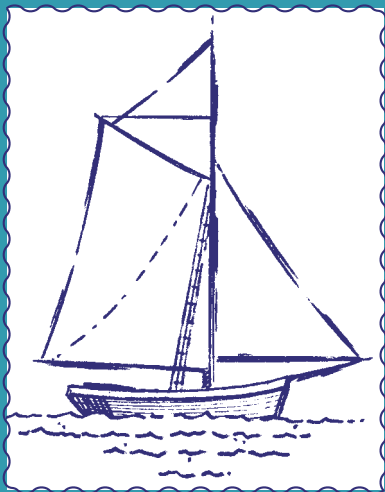
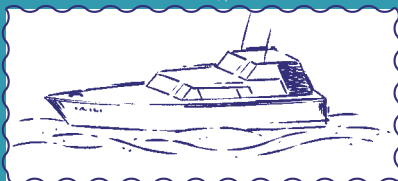
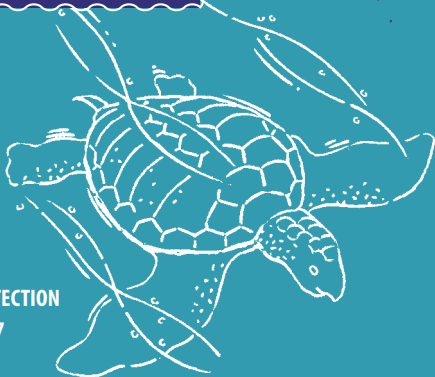




Action Guide for Boaters



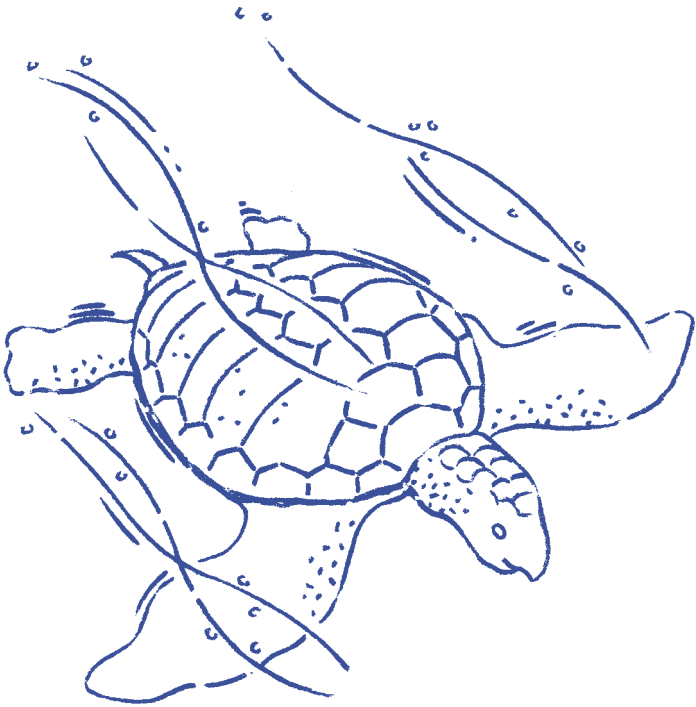
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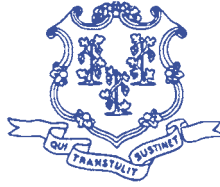


STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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Action Guide for Boaters

Clean Boating in Connecticut





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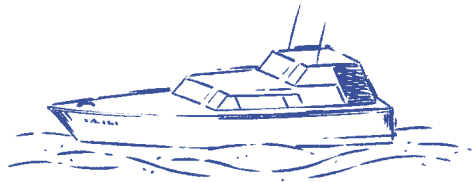
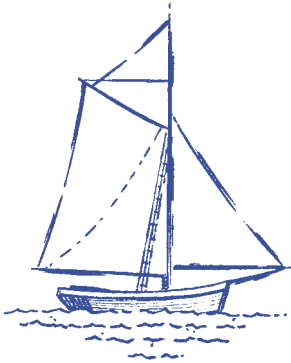
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Action Guide for Boaters

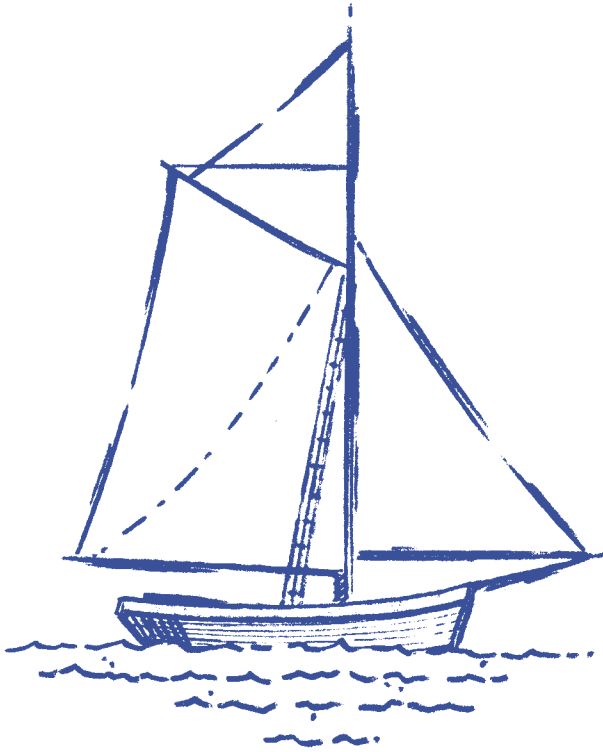
Clean Boating in Connecticut



J.H. Torrance Downes



Funded by the Long Island Sound License Plate Program.
Connecticut Department of Environmental Protection



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Welcome Aboard

Connecticut waters, whose historic rivers, harbors and bays flow into Long Island Sound, provide boaters with a beautiful resource in which to recreate. Indeed, Connecticut's waters, including Long Island Sound, are getting cleaner, but there always is more everyone can do.

Of course boaters contribute only a small portion of the overall pollution entering our waters, but contamination often concentrates near sensitive shoreline areas and in confined bays – many of the same places that are popular for boating, swimming, and shellfishing. Boaters can make a difference. Care must be taken to prevent pollution during cleaning, sanding, painting, fueling and motoring, and in handling boat sewage, hazardous materials and trash.

