

NATIONAL MARINE SANCTUARY
California Coastline

Regulations Proposal:

Motorized Vessels

Purpose:

To offer a proposal to SAC that would provide a balance between conservation and recreation involving motorized vessels (both boats and PWC's) that would address all issues and is viable well into the future.

Definitions:

The following definitions will be used in this proposal:

Environment = air quality, water quality, and marine life.

PWC = personal water craft or jetski.

Vessel = all motorized water craft including fishing vessels, power boats, submarines, and hovercraft.

Viewshed = specific areas that have a specialized viewing area or viewing impact area that would include but not be limited to such areas as Cannery Row, Beach Boardwalk, Opal Cliffs, San Simeon.

Sanctuary = used as the sanctuary as an entity combining the current and future boundaries of the marine sanctuary along with the governing and financial bodies that oversee the sanctuary.

PHPS = Port Hacking Protection Society's extensive summary on PWC's, found at ssec.org.au/hacking/html/Jetskis.pdf

Proposal Overview:

There is a current bias against PWC's based on their nature. This bias IS justified, however, all the studies I have read have dealt with how to eliminate them rather than control them or shape their future manufacturing. Through all my research, I have not found any reports that DIRECTLY compared PWC operations to power boats. In addition, not one report dealt with the viability of the PWC concept nor did any report deal with the LACK of restrictions on other water craft. When helicopters and motorcycles were first created, they were outcast and there was no vision as to their merit in our society. Although there are certain bikes and helicopters that validate original concerns, our society has designed ways to accommodate and control and even lead their production rather than eliminate them. They have become an important and viable part of our society today.

My proposal is based on all regulations being: **justifiable, valid, factual, realistic, and practical.**

My proposal is detail oriented and provides for growth in population and technology.

My proposal focuses on 3 main issues: 1) Fixing the lack of regulations on vessels other than PWC's. 2) Setting realistic and practical regulations on all vessels, to include PWC's. 3) Finding a common ground that balances all factors concerning vessels that accomplishes everyone's goals/needs.

In simplest terms: the idea of my proposal is to regulate ALL vessels EQUALLY in order to protect the aesthetics of the area and the environment, yet still allow for all vessels to enjoy the sanctuary. This would be done by separating vessels in a way, basically 2 categories; utility type vessels and recreational type vessels. Recreational vessels would be considered to be potentially much more harmful to the environment than functional. Multiple hoops would be set up to jump through for recreational users, acting as such a deterrent, that only users responsible and dedicated enough would be able to jump through all of them. At the same time, one of the hoops would be a source of income to the sanctuary, providing financial support that would grow or shrink as use did.

Author: Chris Hartzell

Professional background-

13 yrs in the Fire service specializing in Surf/Ocean/River rescue, performing as a Rescue Boat Operator on over a dozen actual rescues. A California State Fire Instructor level 2, I have the ability to translate complex issues into simple terms. 7 yrs with Monterey County Sheriffs Search and Rescue as team EMT, assistant training officer, and training officer. Going on 5 yrs as part time Emergency Dispatcher II with Monterey County Communications. Along with a Paramedic certification I hold numerous other certifications and have extensive other experience and training that allows me to be familiar with numerous complex and technical issues, creating and writing policies, familiarity with legal and liability issues, and the ability to think outside the box to accomplish goals quickly incorporating multiple facets and requirements of an issue.

Environmental background-

Before getting into the fire service my interests revolved around Marine Biology, Herpetology (snakes), and Ornithology (birds). By the age of 19 when I joined the fire service, I had put in 2.5 yrs and almost 300 hours as a Monterey Bay Aquarium Volunteer Guide and almost 200 hours volunteering with my grandmother at Pt Lobos State Reserve at the visitor's information booth. My specialties are whales and dolphins, birds, and sharks; specifically the Great White Shark. I have been an avid bird watcher for 22 years now and have been a trip leader on numerous occasions over the last decade. I have studied whales and dolphins for 20 years with special interests in Orcas. These interests have included participating in a research team in Washington's Puget Sound photographing and recording audio of the residential Orca pods there 4 yrs ago. This research involved operating a 10 ft zodiac for 8 hrs a day for a week and a half. I am an active Monterey Bay pelagic bird and whale watcher, which have included leading whale watching trips in the bay for over the past decade.

