



THE CHANGING TIDE

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in cooperation with the Department of Boating and Waterways

Cleaner Burning, Quieter, and More Fuel Efficient New 4-Stroke PWCs!

If you're in the market for a PWC, you might want to consider one of the new 4-stroke models introduced this past summer by Bombardier (SeaDoo GTX 4-TEC) and Yamaha (WaveRunner FX 140). These new models meet both the 2006 EPA exhaust emissions regulations and the new 1998 California Air Resources Board (CARB) marine engine standards.

According to CARB estimates, carbureted two-stroke engines can discharge up to 30% of their fuel unburned into the air and water. Some water agencies have banned or restricted watercraft use on local lakes due to water pollution from unburned fuel.

The introduction of four-stroke PWCs represents a significant new step towards improving water quality and protecting PWC access to California waterways.

For more information, see page 4

California Boating Law 101: Crib Notes from the Changing Tide

Not that we're in any way advocating cutting corners--but who really has the time to read California Boating Law from cover to cover? Certainly not you. Luckily, the Changing Tide is here to help! Our boating law crib notes will provide you with a quick and dirty version of what our lawmakers and enforcement agencies have asked you to do to protect California's navigable waterways.

Our topic today:

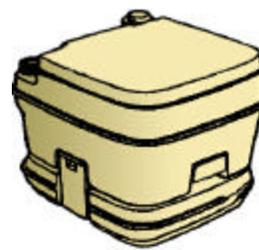
Sewage Discharge from Recreational Boats

For 99% Of California's Boaters, the Easiest Guideline is:

No discharge of **untreated** sewage is allowed anywhere within 3 miles of the California coastline. Remember, there is also no discharge of **treated** or **untreated** sewage into any federally designated "No Discharge" Areas or into any enclosed marinas, harbors, or inland waterways.

The Longer Guideline Has 3 Parts:

1. Boats less than 65 feet may use a Type I, II, or III Marine Sanitation Device (MSD). Boats over 65 feet must use either a Type II or III MSD. Most recreational boaters that have sanitation devices aboard their boats have a Type III MSD, which is simply a holding tank or portable



portable toilet

toilet. Type III MSDs typically provide little or no treatment of onboard sewage.

2. Even Types I and II MSDs usually cannot

provide consistent treatment to meet the legal standards of extremely low visible solids and bacteria. Boats equipped with Type I and II usually choose to use a pump-out rather than to provide the constant monitoring required to demonstrate compliance and avoid a \$2000 fine.

3. Even those MSDs which claim to eliminate all bacteria through electricity, UV light, chemicals, or other

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CCBN Central Coast Chapter Insert



The SMBRP/F, CIWMB, and CDBW, together with California's recreational boating community, are working to improve the health and quality of our state's waterways.
We believe that together, we can all make a difference.



Program Spyglass

Many Programs Exist to Provide Cleaner, More Healthful Waterways; These are the Programs to Watch

The USC Philip K. Wrigley Marine Science Center

The USC Philip K. Wrigley Marine Science Center

Center is a stretch of the University of Southern California campus--located not in South Central Los Angeles, but on Catalina Island! Located in Big Fisherman Cove - a small cove near Two Harbors - the center is a laboratory and housing complex used for teaching and research in the environmental and biological sciences.

Wrigley Marine Science Center provides opportunities for conducting scientific research on socially significant environmental issues, linking scientific findings to decision-makers in society and business. Through their educational programs, Wrigley staff and volunteers use the latest in technology to foster an interest in science and the

environment among students of all ages.

Three decades of ecological and oceanographic research in this area provide a rich context for many researchers conducting new and on-going scientific investigations. The marine lab is an ideal location for marine research, providing convenient access to a variety of near-shore and open water environments. The cove also shelters a marine life refuge, established in 1988, comprised of relatively pristine bedrock and boulder intertidal habitats, soft sediment and kelp forest subtidal habitats, and a broad diversity of algae, invertebrates, fish and plankton. Deep oceanic water for blue-water research is just a short distance offshore.



The USC Catalina Hyperbaric Chamber is also housed here and is available to treat dive accident victims.

Things to Know

The waters located in Big Fisherman Cove are part of a state marine life refuge. The refuge includes waters that are approximately 50 yards offshore from the cove to Blue Cavern Point. It is unlawful to remove any invertebrate or specimen of marine plant life from these waters. Anchoring and fishing are also prohibited.

Things to Do at Wrigley MSC

Between Memorial Day and Labor Day each year, the USC Wrigley Marine Science Center opens its doors to the public from 2:00 p.m. to 4:00 p.m. every Saturday for *Summer Saturdays at the Lab*. Guests can see an eel feeding, explore marine organisms in the center's touch tanks and tour the facility, including the USC Catalina Hyperbaric Chamber. Just walk over to the center from Two Harbors, catch a shoreboat or ride over in a dinghy.

Special activities for supporters of the Wrigley Marine center are held throughout the year. For more information, call the USC Wrigley Institute for Environmental Studies at (213) 740-6780.

The Wrigley Marine Science Center is also available for private conferences. Please call (310) 510-0811 for more information.

California Boating Law 101:

Continued from page 1

means still cannot eliminate the fine particles that remain after treatment. Those dust-like particles may not have any odor or bacteria, but they can still coat the gills of fish. This can lead to eventual suffocation of some of our favorite critters around our boat-slips. The legal limit is no visible solids whatsoever.

The Easiest Way to Think About It:

None of the MSDs that treat sewage onboard can clean up sewage as well as a shore-side, publicly maintained sewage treatment facility. These treatment plants are usually run by a City or

County sanitary sewer district and have a 24-hour staff that frequently checks the bacterial, solid, and other parameter levels of the treated sewage.