In an effort to preserve and protect our valuable resources, we encourage you to become a "Clean Boater." Clean Boaters keep fuel, sewage, plastics, trash, spent fishing line, and invasive species out of the boating environment, clean their boats responsibly, and dispose of all wastes properly. Following the important steps in this action guide can minimize the environmental impacts of boating.

The Clean Boater Program is part of a larger effort to clean up our state's waters. The CT DEP is working to improve sewage treatment, restore wetland habitats, monitor industrial discharges, and reduce non-point sources of pollution. The voluntary Connecticut Clean Marina Program certifies marinas, boatyards, and yacht clubs that operate under very high environmental standards. Clean Marinas and their customers work together to keep potential pollutants out of the waters. The small, extra efforts necessary to practice clean boating and good environmental stewardship benefit the environment, your family's health and safety and the future of recreational boating.

The National Clean Boating Campaign says: "Boating is good clean fun. Let's keep it that way!" (National Clean Boating Council)

Thank you for making the Sound
choice to keep Connecticut's waterways clean.

Funding provided by the Long Island Sound Fund administered by the CT DEP, through the sale of Long Island Sound license plates and contributions.

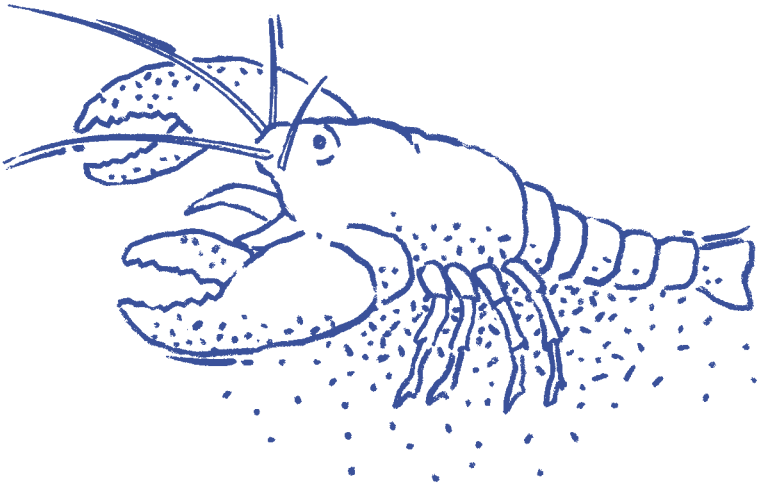


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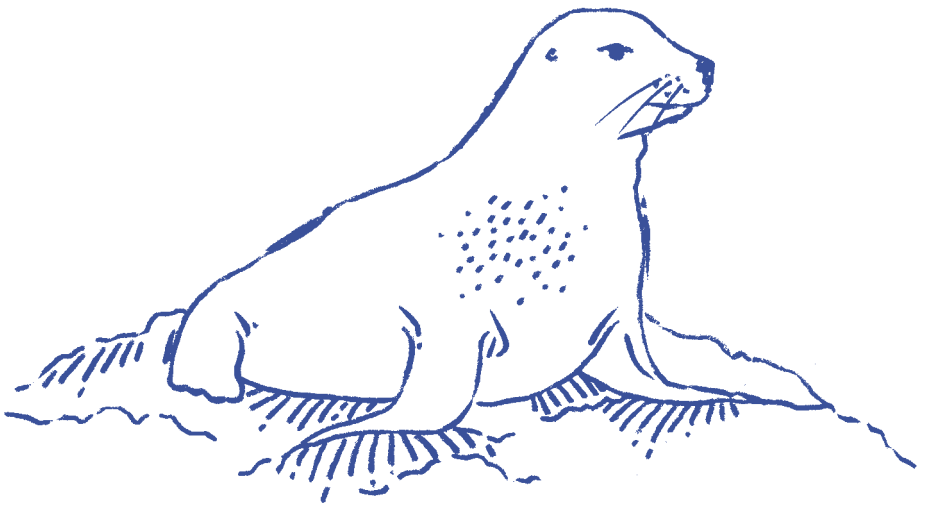
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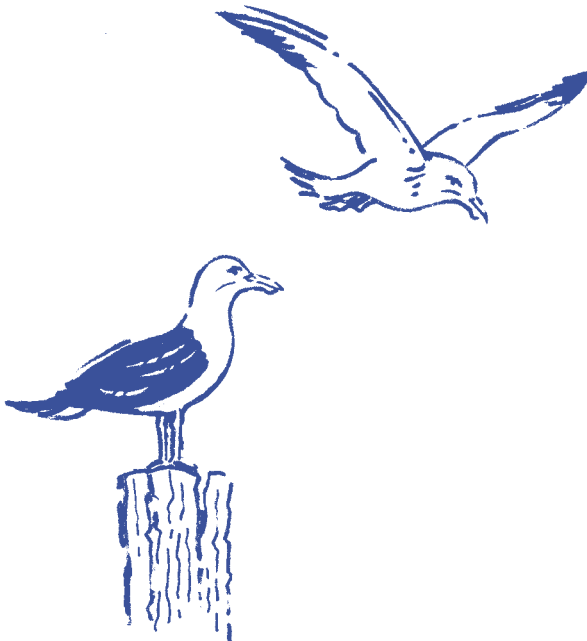
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– The Clean Boater Pledge –

I pledge to be a Clean Boater and to make the Sound choice to keep Connecticut's waterways clean. I pledge to keep fuel, sewage, plastics, trash, spent fishing line, and invasive species out of the water, to clean my boat responsibly, and to dispose of all wastes properly.



Long Island Sound Needs Your Help Now

FACT: Long Island Sound (LIS) is a valuable natural resource. It provides us with food, jobs, recreation, and beauty. It provides unique habitat for fish, birds, and wildlife. LIS also supports precious wetlands, which improve water quality and provide food and habitat. Like other major water bodies along the East Coast, Long Island Sound can only take so much. Pollutants enter the Sound from various sources. Unfortunately, some common boating practices threaten to pollute our cherished Sound.

How Do Pollutants Enter Long Island Sound?

- Polluted Runoff
- Industry
- Sewage
- Private Residences in the LIS Watershed
- Commercial and Recreational Boating Activities

What Do Pollutants Do?