Political background-

In High School I was president of the Wilderness Club for 2 yrs and technical advisor for S.M.A.R.T. (Students Making A Right Tomorrow) for 1 year. Actions included organizing and participating in peaceful environmental rallies and protests and coordinating campaigns against environmentally unfriendly state bills and legislature. Specific accomplishments included organizing a campaign against SB198, the bill proposed to allow offshore oil drilling off the California Coast. Using my club staff we motivated other students to get involved and reached out to the public in 7 different counties getting almost 8,000 opposition postcards and 3,500 opposition letters signed and sent to numerous senators and congressmen.

Personal background-

Advanced SCUBA certified since the age of 16 with almost all diving experience in the Monterey Bay, I have also been a previous boat owner, current PWC owner, and avid participant in numerous water recreations including PWC's, kayaks, boating, body surfing, boogie boarding, and being raised by a fisherman I also enjoy fishing on occasions. With grandparents living in the Carmel Highlands since I was 4, I have been a long term resident of the Monterey area and have been photographing the sunsets and wildlife as well as the beautiful scenery of this area for at least 15 yrs. Lastly, over the years of doing so many activities of such a wide variety, I have gathered friends and acquaintances ranging in age and opinions, from those that see only the environmental side to those who see only public safety to those who see only the recreation side.

Summary-

I have well rounded and a broad range of experience, which allows me to know ALL facets of my proposal. I have the first hand knowledge of specifics that make my proposal in depth, valid, and complete. I know the actual species in the marine sanctuary and their specific behavior, I know the areas of visual impact and aesthetics, I know the environmental concerns, I know the advancement and specifications of all types of water craft and their technology, I know the public safety issues, I know about the legal and liability responsibilities, I know the people in the area that are on both sides of the issues and their concerns and desires, I know of financial issues and their importance as well as ways to address them. I have first hand knowledge of all of these things, which I feel will allow me to make a complete and balanced proposal for everyone.

Classification:

For the purposes of permitting, vessels would be classified into different categories as follows:

2-stroke motors, 4-stroke motors, PWC's, submersibles, and hovercraft.

Classification letters would represent each vessel classification

A = boat with any 2-stroke motor

B = boat with any 4-stroke motor

P = PWC with either 2-stroke or 4-stroke

S = submersible/submarine

H = hovercraft

Factors:

The factors that affect use of vessels are:

- 1) Noise
- 2) Speed
- 3) Pollution
- 4) Safety
- 5) Damage to environment

In order to address these factors, the facts related to the sanctuary in relation to the factors must be outlined.

Factor Facts-

- 1) Noise:

The PHPS addresses the noise of PWC's in comparison to other vessels. However, their statement regarding PWC noise in general is not viable. It is a scientific fact that lower frequencies travel farther than higher frequencies. A PWC does have a higher frequency noise that does alternate when it goes from wave to wave, but that higher frequency travels a shorter distance. This example can be shown by looking at whales and dolphins; the humpback whale uses low frequency song notes which have been recorded hundreds of miles away from the source while a bottlenose dolphin uses higher frequencies which some are so high they can't be heard by the human ear 1 foot away from the source and mid level frequencies of the average Orca travel less than a mile through the water. With water being a more effective sound conductor than air, it is safe to say that noise travels a shorter distance through the air than water. A first hand experience of this example is at an elevation of 600 feet and $\frac{3}{4}$ mile inland (Carmel Highlands), a twin 75 horsepower outboard 2 stroke motor (Coast Guard's Inflatable Rescue Boat) cannot be heard while the hum of a large diesel motor of a party boat or dive boat can clearly be heard. Therefore, the two frequencies, low and high, have to be dealt with separately.

Low Frequencies: Diesel and large bore gasoline motors are commonly found in larger vessels to power the size appropriately and thus the low frequency of their motors can travel a much farther distance. These vessels can be found in any size ranging from 15 ft to 100 ft or more and are more expensive to work on as maintenance must be done in the water or at a specialized dock capable of handling their size. Due to the nature of providing the necessary output to power these larger vessels, vessels with these larger, lower frequency motors range into the thousands and therefore taking their size and their numbers into consideration, it is unrealistic and impractical to regulate all these vessels for noise level.

High Frequencies: The smaller engines that put out a higher frequency can be regulated to a degree. The industry of motor technology recognizes the noise impact and every year engines get quieter and quieter. However the older models as well as some of the current small motors still put out a fair degree of noise. PWC's have the smallest vessel motors and generally are the loudest of the high frequency motors. For the purposes of comparison, the standard emergency vehicle siren runs at 100 decibels (db). PWC's historically have been running in the 55-75db range while 25 horsepower or more outboard motors can run in the 45-65db range. The newer models of PWC's are now being equipped with quieter motors and encased in sound protective foam and models made after 2000 are running in the 40-60db range. Because of the limitations on size in outboard motors, the technology to make them quieter is limited and thus even current models being

made are still running in the 45-65db range. This makes newer PWC's and current outboard motors equal in noise output and thus should be treated equally.

