



## JOINT MANAGEMENT PLAN REVIEW

### ISSUE BACKGROUND: Wildlife Disturbance - Motorized Personal Watercraft

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#### Summary Description:

Motorized Personal Watercraft (MPWC) are small, fast, and highly maneuverable craft that possess unconventionally high thrust capability and horsepower relative to their size and weight. This characteristic enables them to make sharp turns at high speeds and alter direction rapidly, while maintaining controlled stability. Their small size, shallow draft, instant thrust, and “quick reflex” enable them to operate closer to shore and in areas that would commonly pose a hazard to conventional craft operating at comparable speeds. Many can be launched across a beach area, without the need for a launch ramp. Most MPWC are designed to shed water, enabling an operator to roll or swamp the vessel without serious complications or interruption of vessel performance. The ability to shunt water from the load carrying area exempts MPWC from Coast Guard safety rating standards for small boats. MPWC are also designed to accommodate sudden separation and quick remount by a rider. MPWC are not commonly equipped for night operation and have limited instrumentation and storage space compared to conventional vessels. MPWC propelled by a directional water jet pump do not commonly have a rudder and must attain a minimum speed threshold to achieve optimal maneuverability. They have no steering when the jet is idle.

Jet-propelled MPWC gained mainstream popularity in the United States in the 1980s, and sales accelerated through the 1990s. Their size, power, speed and sophistication have advanced steadily. Current models can carry up to 5 passengers and attain speeds over 60 miles per hour. Engine size and horsepower and vessel range and endurance have increased over time.

In addition to jet-propelled MPWC, other craft exist that share similar characteristics, including small jet boats, air boats, hovercraft (air cushioned craft), hydrofoils, and miniature speed boats. These vessels are also extremely maneuverable at high speeds, have shallow drafts, and powerful thrust/weight ratios. Some also possess the ability to shunt water from the load carrying area.

The majority of MPWC operated within the Monterey Bay National Marine Sanctuary (MBNMS) are compact jet-propelled craft that shed water from the passenger spaces. Larger size models are preferred in the high-energy ocean environment for increased power, range, and towing ability. Popular uses are operation within the surf zone, weaving in and out of wave lines, launching off the crest of waves and wakes, and towing surfers into large and/or remote wave breaks. MPWC are often operated in pairs or larger groups for camaraderie and improved safety. Some public emergency response agencies preposition MPWC ashore and conduct periodic training for potential ocean search-and-rescue missions.

Use of MPWC to tow surfers into large waves at Maverick’s, a surf break off Pillar Point, is a relatively new technique in surfing, allowing surfers to catch massive waves previously considered too large to ride. Use of MPWC for this purpose has increased dramatically during the past few years at Maverick’s and in the waters of Santa Cruz.

Since 1993, Sanctuary regulations have specifically defined MPWC and confined them to certain zones in order to protect marine mammals and seabirds and minimize nearshore multiple use conflicts. Many current MPWC designs do not fall within the Sanctuary’s definition of Motorized Personal Watercraft because it was based on prevailing design and performance characteristics in 1992. Based upon past observations and public comment, the MBNMS is evaluating the regulatory definition of MPWC, the need for some or all of the existing zones, the buoy demarcation system, and the need for effective enforcement and education to address conflicts within the zones. This issue will be treated as a site-specific issue for MBNMS to further investigate and characterize impacts on marine resources and issues related to user conflicts.



## ISSUE BACKGROUND: **Wildlife Disturbance - Motorized Personal Watercraft**

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### **How Do MPWC Impact Sanctuary Resources?**

The high speed and maneuverability of personal watercraft and the tendency to operate them in a persistent and repetitive manner within discrete nearshore areas, poses a significant potential disturbance to animals and habitats within the Sanctuary. Potential impacts include physical damage to marine life and shallow habitats, and behavioral modification and site abandonment/avoidance by sea birds, marine mammals, and sea turtles. In addition to environmental impact threats, conflicts have persisted between MPWCs and other recreational ocean users due to the erratic noise signature and operation of MPWCs.