So, the most environmentally sound way to manage sewage on-board is to have an MSD with a holding tank that is always emptied at a sewage pumpout. Alternatively, you may choose to keep a portable sanitary toilet on-board and empty it at a shore-side dump station or in your toilet at home.



National Pumpout Symbol

Crib notes weren't enough? For more information check out the homepage for the Department of Boating and waterways at: <http://www.dbw.ca.gov/>.

DESTINATION SERIES

Have Boat, Will Cruise.

Catalina Island

About 26 miles from the coast of Los Angeles County lies Southern California's most popular island destination - Catalina Island. Day or night, land or water, there is plenty to see and do on the island. Visitors can spend their days on land golfing, shopping, hiking, biking, nature walking or sightseeing (with or without an island tour), or spend time on the water swimming, deep sea fishing, diving, snorkeling, or kayaking.

Sunsets on Catalina can be spectacular and it's never difficult to find entertaining nightlife in both Avalon and Two Harbors.

The island, which is 18 1/2 miles long from its northwest end to its southeast tip, has two main harbors and many coves for the recreational boater to enjoy.

Avalon Harbor

In 1919, Avalon began its transition into one of the most distinctive island resorts in the country. Today, this romantic city, which is like no other in Southern California, welcomes thousands of tourists from around the world to its secluded bay. Visitors who hike, bike, or take a tour bus around the island can expect to see much of what island explorers witnessed in the early 1900s.

Right in the heart of the city, along the beach, is where visitors will find Avalon's fabulous boardwalk. This restaurant, bar, and boutique-lined walk starts near the landing dock, circles the bay, and ends at the Casino, Avalon's most famous landmark. Both the Casino and bay have been



Avalon Harbor

painted by many artists over the years and both continue to draw thousands of tourists to Avalon's shores. Avalon is truly a vacationer's paradise. People are friendly, the weather is great, there are no traffic signals, and the surrounding waters sparkle with clarity.

To obtain a mooring in Avalon Harbor, Descanso Bay, or Hamilton Cove, arriving vessels must standby at the harbor main entrance for an assignment from the Harbor Patrol Boat (Ch 12, 16). Reservations are not accepted.

Anchoring is allowed outside the breakwater, west of the Casino, 100 yards outside the mooring areas. Choosing a location to anchor is left to the discretion of each boat operator.

Two Harbors

Two Harbors is located at the western end of Catalina Island. With a year-round population of less than 200, this charming island village offers boaters one of the

most entertaining nightlife settings that can be found anywhere on the island - Doug's Reef. Visitors should expect to find warm, sunny days in the summer, relatively uncrowded beautiful weekends in the spring and fall, and cool temperatures in the winter. Two Harbors is also a great place to spend the day hiking, swimming, or enjoying a picnic. And, because of its lush kelp forest, Indian Rock (near Emerald Bay) is one of the most popular snorkeling and diving spots around the island.

To obtain a mooring here, arriving vessels must contact the Harbor Patrol (Ch 09).

Anchoring is allowed in all coves 100 yards outside moorings, except in Big Fisherman's Cove Reserve.

For more information about Catalina Island, we suggest visiting the following websites before you depart:

www.catalina.com

www.sailorschoice.com/catalina.htm

Avalon Harbor is a **No Discharge Harbor!**

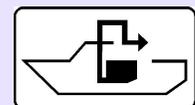
No sewage, treated or untreated, may be discharged.

Harbor Patrol officers reserve the right to inspect all marine sanitation devices in the harbor. The Harbor Patrol issues a brochure to all arriving vessels explaining Avalon's sewage "No Discharge" program.

Inspections include placing dye tablets in on-board heads to determine holding tank compliance with the "No Discharge" law.

Any vessels refusing placement of dye tablets into each on-board head will be denied a mooring in Avalon Bay. Any vessel found violating this ordinance will be expelled from Avalon for one year and is liable for a fine of up to \$500.

There is a pumpout dock near the Casino and a "head pumper" mobile service for a fee.





In December of 1998, the California Air Resources Board adopted standards to reduce exhaust emissions from outboard motors and personal watercraft.

What you should know about California's new marine engine standards:

- ♦ **They require cleaner engines.** Beginning with 2001 models, new outboard engines, PWC, and jet boats must be 75% cleaner. By 2008, they must be 90% cleaner. Some of today's 4 stroke and direct-injected 2-stroke engines already meet the 2001 standards.
- ♦ **They require labeling on new engines.** Manufacturers must apply an environmental label to new outboard engines and personal watercraft which clearly identifies emissions performance of the new engines.
- ♦ **They do NOT ban the use or sale of any existing outboard engines or personal watercraft.**
- ♦ **They do NOT restrict boating on any lakes or rivers.** Only water agencies can manage access to lakes, rivers, and reservoirs to protect or improve drinking water supplies.
- ♦ **They do NOT apply to stern drive, inboard, or diesel engines.**

-From the CARB Publication "What Every Boater Should Know"

Like to Know More?

Websites for new 4-stroke PWCs and CARB marine engine standards

Direct fuel injection and other advances in technology by marine engine manufacturers have made a significant difference in the level of fuel economy, exhaust emissions, and discharge of unburned fuel boaters can expect from their new machines.

For more information on 4-stroke PWC technology, go to:

www.yamaha.com

www.sea-doo.com

To learn more about the differences between two-cycle and four-cycle technology, go to:

www.howstuffworks.com/two-stroke.htm

To learn more about the new CARB marine engine standards, go to:

www.arb.ca.gov



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