The regulation of these motors can easily be made by keeping them slightly offshore to allow distance between shore residences and the noise source. The appropriate distance would be approximately 300 ft from shore which would make the db range almost equal to a car motor on a residential street, approximately 20-30db. However, this distance is less than what is safe for the Pacific Coastline, as discussed in the later Factor Fact of Safety, and thus becomes irrelevant as a regulation.

2) Speed

There are two basic environments in our seas that affect speed of vessels: flat seas and rough seas. Rough seas are the equivalent to driving in fog, the heavier it is the slower you must go. As waves increase, speed must decrease, it is a given and therefore it is safe to say that high speed vessels need not be regulated in rougher seas. Flat seas provide for the highest speeds and such will need to be addressed in more detail. There are current federal guidelines already established for operating at high speeds close to docks and marinas to avoid boat collisions. Issues with PWC's having collisions on lakes is based on limited operational area. Because of the vastness of the Pacific Ocean, the Sanctuary will not have the higher numbers of vessels operating in close proximity of each other at higher speeds as you would see at lakes, rivers, or deltas and thus speed in this case is already covered by current federal guidelines. Current federal guidelines also have a catch-all statement of all operators must not exceed a speed that allows for them to lose control over their vessel and endanger others.

These facts invalidate any speed regulations regarding speed in rough seas, speed around populated areas, and speed with operating safely.

Speed and sea life is the most critical argument that must be looked at. In current arguments against PWC's, there is language stating that, "their high speeds allow for striking marine life and sea birds". Furthermore, language can be found that states, "their high speed does not allow noise to reach animals and birds fast enough to provide them with adequate time to escape". Although these statements are backed with no factual basis and can be dissected and invalidated (as follows below), they are important and viable arguments to evaluate.

- 1- Sound travels at roughly 600mph through the air and roughly 400mph through the water, unless a vessel is traveling at supersonic speeds, it is impossible for any creature to not have adequate notice of an approaching vessel.
- 2- If there are complaints about noise from PWC's operating near houses and populated beaches, there is obviously enough noise to warn a sea bird. There cannot be a complaint about noise bothering people and simultaneously a complaint about not enough noise to warn birds, this is a conflict.
- 3- On a flat day, there are many motor boats that can hit the same speeds as PWC's. In fact, PWC's have a top manufacturing speed of 60 mph while offshore racing boats hit over 100 mph. There are no current regulations against operating a speedboat in the Sanctuary.
- 4- Speed evaluations should be based on allowing for 2 things: time to maneuver once sea life is sighted and time for sea life to escape.
 - A) Maneuvering speed: determined by the distance at which an object is spotted and the ability to avoid collision within that distance.
 - B) Escape distance: the distance a vessel travels during the time from when sea life becomes aware of an approaching vessel until the time the sea life has reached a depth or distance to escape the vessel.
 - C) Another factor that must be added to finalize these calculations is draught depth: the deepest depth at which a vessel's motor or hull can cause damage to sea life.

Speed calculations:

Draught depths and max speed (approximated):

Vessel Type	Draught Depth	Max Speed	Injury Type
2-stroke outboard motor	18"	45 mph	Blunt & Slicing
PWC	6"	60 mph	Blunt

Sport boats	36"	80 mph +	Blunt & Slicing
Fishing boats	36" to 6' or more	40 mph	Blunt & Slicing
Commercial vessels	36" to as much as 20' or more	40 mph	Blunt & Slicing
Hovercraft	2"	45 mph	Blunt

Next, an evaluation of sea life that could realistically be come across must be done

Animal Type	Occurrence	Yearly Occurrence	Population Type
Ocean Sunfish	Very rare	Only during warm water periods	Solitary
Sea Turtle	Extremely Rare	Only during warm water periods	Solitary
Sea Otter (in kelp)	Common	Year round	Small groups
Sea Otter (ocean)	Can be common	Year round	Solitary
Harbor Seal	Common	Year round	Small groups in open ocean
Sea Lion	Very Common	Year round possible, mostly seasonal	Solitary to large groups
Blue Whale	Common	Seasonal	Small groups
Gray Whale	Very Common	Seasonal	Small groups
Dolphin	Very Common	Year round	Small to large groups
Pelagic Shark	Very rare on the surface	Year round	Solitary
Common Murre	Common	Year round	Small to large groups

