who wondered whether there would ever be any whale watching in Europe; it started much later than in North America, but today there are more than 800,000 people a year watching in European waters;

• the young fisherman in Baja, México, in the early 1980s who asked if there was enough of a future in gray whale watching to risk buying a small boat; he did and he's still in business today with a strong sense of pride about his country's legacy of whale watching and marine protection;

• the student in Japan who desperately wanted to meet dolphins but was sure that this would never be possible in a whaling and dolphin-hunting country — whale and dolphin watching is now a regular occurrence in more than 20 Japanese communities, and it's growing; the student is now a member of a 'dolphin club'; and

• the minke whaler I met in Iceland in 1996 who when told that 2000 people were paying to watch local whales said 'it's just a fad — 'whaling watching' would probably be more popular.' For the record, whale watching in Iceland now attracts annually more than 100,000 participants, with 1 in 8 visitors to the country going whale watching, a business worth nearly $17 million dollars a year.

In my 1984 book *The Whale Watcher's Handbook* (Penguin/Doubleday, New York) only 12 countries could claim whale watching activities, and the total numbers of whale watchers then were in the low tens of

thouands. Through the 1990s, two reports for the Whale and Dolphin Conservation Society charted this growth as it spread around the world, culminating in IFAW's *Whale Watching 2001* report (Hoyt 1992, 1995, 2001). The number of whale watchers grew from 4 million in 1991 to 5.4 million in 1994 to 9 million in 1998. Now, in this latest IFAW report from Economists at Large, we can chart even further growth with 13 million participants per year. How did it all happen? Perhaps the best way to understand this growth is to survey it broadly over the five decades of this industry's fairy-tale blossoming during which it has expanded in size, diversity and value.

After fisherman Chuck Chamberlin's trips to see the gray whale migration in 1955, whale watching grew slowly. Throughout the late 1950s and 1960s, whale watching focussed on this single predictable coastal whale species, expanding slowly north along the California coast as the gray whales themselves migrated and finally south to the gray whale breeding and calving lagoons of Baja California, México. The Mexican excursions, departing from San Diego as they do to this day, were the first long-range, multi-day whale watch trips (Hoyt 2008).

The 'save-the-whales' movement which started in California — and the first sign of the end of whaling in the early 1970s (as the US, Canada, UK, New Zealand and Australia lay down their harpoons) — was helping to precipitate whale watching growth. As whales began to return to coastal waters in greater numbers after whaling ended, people increasingly went out to meet them. In 1971, whale watching jumped to the east coast of North America, initially with educational field trips to the St. Lawrence River in Québec and, by 1975, to Cape Cod, Massachusetts. New England whale watching proved to be a key transition in the history of whale watching. For the first time, scientists worked with ex-fishermen and boat skippers to create high quality, narrated whale watch tours that generated considerable repeat-business. Over a 5-6 month period from spring to early autumn every year, an accessible offshore area called Stellwagen Bank proved to be a reliable feeding ground for whale watcher-friendly humpback whales and several other whale and dolphin species. With a long season coinciding with peak summer trade and ready access to high volumes of tourists that came to Cape Cod, Boston and nearby towns and cities, whale watching took off. By the mid-1980s, more than a dozen companies were in full operation and investing in purpose-built boats. The numbers of whale watchers surpassed California and México combined and soon climbed toward 1 million per year in New England alone. Big business.

News of New England's whale watching success spread around the world, recalling the way that New England whaling had caught on a century or more earlier. By the early 1990s, whale watching had reached 31 countries and was poised for steep growth. Whale watching even spread to the whaling countries of Japan and Norway. Whale watching was young, exciting and the best whale watching was building customer satisfaction, through partnerships, for a long-term successful business. Of course, some whale watching was started without much planning, with poor or no guides and dismal customer care, but it was part of a fast learning curve. The 1990s proved to be a decade of explosive growth in whale watching — 12% average annual growth rate, about 3-4 times the rate of overall tourism arrivals (Hoyt 2001). IFAW's *Whale Watching 2001* report charted this growth and looked forward to a strong, bright future in which the value of whale watching would surely grow beyond all recognition from its earliest roots, providing a strong economic incentive for conservation with the realization that whales were now worth far more alive than dead (Hoyt and Hvenegaard 2002).