Though no targeted scientific research has occurred within the MBNMS on environmental impacts of MPWC, research and evaluations have been conducted elsewhere that are applicable to this site. MPWC can operate closer to shore at high speeds and make quicker turns than other types of motorized vessels. MPWC have a disproportional thrust capability and horsepower to vessel length and/or weight, in some cases four times that of conventional vessels (U.S. Dept. of Interior, 1998c). Research indicates that impacts associated with MPWC tend to be locally concentrated, producing effects that are more geographically limited yet potentially more severe than motorboat use, due to repeated disruptions and an accumulation of impacts in a shorter period of time (Snow, 1989). MPWC are generally of smaller size, with a shallower draft (4 to 9 inches), and lower horsepower (around 75, as compared to up to 250 for large pleasure craft) than most other kinds of motorized watercraft (Ballesterio, 1990; Snow, 1989). The smaller size and shallower draft of MPWC means they are more maneuverable, operable closer to shore and in shallower waters than other types of motorized watercraft. These characteristics greatly increase the potential for MPWC to disturb fragile nearshore habitats and organisms.

MPWC operation poses particular risk to sensitive estuarine and stillwater areas within the Sanctuary. Research in Florida indicates that MPWC can increase turbidity and may redistribute benthic invertebrates, and these impacts may be prolonged as a result of repeated use by multiple machines in a limited area. That research has also shown that MPWC can increase local erosion rates by launching and beaching repeatedly in the same locations (Snow, 1989). Such impacts could be significant in a sensitive Sanctuary area such as Elkhorn Slough. Past research in the Everglades National Park indicated that fishing success dropped to zero when fishing occurred in the same waters used by MPWC, and scientists in the Pacific Northwest have raised concerns about the effects of MPWC on spawning salmon (Snow, 1989; Sutherland and Ogle, 1975). Salmon are a Federally listed species that migrate through the MBNMS.

Research in Florida also found that MPWC cause wildlife to flush at greater distances, with more complex behavioral responses than observed in disturbances caused by automobiles, all-terrain vehicles, foot approach, or motorboats. This was partially attributed by the scientists to a common operational characteristic of MPWC, where they accelerate and decelerate repeatedly and unpredictably, and travel at rapid speeds directly toward shore, while motorboats generally slow down as they approach shore (Rodgers, 1997). A study of harbor seal reactions to vessel disturbance in San Francisco Bay between 1998 and 2001 concluded that watercraft exhibiting sudden speed and directional changes were much more likely to flush seals than vessels passing at a steady speed and constant course (Green and Grigg, 2001). Scientific research also indicates that even at slower speeds, MPWC pose a significantly stronger source of disturbance to birds than conventional motorboats. Levels of disturbance are further increased when MPWC are operated at high speeds or outside of established boating channels (Burger, 1998). Research in the Imperial National Wildlife Refuge directly attributed declining nesting success of grebes, coots, and moorhens to the noise and physical intrusion of MPWC (Snow, 1989).

Numerous shoreline roost sites exist within the Sanctuary and research has shown that human disturbance at bird roost sites can force birds to completely abandon an area. Published evidence strongly suggests that estuarine birds may be seriously affected by even occasional disturbance during key parts of their feeding cycle, and when flushed from feeding areas, such as eelgrass beds, will usually abandon the area until the next tidal cycle (Kelly, 1997). Seabirds such as common murre and sooty shearwaters often form large aggregations on the surface of the ocean. Feeding aggregations of sooty shearwaters can often number in the thousands and cover significant offshore areas. These feeding flocks are ephemeral in nature and their



## ISSUE BACKGROUND: **Wildlife Disturbance - Motorized Personal Watercraft**

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movement is dictated by the availability of their prey. These seabirds are especially susceptible during these critical periods and disturbance could have negative impacts on them.

Researchers note that MPWC may be disruptive to marine mammals because they change speed and direction frequently, are unpredictable, and may transit the same area repeatedly in a short period of time. In addition, because MPWC do not produce low-frequency long distance sounds underwater, they do not signal surfacing mammals or birds of approaching danger until they are very close to them (Gentry, 1996; Osborne, 1996). Possible disturbance effects of MPWC on marine mammals could include shifts in activity patterns and site abandonment by harbor seals and Steller sea lions; site abandonment by harbor porpoise; injuries from collisions; and avoidance by whales (Gentry, 1996; Richardson et al., 1995).