Sea life escape distance (approximated): This is actual sea life found in the Sanctuary

Animal Type	Minimum Distance of Awareness	Reaction Depth and Time	Travel Depth and Time
Ocean Sunfish	2 ft	12" in 2 seconds	12" / second
Sea Turtle	100 ft	12" in 2 seconds	12" / second
Sea Otter	100 ft (in kelp)	24" in 2 seconds	24" / second
Sea Otter	200 ft (open ocean)*	24" in 2 seconds	24" / second
Harbor Seal	200 ft	24" in 2 seconds	36" / second
Sea Lion	500 ft	36" in 2 seconds	48" / second
Blue Whale	¼ mile	12" in 6 seconds	6' / second
Gray Whale	¼ mile	12" in 4 seconds	8' / second
Dolphin	500 ft	36" in 2 seconds	10' / second
Pelagic Sharks	300 ft	36" in 2 seconds	10' / second
Common Murre	300 ft	36" in 2 seconds	18" / second

NOTE: Reaction depth is not the same as travel depth. This is the minimum amount of time for the animal to decide to react to the approaching vessel and then get to an initial depth. Examples: 1) a whale on the surface cannot just dive without taking time to arch its back and start its dive, therefore taking it a few seconds just to make it to its first foot of depth. Once at its first foot of depth though, it is in position for max speed. 2) a sea otter once it decides to react, must turn over on its stomach, arch its back, and propel itself forward and down, taking a couple seconds to make it into diving position and then getting itself below the surface.

* A Sea Otter's awareness level increases dramatically in the open ocean due to its loss of protection of the kelp and its exposure to predators such as pelagic sharks.

An equation is then used to establish the maximum speed a vessel can travel without noticing sea life and give that sea life enough time to reach escape distance.

The equation works as follows:

maximum mph = ft / seconds

Awareness distance (X) per seconds needed to reach 36" deep (TT)

divide down to number of feet (Y) per 1 second (T)

multiply number of feet by 3600 seconds (1 hour) gives maximum feet (Z) per hour (H)

maximum feet (Z) divided by 5280 ft (1 mile) gives maximum MPH

$$X/TT = Y/T = (Y \times 3600)/H = Z/H = (Z/5280) \text{ per Hour} = \text{MPH}$$

Examples:

1) Sea Turtle = 100 ft (X) per 4 seconds (TT) to 36" deep

$$100 \text{ ft}/4 \text{ sec} = 25 \text{ ft}/1 \text{ sec}$$

$$25 \text{ ft} \times 3600 \text{ sec} = 90,000 \text{ ft}/\text{Hour}$$

$$90,000 \text{ ft}/5280 \text{ ft (1 mile)} = 17.05 \text{ Miles / Hour}$$

2) Blue Whale = 1/4 mile and 12" in 6 seconds with 6' for every second after

$$6 \text{ ft}/1 \text{ second} = 72"/1 \text{ sec}$$

$$24" \text{ of } 72" = 1/3 \text{ of } 1 \text{ sec} = .33 \text{ sec} + \text{ the } 6 \text{ sec for the first } 12" = 6.33 \text{ sec to reach } 36" \text{ deep}$$

$$1/4 \text{ mile of } 5280 \text{ ft} = 1320 \text{ ft}$$

$$1320 \text{ ft}/6.33 = 208.53 \text{ ft}/1 \text{ sec}$$

$$208.53 \text{ ft} \times 3600 \text{ sec} = 750708 \text{ ft}/\text{Hour}$$

$$750708 \text{ ft}/5280 \text{ ft (1 mile)} = 142.18 \text{ Miles / Hour}$$

Based on this equation, the following graph shows the maximum speed an unaware vessel could travel and allow the sea life enough time to reach their escape distance.