The first decade of the 21st century has indeed produced substantial growth but it has also taken us by surprise with considerable ups and downs from overall tourism due to world events. The Sept. 11th, 2001 hijackings and subsequent destruction of the World Trade Center led to a slow-down in world travel with repercussions felt particularly in long-haul destinations. In some cases domestic whale watching tours may have benefitted but overall tourism numbers declined until 2003 — coinciding with the sudden travel concerns generated by the SARS (Severe Acute Respiratory Syndrome) near-pandemic. Fears were short-lived and, by 2004, tourism arrivals were back on track, although serious concerns have since arisen regarding Bird flu, or Avian influenza, and the latest pandemic, swine flu.

Potentially more serious, however, has been the slow down due to the world credit crisis beginning in 2008. This crisis worsened in early 2009 and the impacts may be felt well into 2010. One big impact has been on long-haul tours, but short-haul and even domestic tourism, this time, may also suffer considerably. This report is based mainly on 2008 numbers, so some of this may already be hinted at in the statistics, although overall, 2008 international tourist arrivals grew by 2% over what had been a record year in 2007. But it will not be surprising to find declines in 2009 as the global recession bites. In any case, however, there is considerable evidence inside this report that whale watching has not suffered as much as other tourism sectors during these various events. Despite all the ups and downs of the last decade, whale watching still managed a 3.7% average annual growth rate between 1998 and 2008.

Another major change with whale watching over the past 10 years is a kind of 'loss of innocence' in terms of the perception of it as a positive-only force for conservation. In 1995, the IFAW Workshop on the Scientific Aspects of Managing Whale Watching, held in Italy, accelerated the study of the impact of whale watching boats on whales and dolphins in their natural habitat to try to determine if whale watching harms whale and dolphin populations (IFAW *et al.* 1995). Subsequent workshops and studies have approached the topic from many different angles. Whale behaviour has been investigated on the feeding and the mating-calving grounds, with and without whale watching boats present. Researchers have struggled to determine whether observed short-term effects on whales and dolphins from whale watching (approaching or avoiding boats, staying down longer, interrupting natural behaviour) might be leading to long-term negative impacts (displacement, reduced reproductive success, or reduced survival rate). Concerns have centred around the presence of boats on critical mating, calving, feeding, and resting areas; the amount of time and the number of boats approaching close to the same whales; and the intensive whale watching of certain rare or endangered species (Hoyt 2008). The problems have been most evident with small, inshore populations of dolphins living in restricted areas such as Doubtful Sound, New Zealand; off eastern and southern Vancouver Island, Canada; and Shark Bay, Australia. In these populations, repeated exposure of individuals to boat-based whale watching has been leading to long-term impacts (Report of the Workshop on the Science for Sustainable Whalewatching 2004; Bejder *et al.* 2006; Lusseau *et al.* 2006). These studies highlight the sensitivity of small dolphin populations exposed to constant whale watching. Yet even large whales sometimes show behavioural changes as a result of whale watching which, for some populations, may represent a threat (Hoyt 2008).

The results of these studies have produced findings that call for more restrictive management particularly for tourism directed at watching localized dolphin populations. But even more than this, these results call for precautionary management of whale watching everywhere, so that whale watching does not become yet another problem affecting whale and dolphin populations.

These findings carry considerable importance because nearly a quarter of all whale and dolphin species remain in one of the threatened or near-threatened categories, with the overall population trend often decreasing (IUCN 2008). In 2008, the IUCN Species Survival Commission's Cetacean Specialist Group updated the status of whale, dolphin and porpoise species, finding that 5 species are Near Threatened, 5 species Vulnerable, 7 species Endangered, 1 species Critically Endangered and 1 species either Critically Endangered or Extinct. When evaluated at the subspecies or subpopulation level, an additional 14 are rated Critically Endangered, 9 Endangered and 4 Vulnerable. Only 21 species are rated Least Concern, the reasonably safe category. Perhaps most worrisome is that 45 species are Data Deficient — we still don't know enough even to rate them.

Partly due to the findings about whale watching and the continued poor prospects for many whale and dolphin species, a blueprint for sustainable high quality whale watching was developed through the Humane Society International as part of a plan for whale watching in coastal Peru (Hoyt 2007). This blueprint has since been used in several Latin American countries, in Indonesia (with an Indonesian translation) and is planned for use in Québec, Canada, as part of a check-up tool. The blueprint sets out a step-by-step method

for starting up sustainable whale watching – sustainable both in the economic and the environmental sense. Among other measures, it calls for precautionary space and time rules whereby one-third of every whale and dolphin area and one-third of daylight hours are kept free from whale watching (Hoyt 2007).