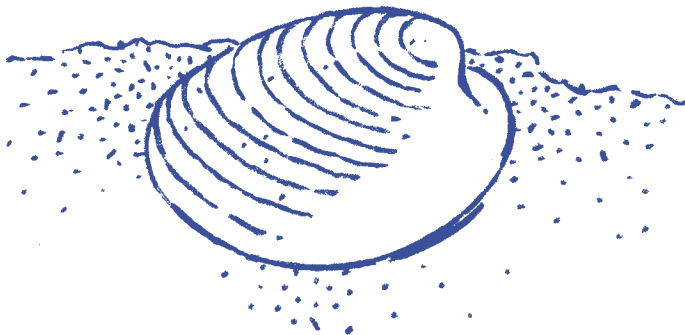
- Degrade the environment
- Affect water quality and marine life
- Pose potential health risks to those who consume effected seafood

Boaters Can Make a Difference

The cumulative impact of the approximately 165,000 recreational boats on LIS can be considerable. This guide contains many suggestions and practical steps that will enable you to reduce your impact on the marine environment. Protecting our environment requires proper stewardship. If we all act now, we can restore, protect, and preserve a vital part of our environment for ourselves and future generations to enjoy. So please participate in keeping Long Island Sound clean!

Tips for Clean Boating on Long Island Sound

- ✓ Perform maintenance work away from the water and use drop cloths and vacuum sanders to keep paint, debris, and cleaners out of the water.
- ✓ Share leftover paint and varnish with other boaters; encourage them to do the same.
- ✓ Recycle your oil, oil filters, antifreeze, engine batteries and zincs.
- ✓ Dispose of hazardous wastes at designated facilities.
- ✓ Minimize your use of harmful chemicals with safe substitutes whenever possible. For a list of alternatives see page 13.
- ✓ Prevent spills by fueling slowly and carefully. Don't "top off" or overfill your fuel tank. Use absorbent materials to catch drips.
- ✓ Use pumpouts or dump stations to properly dispose of boat sewage.
- ✓ Recycle non-hazardous wastes like aluminum, plastics, newspapers, cardboard, etc. and bring trash back to shore.
- ✓ Protect sensitive habitats by proceeding slowly in shallow water to minimize erosion from wakes and avoiding contact with underwater vegetation.
- ✓ Remove all vegetation from your boat and trailer.



Washing the Topsides of Your Boat

FACT: *Products used to clean boats often contain harmful ingredients. Often chlorine, phosphates and ammonia are used to wash decks and hulls of boats. These products can damage human and fish tissue.*

Try “Green” Products for Your Cleaning Needs

There are “green” alternatives to these and other harsh chemicals, that is, products that are less harmful to you or the environment. Baking soda, vinegar and lemon juice are far less harmful than bleaches, scouring powders, or detergents. Try these safer non-toxic cleaning alternatives:

Traditional Product	Try this Alternative
Bleach	Borax or hydrogen peroxide
Detergent or Soap	Non-toxic, biodegradable soap with elbow grease
Scouring Powders	Baking soda
Floor Cleaner	One cup white vinegar in two gallons of water
Window Cleaner	One capful of vinegar in one-quart warm water
General Cleaner	Bicarbonate of soda and vinegar, or lemon juice combined with borax paste
Head Cleaner	Add baking soda and use an over the counter product with natural enzymes
Shower Cleaner	Wet surface, sprinkle on baking soda, rub surface with scouring cloth
Aluminum Cleaner	Two tablespoons cream of tartar to one-quart hot water

<i>Traditional Product</i>	<i>Try this Alternative</i>
Brass Cleaner	Worcestershire sauce or paste of equal parts salt, vinegar and water
Copper Cleaner	Lemon juice and salt
Chrome Cleaner/ Polish	Apple cider vinegar to clean and baby oil to polish
Fiberglass Stain Remover	Baking soda paste
Drain Opener	Disassemble or use plumber's snake; don't use harmful substances in a thru-hull drain; flush weekly with boiling water
Mildew Remover	Paste using equal parts lemon juice and salt, or vinegar and salt
Wood Polish	Three parts olive oil to one part vinegar; almond or olive oil (interior unvarnished wood only)
Hand Cleaner	Baby oil or margarine, then clean with soap and water

For more "green" cleaning alternatives go to:
www.coastal.ca.gov/ccbn/toolkit/marina-toolkit.pdf and
www.coastal.ca.gov/ccbn/lesstoxic-cleaning.pdf

Tips *for Washing the Topsides of Your Boat*

- ✓ Purchase the least toxic product available to do the job.
- ✓ When cleaning try water and a little elbow grease first.
- ✓ Look for the words "phosphate-free", "biodegradable", "environmentally friendly", or "green" on the product label.
- ✓ Try not to use products that say "poison" or have "danger" warnings.
- ✓ Request biodegradable and non-toxic boat maintenance products from your marina or marine supply store.



Boat Hull Maintenance

FACT: *Sanding and scraping your boat can release noxious paint into the air and water. Dust particles can irritate your lungs and eyes and can also affect the health and reproduction systems of fish, birds, crabs and other marine life. Antifouling bottom paints are often harmful to the marine environment. Once in the water, the biocides in the paint can affect the growth or health of other organisms.*

Sanding and Scraping

Contain your paint and topside varnish particles as much as possible and always use a tarp to capture these particles. Vacuum sanders work great to contain particles. Wear a dust mask to shield yourself from breathing in the dust particles.

Antifouling Paint

Most antifouling paint contains elemental copper that kills organisms attempting to attach to a painted surface. By design, antifouling paints are toxic to marine life and can be absorbed by edible fish and shellfish. Antifouling paint chips left on the ground or driveway can be transported into the water by storm water runoff. The toxicants in antifouling paint, which are released over time, especially during cleaning, can be passed up the food chain from mussels and worms to fish, birds and humans. Not only is this harmful to marine life, but it may also increase the marinas' disposal cost when the marina basin is dredged.

Use of tributyltin (TBT) based paint on vessels less than 25 meters (~82 feet) is prohibited by federal law, unless the hull is aluminum. TBT-based paint may be used on the outboard motor or lower drive unit of a vessel that is less than 25 meters long.

Which Kind of Antifouling Paint Should I Use?

There are many products available, but basically, antifouling paints fall into three categories: ablative paints, leaching paints, and non-toxic coatings. Which one you choose depends on how you use your boat.

Ablative and copolymer paints are partially water soluble, which means that water wears down the surface of the coating like a bar of soap, exposing fresh antifouling paint. Since the paint wears off with use, maintenance time is reduced when it comes time to reapply paint. Copolymer ablative paints are excellent choices for trailered boats because the biocide in these paints is impervious to air, so the paint doesn't lose effectiveness when boats are hauled and re-launched. Some ablative paints can last two seasons.