Animal Type	Max Speed for PWC (6 inch Draught)	Max Speed for Sport/Fishing Boat (36 inch Draught)
Ocean Sunfish	1.36 mph	.34 mph
Sea Turtle	68.18 mph	17.05 mph
Sea Otter (in kelp)	68.18 mph	27.27 mph
Sea Otter (ocean)	136.36 mph	58.53 mph
Harbor Seal	136.36 mph	58.53 mph
Sea Lion	340.91 mph	170.46 mph
Blue Whale	900.00 mph	142.18 mph
Gray Whale	900.00 mph	211.77 mph
Dolphin	340.91 mph	170.46 mph
Pelagic Shark	204.55 mph	102.27 mph
Common Murre	204.55 mph	102.27 mph

Eliminating factors:

-Ocean Sunfish and Sea Turtles are quite rare to come across, even for whale watching trips looking for them, and only come into the area during periods of warmer water. Because of their rarity and their sporadic and infrequent timing of them, it is not practical nor realistic to use them for establishing a speed criteria.

-Sea Otters in the kelp should not be used for the criteria basis as operating near and in kelp is already addressed.

-Sea Lions, Dolphins, and Pelagic Sharks are ruled out due to their high awareness level in addition to their fast reaction time and high speeds.

-Whales should not be used as their high awareness level is extremely high, probably the highest of all sea life.

-The Common Murre is the most common and least reactive of pelagic sea birds, yet still should not be used as their awareness level is extremely high and all birds can easily maneuver from the path of vessels.

Speed Criteria:

-Using the information above, the Sea Otter found in open ocean and the Harbor Seal are best used to establish a speed criteria. They are both found throughout the Sanctuary and are the slowest reacting sea life that is found fairly commonly and year round.

-Using the information above, a sport boat with a draught of 36" has the deepest draught for greatest speed/injury capability and its draught depth should be used as the model to establish speed criteria.

-Taking the Sea Otter (ocean) and Harbor Seal information along with the information from the sport boat, it can be **justified** that the fastest an unaware vessel can travel in the sanctuary on the flattest seas is 58.53 mph to give sea life adequate time to escape. Rounding this to 60 mph is practical and reasonable.

Speed Regulation:

-All vessels operating no faster than 60 mph in the Sanctuary is now validated and justified.

-Enforcement would be a subjective matter, but realistically in our ocean, only needed for obviously reckless speeds by high performance sport boats.

-By establishing the 60 mph speed and validating it, manufacturers have a guideline for the production of vessels and motors.

-This model can be used nationwide in all seas.

3) Pollution

There are currently 4 basic types of vessel motors; standard 2-stroke, direct injection 2-stroke, 4-stroke motors, and diesel motors. The EPA has established 2006 environmental guidelines for pollutants put out by 2-stroke motors used in the water. Many inland lakes and waterways have adopted these guidelines and they are recognized as the standard to go by for regulating 2-strokes. Currently, only the direct injection 2-stroke, 4-stroke, and diesel motors meet these EPA guidelines to the 2006 standard. Although there are thousands of older standard 2-stroke motors still in use, manufacturers are recognizing the EPA as the standard to go by in building all motors and therefore the production of standard 2-stroke motors is being phased out rapidly.

Regulation of all vessels should follow the EPA guidelines adopted by many inland waterways. However, because of the large impact on the fishing industry using the older standard 2-strokes, a realistic grace period should be allowed for the transition to the EPA guidelines. Setting a standard that by 2006 all motors used in the Sanctuary shall comply with the EPA's 2006 guidelines gives a justifiable and realistic transition time.

Many 4-stroke motors used in vessels are the same motors used in land based vehicles, yet are not regulated the same. A 1985 Chevy V-8 motor in a truck is required a smog check every 2 years, while the same exact motor can be found in many power boats not requiring any smog check. The same standard should be applied to both motors, regardless of where they are used. They both pollute the same air. However, because vessels in the water are not used nearly as often as vehicles on land, the time frame for a motor becoming pollution bearing is extended. Therefore, the same standards for gasoline motors used on land should be followed by vessels on the

water but with a doubled requirement term, i.e. a car must be smog checked every 2 years while a boat motor must be smog checked every 4 years.