Will these measures eliminate all concerns? No, but they help. In this regard, we must keep a sense of perspective about two things. First, there is the ever-present threat of increased hunting, whaling, culling or allowing casual bycatch to fisheries, as well as the worldwide shipping industry which may be increasing even faster than whale watching and is largely responsible for the rising number of whales hit by ships. With a 3-4 dB increase (a doubling) of background noise every decade since the 1950s, there is evidence that in some cases whales are having to yell to be heard over the noise of speeding ships, and this may affect their ability to get out of the way if the sounds are masked or the whales are deafened (e.g., Agardy *et al.* 2007). Even those who criticize whale watching for its encroachment on wild whale populations are quick to point out that it is far less a threat than whaling in terms of a 'use' for whales. Still, whale watching must not be allowed to add to the problems of whales and dolphins, but must help and be part of the solution, to build awareness and contribute actively to whale survival. We can say that whale watching is a positive force in most of the world, but it must be carefully managed.

The second thing is simply a recognition that with the huge worldwide extent of whale watching — 13 million people taking tens of thousands of whale watch trips every year — there are going to be accidents, collisions with whales, impacts on certain populations, and other problems, in short, *costs* to whales and the marine environment. This is simply a factor of the huge numbers of people involved. When whale watching was a few thousand people venturing out in small boats along the California coast, this was not an issue. Of course, when we know the problems, we must strive to solve them, to increase the benefits and reduce the costs to as close to zero as we can.

Whale watching is not perfect, but I firmly believe that whale watching in 2009 — with its educational, scientific and community-based economic benefits — remains largely a positive force for conservation. People must come to know the animals if they are truly to care for them and about them. An economic incentive helps make that happen.

The future of whales and dolphins may well depend, to a surprising extent, on the future of whale watching. California fisherman Chuck Chamberlin could not have imagined that his $1 whale watch tours on a then endangered species would some day become a world-wide phenomenon crucial to getting people to care about marine mammals and the sea. When we meet whales and dolphins in their natural habitat, we become involved not only with individuals but with extended families, the threats they face and their need for habitat, safe havens or homes in the sea (Hoyt 2005). In the future, we need an ever healthier, higher quality, fully engaged whale watch industry. With such an industry, we could have the chance to show that we can have a sustainable relationship with wildlife that is mutually beneficial.

What is the true value of whales and dolphins? The expenditure, as compiled in this report, only hints at the answer to this question, and doesn't begin to tell us the 'total value'. Some 3,300 whale watch operators in hundreds of communities worldwide have come to depend on whale watching for their livelihood as well as their developing relationship with the sea. Communities have gained a sense of mission with a strong educational mandate that branches out from the operator to the community, to children and adults, to the visitors who go whale watching and take the messages home (IFAW *et al.* 1997). Whale watch operators have contributed millions of dollars toward whale research in terms of raw data, substantial free boat time for researchers, as well as financial contributions (Hoyt 2008). The best operators have created 'floating classrooms' from which to learn about the sea.

Yet, an even greater indication of true value, perhaps, comes from the degree to which many of us depend on whales for our sense of wonder — our hope about the future of the sea itself. We *want* a world alive with possibility, a world in which whales swim free in the sea. Even for those of us who may never see whales, we

want to reserve the possibility that we *could* see them one day — something that economists seek to measure as the elusive but important so-called 'existence value' and 'option value'. We want to ensure that whales are not just part of our whaling past, but integral to our future — our whale watching future.

It is truly magical to realize that we yet live on a planet with large-brained 10 to 60-ton or more wild animals that nurture their young just as we do yet migrate up to 5,000 miles (8,000 km) in a matter of weeks, sing songs on their mating grounds and have the capacity to enchant us with their curiosity, joie de vivre, and at times tag-along friendliness.

May it long be so.

— Erich Hoyt, *North Berwick, Scotland, June 2009*

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Appendix 1: Survey Form

Worldwide Whale Watching: An economic evaluation

Operator Survey

The International Fund for Animal Welfare (IFAW) has commissioned Economists at Large to undertake a global study of the whale watch industry in 2008. This study will estimate the total numbers of whale watch tourists in 2008, and the economic value of the industry.