Ablative paints should never be cleaned under water. It not only shortens the life span of the paint, but most importantly, it is bad for the environment. So if you plan to clean your boat while it is in the water, do not use an ablative paint.

Leaching antifouling paints release biocides over time, and while they can be considered either hard or soft, the hard leaching paint is most common. Once the biocide has leached out, a film of paint will remain on the bottom of the boat so that more rigorous sanding is required to prevent paint build up. If you choose light sanding instead, the resulting build up will need to be blasted or stripped off periodically. These paints tend to oxidize in air, which means that unless you sand the bottom before re-launching, the remaining copper will not release once it is back in the water. Hard bottom paints are the paint of choice if you plan to clean the bottom of your boat underwater.

NOTE: While many leaching paints have more copper than ablative paint, the impact to the aquatic environment over time is about the same.

Non-toxic alternatives, those that do not include chemical biocides, include silicone, polyurethane, and non-metallic epoxy paints. Companies are moving toward the broad introduction of non-toxic slick paints. Some products are reported to actually

increase boat speeds by as much as 10%. Although these are expensive paints, the paint job may last 3 years or more.

Talk to your retailer or marina about the way you use your boat to get help in selecting the proper paint. You may need to remove old paint or use a tie coat primer when switching bottom paints, as they may not be compatible.

Underwater Hull Cleaning

Your marina may not allow you to clean your boat bottom that is painted with toxic antifouling paint. Consider hauling your boat to clean it.

If your marina does allow underwater hull cleaning, please proceed with caution:

- DO NOT clean boat bottoms painted with ablative paints.
- Ask your marina operator if there are any specific guidelines you need to follow while cleaning your boat bottom.
- Use only soft material (sponges, not brushes!) to clean growth off the hull.
- Use stainless steel pads and/or brushes only on UNPAINTED surfaces.
- Stop cleaning in the water if colored plumes of paint appear in the water.
- Do not paint zincs. When replacing zinc anodes, bring them ashore for recycling.
- Hire a professional diver and tell them you expect them to minimize pollution.

Tips *for Boat Hull Maintenance*

- ✓ Always sand and scrape on shore, away from the water and preferably in a dedicated work area.
- ✓ Lay tarps under your work area to catch loose particles.
- ✓ Use a vacuum or dust-free sander. Many marinas rent them for a small fee.
- ✓ Dispose of scrapings and dust particles at a household hazardous waste facility in your town or check with your marine professional.

- ✓ Share left over paint. Dispose of oil-based paints/solvents as hazardous waste. Cans of water-based paint may be opened until dry and disposed with regular trash.
- ✓ Wait 60 days after a new application of hard bottom paint before cleaning.
- ✓ Regular use of your boat is one of the best ways to clean the bottom.
- ✓ Avoid an abrasive cleaning process by cleaning more frequently.
- ✓ Use a carpet, sponge, or other soft material to gently clean the hull.
- ✓ Have a qualified hull cleaner do the work.
- ✓ Be knowledgeable about your antifouling paint. Ask your yard manager to provide a written statement describing the name and type of paint used, health and safety warnings, maintenance requirements and date applied. Keep a record of this same info if you paint your own hull.



Maintaining Teak

FACT: *Teak has been used in shipbuilding for thousands of years because it doesn't rot, it's more dimensionally stable than most woods, and it requires minimal care. However, traditional methods for cleaning teak use caustic chemicals which may be harmful to you and the environment.*

Treating Teak

The best thing you can do for your teak decks is to treat them gently. All you need to do is rinse them occasionally with fresh water to remove dirt and avoid wear and tear from particles under foot.

Scrub teak decks gently, prior to spring commissioning, with oil based soap and water, using a non-bristle plastic scrubber. Soaps don't give teak that "freshly-sanded" look you get with stronger cleaners. They do clean the teak, but will leave it gray. However, soaps are much less damaging to the wood and seam compound. Some soaps work well in saltwater and others don't, so purchase a small quantity and try it out first.

Replenish the Natural Oils in the Teak

The natural oils in teak do dry out and require occasional replenishing. Most teak oils won't harm the wood but solvents in them can, over time, damage seam compounds. Therefore, don't use teak oil on decks unnecessarily.

Avoid Abrasive Materials

Use caution with abrasive treatments as they may considerably shorten the life of the teak.

Don't Use Caustic/Acid Cleaners

Well-meaning owners have traditionally washed teak decks with powerful chemicals, and then slathered them with teak oils at frequent intervals. This can destroy your deck!

Many cleaners or cleaner/brightener systems can be damaging to teak, particularly if you scrub with the grain of the wood, using

a stiff bristle brush. These chemicals are harmful to humans and the environment.

If you do use the two-part caustic/acid cleaners and bleaches, reduce the “burning away” of your teak by diluting the chemicals with water. Test small sections with various dilutions, choosing the weakest solution that achieves the look you want. These products should only be used on land. Always remember to wear gloves, even if you dilute the chemicals.

There is no teak cleaner that will both effortlessly and harmlessly return badly weathered teak to the pristine look of just sanded wood. Getting that look will take a lot of elbow grease, and cause wear and tear on the wood. If you try to maintain the “just sanded” look by using chemical cleaners, or even a milder detergent and a bristle brush, the softer portions of the teak grain will gradually erode. This will leave a ridged surface that attracts dirt and is more susceptible to mildew.

Preserving Teak Trim

Exterior teak trim requires different kinds of maintenance than do teak decks, but the cautions already mentioned still apply. Particularly relevant is the warning about eroding the wood with chemical cleaners. If you want the exterior teak trim to look as though it’s just been cleaned and sanded, you’re going to have to clean and sand it — there is no miracle teak finish.

Exterior teak trim may be varnished to protect it. A varnished finish actually holds up better and offers more protection than an oiled finish. Some boaters like the convenience of using a polyurethane finish as a substitute to varnish. Occasional sanding and a new coat of either varnish or polyurethane will be necessary, as needed.

Tips *for Maintaining Teak*

- ✓ To give your teak deck a light and slightly bleached look, scrub with saltwater and let the sun bleach it. With this easy, natural method you won’t worry so much about the inescapable graying process of oxidation. Or you can use mild powder soap and scrub with bronze wool. You’ll also find it’s less costly, less time consuming, non-marring, better for the environment, and better for the teak.