4) Safety

There are multiple facts about our coastline that make safety one of the biggest regulating factors of all vessels. The Pacific Coastline is a “Primary Coastline” geographically. This means it is a place where the earth’s crust is being forced into the earth, creating a more rocky and terrain variable coastline. This is characterized by rocky outcroppings, submarine canyons, cliffs, steep beaches, and other like geographical features. In addition, the planet’s wind and jet stream pattern along with the vastness of the Pacific Ocean, allow for winds to start from the arctic and have thousands of miles to build waves where they travel unimpeded to the California and Oregon coasts. The combination of these factors gives us constantly changing depth, random wave activity, capacity for large waves, and ever changing weather conditions that stretch all the way from Alaska to approximately Point Conception in Southern California. A standard beach comparison using Southern California and the East Coast with Central and Northern California shows the difference clearly. Those beaches have gradual depth increasing over a long distance with 2 clear sand bars set far apart and staying approximately in the same location and same size. This creates a wave that rises in size gradually and breaks once far off shore then rolls forward and gradually builds again to break a second time just off the beach and then rolls forward and up onto the beach. Big waves are usually broken down somewhat prior to reaching the first bar and are broken down again when they hit the second bar. In comparison, beaches in Central and Northern California have depth increasing rapidly over a short distance and have random and intermittent sand bars that are sometimes completely non-existent. Underwater canyons and above water cliffs both on and off shore cause tunneling of currents and waves. Rock outcroppings and points create refraction of waves into different directions. This creates a wave that is random in size, shape, and speed. As it approaches the beach it builds and as it breaks it creates a “dumping” wave. This wave does not always move forward smoothly and gradually rolls up the beach. It can create a high steep wave that breaks straight down. This driving force, depending on the geography, can travel straight down and then straight back up, creating an explosive wave break, or travel explosively forward up a beach with a large amount of water traveling up the beach very rapidly and then drawing back down the beach very rapidly with tremendous force, or it can travel down and backwards into the next oncoming wave. These waves are random in size, shape, and behavior and are directly responsible for thousands of emergency incidents along the Central and Northern California coastline. Large, variable wave dynamics, rapidly changing underwater geography with sharp rocks, make for a very dangerous coastline. In addition, our coastline supports Giant Kelp. This kelp is a tangling property for all motors. Although larger motors may be able to slice through the kelp, this effect causes air cavitation to the intake area and can damage a motor internally over time. Because Giant Kelp grows in less than 100 ft deep, operations in the kelp pose a safety problem of stalling motors that can’t cut through it while the vessel is close to shore in the surf line.

For the purposes of regulation, there are numerous factors that play into trying to regulate all vessels the same to operate in a safe way off our coastline. Weather conditions, sea conditions, shoreline geography, and function of the vessel all play into finding a common ground for safety. Of all the factors, wave dynamics, for the reasons described earlier, are the defining factor for safety. Although random and variable, it can be generally said that dangerous wave conditions for a vessel are extremely rare beyond 500 ft offshore. Therefore, setting a regulation that all vessels shall remain more than 500 ft off shore outside of marinas is viable and validated. There is not an argument out there that can justify operating closer to shore than 500 ft is impeding any industry enough that it should sacrifice safety. The same goes for recreational activities with the exception of surfing. Fishing arguments of certain species being easier to catch closer than 500 ft are unjustified, there is not a species of fish that is easier to catch based on distance from shore, but rather on depth and underwater terrain. There is not a single underwater terrain that only exists within 500 ft of shore, nor is there a standard depth for 500 ft off shore. Diving from boats is routinely done more than 500 ft offshore as the idea of diving from boats is to eliminate the kick out on the surface to increase bottom time once divers drop down to depth. Arguments about diving in the kelp forest must be done within 500 ft of shore are non-viable. The idea of kelp diving from a boat is to start at the outer edge of the kelp bed and most of the best areas to dive kelp beds in the sanctuary have the outer edges of the beds beyond 500 ft from shore.

Any vessel that was to overturn or fall in distress at 500 ft offshore, in the roughest conditions, would provide ample time for anyone on board to find and activate distress signals, find and don flotation gear, attempt to correct their distress or try and get farther out, and provides more time for emergency responders to arrive on scene prior to an immediately life threatening situation.

5) Damage to environment

The environment of the Sanctuary only provides for damage to surface kelp and sea life. Sea life has been addressed under #2 Speed. Surface kelp grows in less than 100 ft deep and thus, only the top of the kelp can be damaged by vessels. Because of the tangling and plugging nature of kelp with motors, both propulsion and jet powered, it is generally avoided getting into kelp beds and thus regulation isn't needed. The California Sea Otter is a mammal that is protected under the Marine Mammal Act. It often uses kelp as a way to 'tie' itself up to avoid floating away. The Marine Mammal Act specifies that all vessels must not approach its protected animals within 300 ft or 100 yards. Because of this it is reasonable to require vessels to operate at a speed that allows for it to keep this distance should it come across the scenario. The SCUBA diving amongst our kelp forests is among the best in the world, along with kayaking along the beds, it is unfair and impractical to make regulations to eliminate all vessels operating near or in kelp, but rather to regulate their speed so they will not disturb life in the kelp beds.

