

# Gulf of the Farallones National Marine Sanctuary

## Commercial Fisheries- Economic Summary

### Economic Impact of the Commercial Fisheries on Local County Economies from Catch in the Gulf of the Farallones National Marine Sanctuary, 2010, 2011 and 2012



Map: Tony Reyer

Map of GFNMS, California Department of Fish and Wildlife blocks and counties in the study area.



Photo: Richard Allen

The seasonal catch of herring in Tomales Bay.



Photo: GFNMS

A *Dungeness* crab, the top species caught in the GFNMS in 2012.

#### Introduction

This report estimated the economic impact of commercial fishing within the Gulf of the Farallones National Marine Sanctuary (GFNMS) according to the California Ocean Fish Harvester Economic Model (COFEH). Estimates of harvest revenue (what the fishermen receive when they land their catch at various California ports) were converted to estimates of total output, value added, income and employment (measured in number of full and part-time jobs) using the multipliers in the COFEH Model for each county. Results are presented for years 2010, 2011, 2012 and the three-year average.

#### Results

Results are estimated for seven counties. Analysis covered 2010, 2011, 2012 and a three-year average. This was done due to volatile fluctuation in some fisheries from year to year.

Most indicators for economic impact

showed an increase from 2010 to 2011 followed by a slight decrease from 2011 to 2012. However, employment demonstrated a consistent increase. From 2010 to 2012, commercial catch from the GFNMS experienced a 38% increase in harvest revenue, a 40% increase in output and income, a 34% in value added and a 75% increase in employment.

According to the three-year average, commercial fishing in the GFNMS earned over \$15 million in harvest revenue, which generated almost \$25 million in output, over \$16 million in value added, \$15 million in total income and 291 full-time and part-time jobs.

The majority of this economic impact was concentrated in San Francisco and Sonoma counties. For the three-year average, San Francisco County accounted for over 52% of harvest revenue, 44% of output and employment, 51% of value added and 50% of income. Sonoma County accounted for 32% of harvest revenue and total income, 34% of output, 33% of value added and 34% of employment. Combined the two counties

#### Definitions of Key Terms (adapted from Hackett et al 2009)

**Harvest Revenue:** What fishermen receive when they land their catch at various CA ports.

**Output:** Total industry production, equal to shipments plus net additions to inventory.

**Value Added:** The value added during production to all purchased intermediate goods and services. This is equal to employee compensation plus proprietor's income plus other property income plus indirect business taxes.

**Total Income:** Sum of employee compensation, proprietor's income, corporate income, rental income, interest and corporate transfer payments.

**Employment:** Full- and part-time jobs.

## Summary Table of Results, 2010, 2011, 2012 and 3-year Average (2013 \$)

	2010	2011	2012	3-year Average
<b>Harvest Revenue</b>	\$11,615,008	\$17,362,715	\$16,080,660	\$15,019,461
<b>Output</b>	\$19,073,170	\$28,889,606	\$26,672,857	\$24,878,544
<b>Value Added</b>	\$12,696,416	\$19,111,088	\$17,055,038	\$16,287,514
<b>Total Income</b>	\$11,401,537	\$17,951,221	\$15,979,588	\$15,110,782
<b>Employment</b>	202	319	353	291

accounted for 84% of harvest revenue and value added, 78% of output, 81% of income and 79% of employment.

### Local County Dependence on Commercial Fish Catch in the GFNMS

Dependence on commercial fish catch in the GFNMS was calculated as the percent of total income by place of residence and by place of work from commercial fishing. In addition, dependence was calculated as the percent of total employment in the study area from commercial fishing. Due to data limitations this analysis could only be completed for year 2010 and 2011.

In 2010, the commercial fisheries directly (and indirectly through the multiplier process) accounted for 0.004% of total income by place of work, 0.005% of the total income by place of residence and 0.01% of all jobs. In 2011, the commercial fisheries accounted for 0.01% of total income by place of work, total income by place of residence and employment in the

10-county study area.

The percent of income by place of residence from commercial fishing in the GFNMS ranged from a high of .03% in Sonoma County (2011) to a low of 0% in Santa Cruz County (2010). As a percent of total income by place of work, commercial fishing ranged from a high of .05% in Sonoma County (2011) to a low of 0% in Santa Cruz County in 2010. Employment accounted for from commercial fishing in the GFNMS ranged from a high of .05% in Sonoma County in 2011 to a low of 0% in Contra Costa in 2010.

### Methods

For commercial fishing data, the California Department of Fish and Wildlife (CDFW) California Fishing Information System (CFIS) landings receipts database was used for years 2000 through 2012 (CDFW-CFIS 2013). The CDFW-CFIS contains daily landings by CDFW 10-minute by 10-minute blocks where the catch was made and by port and county where landed.

Pounds and value of catch (revenue received by the fishermen) are also reported by species, gear used, and condition of catch when landed (e.g. live, dressed heads off, etc.).

For the economic model, the California Ocean Fish Harvester Economic (COEFH) Model (Hackett et al 2009) was used. This model is based on a survey of the commercial fishing industry to obtain cost-and-earnings by 20 "Operational Categories" or OCs. The OCs are key to the economic impact analyses. OCs are combinations of species, gear type, catch condition, and vessel length. Each OC has its own cost function and multipliers derived from the IMPLAN Input-Output Model.

### More Information

The full report can be accessed online at:

[http://sanctuaries.noaa.gov/science/conservation/pdfs/gfnms\\_fishing\\_report.pdf](http://sanctuaries.noaa.gov/science/conservation/pdfs/gfnms_fishing_report.pdf)

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A Salmon boat the "BOUNTY" that fishes in GFNMS.



An aerial perspective shows the South Farallon Islands, surrounded by the GFNMS.