Engine, Battery Maintenance and Fueling

FACT: According to the EPA, as much as 30% of the fuel and oil contained in a standard two-stroke outboard engine may be discharged unburned into the air along with the exhaust. Some amount enters the water. Hydrocarbons and other fuel components cause environmental concerns.

The batteries in your boat contain chemicals such as sulfuric acid and lead that can leach into the ground if improperly stored for the season.

Reducing Pollution from Engines

Thanks to the Clean Air Act of 1990 and a regulation passed by the EPA in 1996, marine engine manufacturers must reduce engine hydrocarbon (HC) and nitrogen oxide (NOx) emissions in outboard and PWC engines 75% by 2006. Engines that meet or exceed these requirements are in the market place today.

There are two types of outboard engines that greatly reduce the emissions and unburned fuel. The direct fuel injection (DFI) two-stroke, sprays the fuel into the combustion chamber after the exhaust port closes. The four-stroke utilizes valves to control the timing of fuel and exhaust flows. These technologies result in greatly improved fuel economy, smoother combustion, reduced noise, improved idle and lower emissions.

Fueling

Petroleum-based fuel is no different from other hazardous materials. The most effective way to minimize its harmful effects on the environment is to reduce consumption and prevent spills.

Fuel spills during refueling are common. Most fuel docks don't have automatic shut-off valves to prevent topping off. When the fuel expands in the vessel's tanks due to heating, overfilling can cause fuel to escape out the vents. Be careful! Fuel spills are harmful to marine life as well as to boats. Exposing hulls to fuel spills deteriorates the finish.

Ways to Reduce Your Consumption of Fuel

- Keep the engine tuned. Proper ignition timing and clean spark plugs assure better mileage. Inspect the carburetor for proper float level, correct jetting, and smooth choke operation. Check the fuel and oil filters regularly. If your boat uses alcohol-based fuel, be aware that it may deteriorate fuel lines. Replace bad lines with USCG Type A alcohol-resistant fuel line hose.
- Balance your load. A balanced boat can plane quickly, reaching the desired speed with less plowing.
- Slow down. A wide-open throttle can increase fuel consumption by 50% or more over mid-range speeds. As you “trim” the boat, maintain RPMs at the level recommended by the manufacturer.
- Watch your weight. The lighter the boat and its load, the fewer horsepower are required to propel it, allowing greater fuel economy. Drain bilge and holding tanks properly before departure. Store unneeded supplies and equipment ashore.
- Avoid excess idling. Whenever you have to stop, turn off the ignition. A warm engine restarts easily without choking.
- Check your propeller. A damaged prop will waste fuel. Keep propeller blades clean; replace or repair props that have damaged blades. Adjust diameter and pitch for the level of activity you use most.
- Check the tides. Boating against the tide is like running against the wind—it takes more effort. Plan your route to make the tides and the currents work to your advantage.
- Keep your boat bottom clean. Growth on your hull causes underwater drag. Refer to the section on antifouling methods for your hull on page 15.
- Purchase a low emission, fuel-efficient engine.

Disposal of Engine Batteries

Recycle your spent lead-acid batteries at the point of purchase to ensure proper disposal. Your marina may have a battery collection area.

Under Connecticut’s “core charge” law (CGS Section 22a-256h), anyone buying a new engine battery can return the old battery within 30 days, and get a refund of \$5 for the “core charge” they

paid when they bought the new battery. In addition, retailers are required to take up to three batteries from anyone NOT buying a battery (in such cases there is no core charge refund, however). For more information on the “core charge” law, call the Waste Planning & Standards Division at 860-424-3365.

Other Batteries Onboard

About 50% of the mercury and 25% of the cadmium used in the U.S. goes into alkaline batteries that are not presently recyclable. When spent, those heavy metals find their way into landfills or incinerators where they can contaminate the air, soil and groundwater. Consider using rechargeable batteries with electric or solar rechargers for electronics onboard. The fewer batteries used, the fewer harmful metals go into the municipal and hazardous waste landfills.

Tips *for Engine, Battery Maintenance and Fueling*

- ✓ Keep your engine well tuned to prevent fuel and oil leaks.
- ✓ Check fuel lines for damage. Replace with alcohol resistant hoses.
- ✓ Refuel at the end of the day, listen to the filler pipe to anticipate when the tank is full and leave room for expansion. If you overfill your tank, you can actually lose fuel out of the overflow vents during the heat of the day.
- ✓ Fill up your tank to 90% capacity for winter storage to prevent deterioration of the stored fuel. This allows room for expansion of the fuel in spring when the outside temperature rises.
- ✓ Consult your local boat dealer regarding whether or not any fuel additive (stabilizers or dry gas) should be used with your engine. Buy only what you need.
- ✓ Use an absorbent pad or donut around the deck fill to catch backsplash and attach a temporary collection device to your hull to catch overflow from the tank vent. Pads can be air-dried and reused.
- ✓ Overfilling prevention devices are easy to install. They help you save money, reduce pollution, prevent fuel stains on the

hull, and prevent refueling fires. Another inexpensive option is a fuel catch cup that maybe installed underneath the fuel overflow vent.

- ✓ Ask your marina about a fuel/air separator. Installed in the vent line of the fuel tank, a fuel/air separator allows vapors to escape during refueling, keeping fuel where it belongs—in the tank.
- ✓ There are many lightweight, compact solar panels designed for boats that can be used to recharge batteries, run appliances, and heat water.
- ✓ Use rechargeable batteries for your Emergency Position Indicating Radio Beacons (EPIRB), flashlights, man-overboard lights, or other items onboard your boat. Check batteries for adequate capacities for use.



Reducing Hazardous Waste

FACT: Hazardous materials are found in many materials used to clean and operate your boat. However, using these products is often more out of habit than necessity. Lead, cadmium, zinc, and mercury are among the heavy metals found in the sediment of Long Island Sound and are difficult to remove. Fuel and used oil contain hydrocarbons and metals that are harmful to aquatic life.

About Hazardous Waste Disposal

The good news is that safer substitutes and methods do exist for many maintenance tasks. Refer to page 13 for Non-Toxic Cleaning Alternatives.

You need to know how to properly dispose of hazardous waste since it is illegal to improperly dispose of such wastes (e.g. into a dumpster or trash can, on the ground or in the water). Leftover oils and fluids, batteries, antifreeze, paints, varnishes, strippers, thinners, wood preservatives, turpentine, cleaners, pesticides and other chemicals should always be reused or properly disposed of at an appropriate facility.