Proposed Regulations:

All points that affect vessel use have been discussed so far and following would be the final regulations established by this proposal.

The following regulations would apply inside the Sanctuary boundary:

- 1) All vessels operated in the Sanctuary shall be 2006 EPA compliant by 2006.
- 2) All vessels shall be limited to no-wake speed within 500 feet of shore or within 300 feet of the outer edge of kelp beds.
- 3) All vessels shall not operate within 500 feet of shore unless approaching or leaving a dock or designated marina or properly permitted to operate within a surf zone.
- 4) All vessels shall abide to all state and federal operating guidelines. This shall include but not be limited to the Marine Mammal Act, Reserve boundaries, National Park boundaries, etc.
- 5) All vessels shall abide to safety equipment standards set forth by the USCG. This includes PWC's being required to carry the same compliment of equipment as a small boat, i.e. flares, extinguisher, flotation devices, radio with channel 9/16 capability and antenna of a minimum of 3ft height.
- 6) All vessels must provide documentation and submit a fee to acquire a Sanctuary Permit to Operate. This permit would be displayed in the form of a numbered and colored sticker permit in front of the registration sticker on the bow clearly indicating that the vessel complies with Sanctuary guidelines. This sticker would be larger than the registration sticker and provide the boat classification, its Sanctuary Registered number, and geographic letter. The number would indicate its assigned sanctuary number and the letter would indicate its geographical home region. Temporary Permits would be issued for a small fee and would be required for any vessel not exempt. Temporary Permits would be valid for 1 week and a maximum of 6 Temporary Permits could be applied for in one calendar year.

Examples: if San Luis Obispo (A), Monterey (B), Santa Cruz ©), and Half Moon Bay (D)

- A green sticker with # A305B would be the 305th registered boat expiring in 2003 (green) with an EPA compliant 2-stroke inboard or outboard (A) with a home region of Monterey (B).
- A purple sticker with #P56C would be the 56th registered PWC (P) expiring in 2004 (purple) with a home region of Santa Cruz (C).

- A blue sticker with # B505D would be the 505th registered boat expiring in 2005 (blue) with a 4-stroke smog compliant motor (B) with a home region of Half Moon Bay.
- A green sticker with # T12/15 would be a temporary 1 week permit (T) expiring on 12/15 of 2003 (green).

Exemptions:

- Fire/Rescue vessel because of their purpose must use all available technology and means to reduce response time to save lives.
- Commercial vessel over 40 feet are powered by large motors and impractical to haul out and smog. Additionally, because they are commercial their use is greater and thus it is not in the operator's best interest to have a poorly running vessel. The number of commercial vessel over 40 feet running a poorly maintained high pollutant motor would be a fairly insignificant impact on the Sanctuary.
- Military vessel due to their business of constant travel and national safety should be exempt.

- 7) If the number of a specific classification of vessel begins to exceed a safe operating environment, the Sanctuary may set a limit on the number of permits issued for that classification and provide a lottery system for acquiring a permit. This lottery system would be the equivalent to the "hunting ticket" lottery system used for hunting certain game in many states.

Example: PWC population becomes large enough that accidents are not uncommon, high number of complaints, ramps become overcrowded in the Santa Cruz region, a lottery system would be held to limit the number of PWC permits to 100 in the Santa Cruz region in one calendar year. PWC's still wishing to operate may go apply for another region that either is not impacted and has no lottery, or is impacted and can apply in that region's lottery, or replace their 2-stroke with a 4-stroke and apply for a different classification. An overpopulation of 4-stroke driven boats would result in the same lottery system for that classification.

- 8) A complaint process will exist. Using the Sanctuary Permit # a complaint can be lodged against the owner of that permit. This will include 3 different steps:
- Step-1 At 5 complaints from a minimum of 3 different complainants within 1 calendar year, the permit may be suspended pending review. The owner must appeal to the Sanctuary and provide an adequate case to keep the permit. The Sanctuary will review the argument provided and on a case by case basis, either revokes the permit for that calendar year or lift the suspension. If revoked the owner may re-apply for a new permit at the next calendar year. Suspension or revoking of a permit in one classification in one region will apply to only that classification in any region.
 - Step-2 A second suspension within a 3 year period will equal a minimum of 10 complaints from 6 different complainants and result in automatic revoking of all permits held by that owner. The owner must wait a minimum of 1 calendar year and 1 day to a maximum of 2 calendar years before re-applying for any permit in any classification in any region.
 - Step-3 A third suspension will equal a minimum of 15 complaints from 6 different complainants in 4 years of operating in the Sanctuary over a 6 year period and result in revoking all permits in all classifications in all regions for a minimum of 5 calendar years.
- 9) Anyone who wishes to make a complaint may submit a written complaint to the Sanctuary providing ALL of the following:
- 1- their complaint
 - 2- the details of the incident
 - 3- how it violates either Sanctuary regulations, State laws, Federal laws, or Safe Boating Practices
 - 4- their name and contact information should they be needed for further contact by the Sanctuary
- Any missing component makes the complaint invalid.
- 10) Any ticket received for violation of a state/federal law shall equal 1 complaint by 1 source, a second ticket would equal 2 complaints by 2 sources, and so on.