The following document is a survey for whale watch operators around the globe. Whale watching includes all cetaceans, large and small, including whales, dolphins and porpoises. Importantly, we are seeking information from businesses who undertake whale or dolphin watching either full time, part time or only occasionally as part of other business. ***Whether you are a full time or an occasional whale watch operator, your response is crucial to the success of this project.***

This forms important industry research at a global level, and the results shall be made available to your company when complete. As an outcome of this research, there are plans to develop ***an international whale watching website***, including a database of all global whale watch businesses that tourists can search to find whale watching tours anywhere in the world – we invite your company to be a part of this initiative. If you do not want to be part of this international directory, please indicate this at the end of the survey.

All data collected for this project is held in confidence, and only reported in aggregate form across your country in order to protect the confidentiality of your business.

Your response to this short survey would be most appreciated. Please return this survey as soon as possible.

Many thanks for your assistance

Economists at Large & Associates
Melbourne, Australia
www.ecolarge.com

This survey comprises 16 questions and will take between 5 and 10 minutes to complete. Please complete as much as possible and If you are unable to complete all sections, we kindly request that you fill in any questions which are highlighted in **bold text** (Q6, Q7, Q8, Q9 and Q11). These are the most **valuable questions** to the study.

Company and Tour Details

1. Company contact details:

A. Business name:
B. Contact name:
C. Website address:
D. Email:
E. Phone number:
F. Fax:
G. Address:

2. Please describe your business:
   A. Please tick those that apply (if replying via email, just indicate with a yes or no answer and details if required)

☐ Whale watching ☐ Sea-based
☐ Dolphin watching ☐ Land-based
☐ Porpoise watching ☐ Other (please describe): _

   B. On average, how many whale/dolphin/porpoise watching trips do you take per week?

period	trips per week	number of weeks
During peak season:		
Outside of peak season:		

   C. Does your business offer any other tourism experiences aside from whale/dolphin/porpoise watching?

☐ Scuba diving ☐ Snorkling
☐ Fishing ☐ Bird watching
☐ Yacht Chartering ☐ Other (please describe): _

3. How many people are employed by your business?

period	Full-time	Part-time (xx - days a wk)
During peak season:		(- days a wk)
Outside of peak season:		(- days a wk)
Rest of the year:		(- days a wk)

4. How many vessels does your business operate and what is the capacity of each of these vessels?

Vessel's name	Capacity (pssgs)

Vessel's name	Capacity (pssgs)

5. On average, what is the occupancy rate (percentage of total tickets or capacity sold) on your tours?
   _ (%)

Tourism and Industry Info (IMPORTANT QUESTIONS TO OUR STUDY)

6. In the most recent season (2007 or 2008), how many people did 'your business' take on whale/dolphin/porpoise watching tours?

Season (year)	Number of tourists

7. Can you estimate how many people undertook whale or dolphin watching tours in 'your region' in the most recent season (2007 or 2008)?

Season (year)	Number of tourists	Region

8. How many businesses run whale/dolphin/porpoise watching tours in your region? _.

9. Can you please provide an estimate of average daily expenditure for tourists undertaking your tours? e.g. food, accommodation, souvenirs. (USD or local currency/day): _(/day)

Ticket Info

10. On average, what percentage of your whale watch tourists are:

International	%
Domestic	%

11. On your whale/dolphin/porpoise watch tour, what is the average price for:

A. Adult or full price ticket (USD or local currency /adult)	**(/adult)**
B. Child ticket price (USD or local currency /child)	**(/child)**
c. What proportion of customers pay full ticket price?	**%**

Species Info

12. What percentage of total tours do you see whales/dolphins? _ (%)

13. When is your local whale/dolphin watch season? (please state which months, and how many days for an average season): _ - _ (days)

14. What are the target species for your whale/dolphin watch tours (if any)? (please name them):

Other Info

15. Could you please list any contacts that you think would be useful to speak to further regarding this project (tourism organisations, non-government organisations, other whale watch businesses etc.):

16. To your knowledge, have there been any studies undertaken on the whale/dolphin watching industry in your region? Could you please provide a reference for these?

_

Upon completion of this global industry review, IFAW aims to create an online database of all whale watch businesses worldwide. This will serve as a central resource for tourists to search for whale watching around the world. Every operator surveyed will be included in the database free of charge. Please indicate below if you do not want to be included in the database.

☐ NO, don't include my business in the worldwide whale watching directory.

Would you like a copy of the final report emailed to you upon completion?

☐ YES ☐ NO

Thank you for your time and assistance with this work.