To dispose of hazardous materials, the best thing to do is call your local public works department or recycling coordinator and ask them if they have or participate in a household hazardous waste collection program. If not, call the DEP's Waste Planning and Standards Division at (860) 424-3365 to see if other alternatives might be available. In addition, call your local recycling coordinator, mayor, or first selectman and encourage them to establish a program for your town.

You can get more information about household hazardous waste and collection schedules by visiting DEP's website: www.dep.state.ct.us/wst/hhw/hhw.htm

Oil

The discharge of small amounts of oil from the bilge, outboard motors, careless fueling habits and improper disposal of used oil may significantly contribute to pollution. A single quart of oil

can cover a water surface of an area equivalent to nearly three football fields.

When oil is spilled on the water, the sheen it produces often remains on the surface, where it affects fish, waterfowl, and other aquatic life. Hydrocarbons present in petroleum products and heavy metals in used oil are harmful even in small concentrations.

Oil (black water) discharge into the water is prohibited! The Oil Pollution Act of 1990 mandates that the U.S. Coast Guard impose a \$25,000 fine for dumping oil. This does not include clean-up costs. If your boat is over 26' you must display an "Oily Waste Discharge Placard." It's the law, and a good idea on any size boat. Placards are available at most marine suppliers.

Changing Your Oil

Prevent accidents before they happen. Before you change your oil, put down a drop cloth, a pan, or an oil absorbent product so if you have a spill, it won't be pumped overboard with the bilge water. Place a plastic bag over the filter before you take it off. It can prevent spills if the filter is accidentally dropped. Be sure that you dispose of the used oil properly. If you don't want to change your oil yourself, some marinas offer an oil-changing service. Make sure you choose one that recycles the used oil.

Recycle Your Oil

If all the oil used in the U.S. were recycled, we'd save 1.3 million barrels per day! Recycling 100 gallons of used oil saves 65 gallons of virgin oil. Re-refining used oil takes one-third the energy required to refine from crude.

To recycle your oil, put it in a clean re-sealable plastic container (a milk jug with a screw-on lid will do). Many of the milk jugs today have snap-on lids that easily pop off if the jug is knocked over, and are not appropriate for storing used oil. Boaters should also be advised to store their containers of used oil indoors, in a secure location away from foot traffic and other physical hazards that might cause a spill. Even better, they can put the container into a 5-gallon bucket or other "secondary containment" in case a leak does occur.

It's important not to mix it with other substances, such as antifreeze, solvents, or fuels to ensure that it is suitable for recycling.

Oil filters are also recyclable. Recover used oil from filters by puncturing the top, draining them into a container, and recycling the drained oil along with the oil from the engine. Ask your marina, community recycling center, or service station about recycling used filters.

Dealing with Spills

Use absorbent pads, pillows, or sheets to separate oil from the bilge water. If the pad is saturated with diesel or oil, check with your marina operator to find out if their trash hauler is approved to accept this material. If so, double-bag and discard in the trash. If not, bring to a local household hazardous waste collection site.

It is illegal to use dish detergent for cleaning up fuel or oil spills. Detergents appear to work effectively, but actually cause the oil to break up and sink into the water where it can harm marine organisms. Use absorbent pads instead.

A Note about Graywater

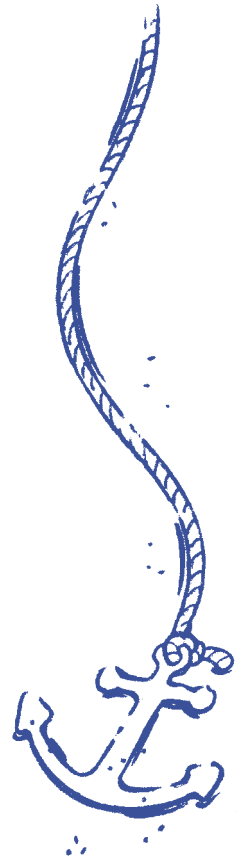
Graywater includes soaps and detergents from boat showers, dishwashing and laundry. These soaps, even those labeled as “biodegradable,” are substances that might be harmful to marine life.

Ways to Reduce Graywater

- Use shore side showers whenever available.
- Use low nitrogen and phosphorous detergents on-board.
- Use all soaps and cleaners sparingly.

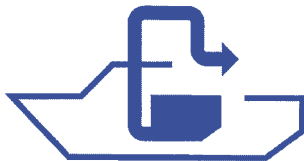
Tips *for Reducing Hazardous Waste*

- ✓ Properly winterizing your boat will reduce pollution and save you money. See your marina staff or refer to your owner's manual.
- ✓ If you use antifreeze, be sure to use non-toxic, propylene glycol. Be sure to use the orange-pink colored propylene antifreeze, which is non-toxic rather than the blue-green colored ethylene glycol, which is harmful to marine life.
- ✓ Use oil absorbent pads in the bilge. Consider installing a bilge oil filter or oil/water separator in your bilge discharge line.
- ✓ Install a manual override switch on the bilge pump.
- ✓ Keep some absorbent pillows, designed for use in bilges, on board. The best ones are made of natural feathers, are non-toxic to marine life, and can be reused.



Sewage Disposal

FACT: *The Clean Water Act prohibits discharge of untreated sewage into U.S. territorial waters. Generally, this is within three miles of the coast. Long Island Sound is within these territorial waters and therefore, no discharge of untreated sewage is permitted anywhere in LIS.*



Marine Sanitation Devices

All boats with an installed toilet are required to have a U.S. Coast Guard approved Marine Sanitation Device (MSD). Macerator pumps are **not** considered MSDs. There are three types of MSDs:

- Type I MSD – Treats sewage so that discharged effluent meets specified standards for bacteria content and contain no visible solids
- Type II MSD – Similar to Type I, but must meet a higher standard of sewage treatment
- Type III MSD – Retains untreated sewage in a holding tank for disposal at pumpout facilities or discharge beyond the U.S. Territorial Waters. Does not treat waste.

Untreated sewage threatens the Sound with nutrients and pathogens, particularly in sheltered areas like harbors and mooring sites not highly flushed by tide or current. Poor water quality closes shellfish beds and swimming areas for the protection of public health. Your actions control water quality. Be considerate of others and the environment. Best management practices dictate that treated sewage from your Type I or Type II MSD are never discharged dockside, near shellfish beds, at anchorages, or near swim areas.