- 11) Any person found guilty of violating any state or federal laws, in addition to facing the penalty of breaking those laws, shall have their permit revoked according to step 1 above.
- 12) Any violation of Sanctuary regulations by a permit holder shall result in the following:
 - 1- first violation will result in a warning
 - 2- second a small fine
 - 3- third a larger fine and suspension of permit for review
 - 4- fourth a large fine and automatic revoke of permit according to step 1 above
 - 5- fifth a large fine and revoke of permits according to step 2
- 13) The current USCG regulation that any vessel's noise may be so loud that it warrants citation shall be upheld. Any vessel modifying their motor and concerned about their noise level may have their vessel independently tested for db level and can carry that documentation on board to provide to any regulatory official.

*A guideline for max db at idle should be established. It should be a practical and realistic db level that can apply to ALL vessels. The guidelines for vehicle radios might be a good place to start, no more than 100db at 50ft.
- 14) Any vessel wishing to operate inside the surf zone must submit for a surf zone permit. Surf zone permits must be carried on the vessel at all times. Any vessel operating in the surf zone must notify USCG on each day that they are operating in the surf zone. They will provide their permit number and location of operation. Vessel operators applying for a surf zone permit must send in an application to the USCG with experience and training justifying they are capable of safely operating within a surf zone. Cases will be reviewed by the USCG on a case by case basis and will forward any validated applications to the Sanctuary where it will be reviewed and a permit issued for use in the calendar year. Permits must be renewed each calendar year. A fee will be charged for each surf zone permit issued. Surf zone permits may be limited to a specific number if the population of surf operators becomes dangerous and a lottery system will be implemented.
- 15) Surf zones (within 500 feet of shore) will be established for the purpose of identifying a geographic area that is unique in big waves and safe enough to use vessels, such as PWC's, for either surfer towing or surfer photography. These areas will be established as unique areas and will be designated such based on specific criteria:
 - 1- Unique large wave dynamics.
 - 2- Isolation from normal recreational activities (boogey boarding, swimming, etc).
 - 3- Safe zones for vessels to escape the waves if needed (i.e. Mavericks has a unique wave dynamic that has waves only breaking in an area of a couple hundred feet while either side of that break remains relatively calm. This would be different than say the beaches of Moss Landing where the wave break is consistent over miles not allowing a surfer or vessel in distress to easily escape the break).
 - 4- Access to the 911 emergency system (i.e. must have a payphone or call box within reasonable distance of the beach).
 - 5- Readily accessible to the water and to the shore by emergency personnel (i.e. does not require a lengthy operation, such as a rope rescue operation, just to access the beach)
 - 6- Underwater terrain that is forgiving to surfers and vessels (i.e. no reefs 2 ft below the surface, an area must allow for the occasional 'spill' of a vessel or surfer)
- 16)
- 17)

Summary:

The use of all motor vessels inside the Sanctuary is increasing in population, regularity, and variety. All motor vessels affect the Sanctuary in pollution level, safety, and impact on the environment. Rather than increasing bans good regulatory efforts should be made. With good regulations the Sanctuary can provide a well balanced recreational environment, providing for good use yet providing good care and protection of the

environment. Vessels like PWC's and submersibles, while purpose is more specific in design now, do have the ability to be a useful tool. PWC's have the ability to be easy to use for SCUBA diving off of, conducting research, as well as recreational fun. Good regulations that recognize the potential of all vessels have the ability to lead the industry rather than fight it.

Specifically dealing with PWC's, I feel that these guidelines I've provided, although needing some fine tuning, can make the Sanctuary a leader in regulating vessels. The Sanctuary can set the standard in providing a resource that is well balanced in preservation and use.