### **How Does The MBNMS Currently Manage MPWC?**

The Monterey Bay National Marine Sanctuary restricted use of MPWC upon designation in 1992 and confined them to four zones outside of the four harbors in the Sanctuary, to help protect Sanctuary habitats, sensitive marine life, and other recreational users. The MBNMS regulation defines a MPWC as *any motorized vessel that is less than fifteen feet in length as manufactured, is capable of exceeding a speed of fifteen knots, and has the capacity to carry not more than the operator and one other person while in operation. The term includes, but is not limited to, jet skis, wet bikes, surf jets, miniature speed boats, air boats, and hovercraft.* Since adoption of this regulation, most MPWC manufacturers have designed vehicles that fall outside the MBNMS definition. Current MPWC models now are capable of carrying up to four people in addition to the operator and are therefore not subject to the MBNMS regulation.

Currently, motorized personal watercraft may launch only within the identified harbors and must proceed directly to the operating zone outside each harbor through a specified access route. Zone boundaries are marked by a total of 21 yellow Sanctuary can buoys and 4 Coast Guard navigation aids. The zone buoys are positioned along the perimeter of each zone but present added navigation hazards to mariners. The zones and access routes have been established by Federal regulation (Title 15, Code of Federal Regulations, Part 922, Subpart M, Appendix D) and lie adjacent to Monterey, Moss Landing, Santa Cruz, and Pillar Point Harbors.

Although no formal use surveys have been conducted, empirical observations indicate that most MPWC operation occurs off the coast of Santa Cruz and Half Moon Bay. While use does occur in the waters off the Monterey Peninsula and Moss Landing, it probably amounts to less than half of operation occurring off Santa Cruz and Half Moon Bay. Since the zones prohibit the use of these watercraft in the surf zone, which is considered to be the optimal area of operation by many users, it is likely that the MBNMS MPWC zones have deterred operation, and thus reduced or curtailed MPWC use within Sanctuary boundaries, since its designation in 1992.

Motorized personal watercraft are defined as Class A inboard boats by the U.S. Coast Guard and are subject to most boating regulations. MPWC operators are held accountable for operating in a safe manner and have been occasionally cited by State peace officers for reckless operation of a vessel. Most violations of MBNMS regulations involve operation outside of designated zones. While numerous verbal warnings have been issued, less than 10 fines (typically \$500 each) have been issued by the MBNMS since 1993. Selected State Game Wardens and State Park Rangers have been deputized to enforce MBNMS regulations and conduct both interpretive and punitive enforcement activities on behalf of the Sanctuary. Current California law restricts all vessels to a maximum speed of 5 mph within 100 feet of a swimmer or within 200 feet of known swimming or nearshore use areas and prohibits nighttime MPC operation. The City of Santa Cruz has prohibited MPWC operation (as defined in MBNMS regulations) within ocean waters under its jurisdiction.

Sanctuary education and outreach regarding motorized personal watercraft currently consists of 1.) a general brochure, which explains regulations, depicts zones, and describes potential environmental impacts of MPWC operations and tips for reducing or eliminating those impacts; 2.) signage at harbor launch ramps with information and maps depicting the MPWC zones and access routes; and, 3) occasional staff contact with users to inform or remind them of Sanctuary regulations and zones.



## ISSUE BACKGROUND: **Wildlife Disturbance - Motorized Personal Watercraft**

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### **Working Group Planning Topics**

The MBNMS has received substantial comment on the issue of MPWC over the past 10 years and particularly during the public scoping meetings for the Joint Management Plan Review. While the Sanctuary is very familiar many aspects of this topic, there are specific issues for which it is seeking information and advice. These issues are listed below by topic and characterized as questions to the working group. The working group will be asked to review these topics and questions and offer any necessary revisions to more adequately characterize the information needs of the Sanctuary.

#### **Definition**

- Does the revised draft MPWC definition adequately and precisely define the watercraft of concern to the Sanctuary?

#### **Zoning**

- What are the most common MPWC riding areas within the Sanctuary?
- What are the most used zones?
- How much would zone use increase if all jet-powered MPWC were restricted, and which zones would be affected?
- What criteria should be used for determining whether existing zones should remain open?
- Does the current buoy marking system adequately define authorized riding areas and provide an effective visual boundary?
- If the buoy system were eliminated, how could the zones be clearly and effectively delineated?

#### **Special Uses**

- Should exceptions be made to provide for emergency response training by public agencies, and if so, what limitations should be imposed on such training?
- Should limited tow-in be allowed at Mavericks? If so, how should it be managed?

#### **Behavioral Compliance**

- How should the Sanctuary conduct educational outreach to the MPWC community? What tools and methods are most effective?
- Are the current signs, and brochures adequate to inform and direct people to authorized riding areas?
- What enforcement resources are needed to enforce MPWC regulations?