No Discharge Areas

Connecticut and many other states are establishing “No Discharge Areas” (NDAs) with the approval of the Environmental Protection Agency (EPA). Within these areas, the discharge of sewage, treated or untreated is prohibited. In these areas, only a Type III system is legal. Currently the following “No Discharge Areas” have been established in local waters by the EPA:

- Connecticut: Pawcatuck River, Little Narragansett Bay, Stonington Harbor, Mystic Harbor and Fishers Island Sound extending to Eastern Point in Groton.
- New York: Huntington, Lloyd, Mamaroneck, and Port Jefferson Harbors, Hudson River, and Peconic Bay
- Rhode Island: All waters

Connecticut is applying to EPA to extend its NDAs. Please check www.dep.state.ct.us/olisp/NDA/ for updates.

It is illegal to discharge untreated sewage (empty your holding tank or use a direct discharge toilet) anywhere in Long Island Sound or Fisher’s Island Sound or into any of Connecticut’s waters. Boaters may discharge untreated waste three miles beyond a line drawn between Montauk Point, New York and Watch Hill, Rhode Island (the Territorial Sea Baseline). Unless the water body is designated as a “No Discharge Area,” boaters can discharge treated sewage from a Type I or Type II U.S. Coast Guard certified Marine Sanitation Device (MSD) in coastal waters. However, this practice is discouraged in near shore waters and areas of high boat concentrations and prohibited in designated No Discharge Areas.

Holding Tank Additives

Additives come in a variety of forms and chemical compositions. Harmful ingredients to avoid are formaldehyde, formalin, phenol derivatives, ammonia compounds, alcohol bases, or chlorine bleach. These chemicals can damage your toilet system and harm the environment. Frequent pumping and rinsing of your Type III system negates the need for these harmful chemicals.

Tips for Sewage Disposal

- ✓ Install a holding tank or portable toilet.
- ✓ Use pumpout stations and pumpout boats. For a list of pumpouts in Connecticut call the nearest marina or harbormaster or contact Connecticut's DEP Boating Division at (860) 434-8638 or www.dep.state.ct.us/olisp/cva/cva.htm
- ✓ Use marina restroom facilities when in port.
- ✓ Establish a regular maintenance schedule for your MSD, based on manufacturer's directions.
- ✓ Rinse your holding tank hoses with fresh water often to reduce odors.
- ✓ Avoid chemical additives in your holding tank. Use safer enzyme-based products.
- ✓ Use environmentally safe, fast dissolving toilet paper made especially for RVs and boats.
- ✓ Never dispose of fats, solvents, oils, emulsifiers, disinfectants, paints, poisons, phosphates, diapers or other similar products in your MSD.



Marine Debris, Trash, Garbage and Fish Waste

FACT: *Floating debris and solid objects may result in structural damage to boats or mechanical failures. Garbage in the water or washed up on the beach is unsightly and can injure or kill birds, fish, marine turtles and mammals.*

Trash is Dangerous

Trash tossed or blown overboard, absent-mindedly left on the beach or at dockside is more than just unsightly. Once in the water it has the potential to disable vessels. Something as trivial as a plastic baggie or piece of fishing line can be sucked into an intake or propeller, causing delays and costly repairs. Trash, especially plastic, can entrap or suffocate sea mammals, birds, and fish. Small pieces can look like food and be ingested causing harm or death to the animal that eats it.

Thousands of marine birds, fish, turtles and mammals die each year from entanglement in marine debris. Common items like six-pack rings, fishing line and strapping bands are mistaken for food. Numerous species ingest plastic, which causes them to feel full and die of starvation or poisoning.

According to the U.S. Coast Guard, recreational boaters dispose of approximately 422,000 tons of domestic trash and garbage into U.S. waters yearly. This amounts to an average of more than one pound of trash and garbage each time a boater goes out on a boat.

What's the Law?

ANNEX V of MARPOL, the International Treaty was designed to reduce the amount of ship-generated trash and garbage dumped into the ocean:

- Prohibits the disposal of all plastics from vessels in the ocean and navigable waters
- Restricts the disposal of most other types of refuse materials, depending on distance from shore

- Requires ports to provide adequate disposal facilities.

The U.S. Coast Guard requires vessels 26' and over to prominently display a MARPOL placard to notify all passengers and crew of Annex V discharge rules and penalties. Vessels 40' and over must display the placard and prepare a written waste management plan. For more information contact the U.S. Coast Guard.

Be advised that littering on the water is a violation of the Connecticut General Statutes, Section 22a-250 and is subject to fines up to \$219 per occurrence.

Tips *for Marine Debris, Trash, Garbage and Fish Waste*

- ✓ Keep trash from blowing overboard.
- ✓ Designate a covered bin for trash.
- ✓ Discard fish waste offshore unless there are length limits for the type of fish caught.
- ✓ If cleaning fish at a marina, use a designated area.
- ✓ Freeze and reuse fish scraps as chum or bait.
- ✓ Take particular care to properly dispose of nylon fishing line. Dispose of fishing line at your local tackle shop.
- ✓ Buy food in bulk to avoid excess packaging.
- ✓ Store food in reusable containers.
- ✓ Buy products with minimal or recyclable packaging.
- ✓ Carry out what you carry in.
- ✓ Never discard cigarette butts into the water, the filters don't disintegrate.
- ✓ Discard trash at a dumpster at the marina or take it home.

Reduce and Recycle

FACT: Remember recycling extends the life of landfills, pollutes less than incineration, saves you money, and saves natural resources energy.

Reduce

The best way to reduce your waste stream is to use less from the start. When you buy products with minimal packaging, you reduce the amount of waste and harmful chemicals used in the manufacturing process. Choices you make at the point of purchase can affect a reduction at the point of manufacture.

Recycle

We all know that recycling is economically and environmentally smart. Plus, by recycling, we could prevent thousands of pounds of debris from polluting the ocean and coastal areas. When boating, bring your recyclables ashore to recycle at home or at a marina. Encourage your marina to recycle. Please recycle cans, glass, plastic, bottles, newspaper, cardboard, antifreeze, oil filters and oil. Recycle spent lead acid batteries and other batteries where you buy them and bring monofilament fishing line to tackle shops for recycling.

Tips to Reduce and Recycle

- ✓ Choose brands with the least packaging.
- ✓ Purchase quality items – a few pennies more now saves costs on replacement and repair later.
- ✓ Think *repair* rather than *replace*.
- ✓ Know what is recyclable locally and buy accordingly.
- ✓ Buy foods in bulk to avoid excess packaging.
- ✓ Let store managers know you support brands that are sensitive to source reduction.
- ✓ Use a reusable boat cover rather than shrink-wrap to protect your boat in the winter. If you do a shrink-wrap, recycle the shrink-wrap in the spring.

Sensitive Habitats

FACT: Long Island Sound provides invaluable habitats for many different species of birds, mammals, fish, and shellfish. It is home to lobsters and clams, herring and striped bass, eagles and terns, harbor seals and more. Rocky shores, salt marshes, mud flats, and eelgrass beds provide important nursery areas, feeding grounds, and refuges from predators. The health of these habitats depends on water quality.

Impacts from Boating

These habitats are particularly sensitive to impacts from boating-related activities. Boat propellers and wakes can destroy eelgrass and can cause bank erosion. Hazardous materials, sewage, and marine debris affect water quality and degrade habitat. The resulting pollution can close shellfish beds, cause algal blooms and fish kills, and trap, injure or kill wildlife. Choices you make as a boater will affect the water quality of LIS and its impact on marine life.

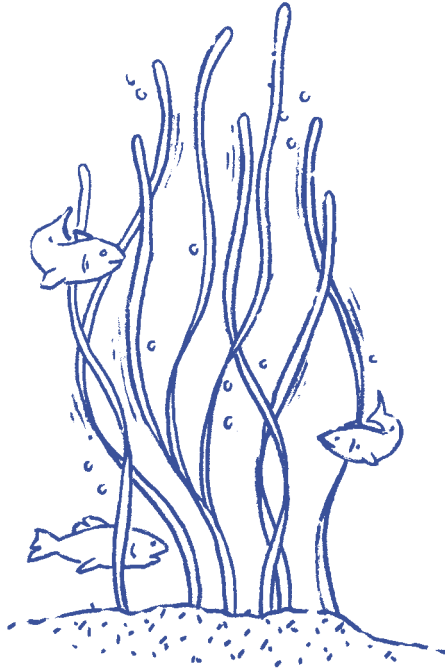
Submerged Aquatic Vegetation

Submerged aquatic vegetation (SAV) are rooted, vascular plants that grow completely underwater in coastal waters and inland lakes. SAV represent some of the most productive shallow water habitat on the globe. Barnacles, scallops, mussels, and eggs of aquatic organisms attach to the surface of the plants' leaves and stems. Beds of these plants serve as nursery areas for commercially important finfish and shellfish and provide shelter for juvenile scallops, fish and animals because their dense underwater canopy provides refuge from predators.

Motorboat propellers crossing through beds can "mow" the vegetation or leave long scars that can persist for years or decades. Turbulence from propeller wash and vessel wakes can dislodge sediments, break off leaves, or uproot plants. Also, mooring chains swinging around their mooring blocks can denude circular patches within a bed.

Eelgrass

Eelgrass beds are among the most productive marine habitats, providing shelter and feeding opportunities for a wide variety of fish and invertebrates including winter flounder, bluefish, striped bass and blue crabs. Eelgrass abundance has declined dramatically in the past 20-30 years, most likely from a combination of natural and human factors (disease, water clarity, nutrient loading, mechanical damage and water temperature).



Tips for Sensitive Habitats

- ✓ Proceed slowly in shallow areas and minimize your wake to avoid erosion.
- ✓ Do not disturb wildlife.
- ✓ Avoid contact with submerged aquatic vegetation. (SAV)
- ✓ Use marked navigational channels and obey speed limits.
- ✓ Avoid anchoring in eelgrass beds.
- ✓ Buoy your mooring lines to keep them from scraping away SAVs on the bottom.

Preventing the Spread of Aquatic Nuisance Species

FACT: *Aquatic nuisance species (ANS) are invading coastal and inland waters. More than 50 non-native and 40 species that may not be native have been identified in Long Island Sound. Boaters can unwittingly play a role in spreading ANS. These pests can increase dramatically under the right conditions, degrading habitat and community structure by causing localized extinction of rare and endangered species or displacing native species. They can also choke waterways, thereby impacting navigation and recreation.*

Beware of Transporting Plants and Animals

Recreational boating is one way that aquatic plants and animals are moved from water body to water body, thus introducing ANS. Many ANS species of plants and animals have larval forms that are difficult to see with the human eye. Once established ANS in Long Island Sound are nearly impossible to remove. In freshwater systems, there are mechanisms that can curtail growth, but the options are all expensive. ANS can be transported when caught in propellers, intakes, attached to boat hulls, entangled in boat trailers or when live bait from another area is released into a water body.

It is now illegal in Connecticut to transport aquatic plants on vessels or trailers on inland waters. Violation of the law carries a fine of up to \$100 per plant and requires a court appearance. Care should also be exercised in transporting ANS within Long Island Sound because localized environmental problems can arise.

Tips *for Preventing the Spread of Aquatic Nuisance Species*

- ✓ Avoid chopping vegetation with your boat's propeller.
- ✓ Remove all visible aquatic vegetation from boat, propeller, anchor, lines and trailer before leaving any body of water. Discard vegetation in trash away from water and the shore.

- ✓ Drain live wells and bait buckets into suitable containers before leaving the site.
- ✓ Do not throw purchased bait or vegetative packing material from bait into the water when you are done fishing. Small organisms can live on the plant material used to keep the bait moist.
- ✓ Dry out your boat for at least two days (five is best) or wash down hull with tap water on land before launching again.
- ✓ Flush engine cooling system, bilge areas and live wells with tap water.



STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean all recreational equipment.

www.ProtectYourWaters.net



Respect Wildlife

FACT: *Long Island Sound is home to seals, sea turtles and migrating shore birds and is occasionally visited by dolphins, porpoises and whales. It is important to enjoy wildlife from a distance. It is illegal to touch, feed, disturb, harass, capture or kill marine mammals and sea turtles. Many of these species are vulnerable to crippling or fatal collisions with powerboats and interaction with fishing gear.*

How Close is Too Close?

Generally it's best to stay at least 100 yards away from seabirds and marine mammals. If you can see a nest, you're probably too close. If disturbed, an adult may abandon their nest leaving young birds vulnerable to predators or eggs from being kept warm. When eagles detect humans in their space, they fly away from their nests. Their territorial range can be as much as 3,000 feet from the nest location. Please avoid seabird-nesting areas from April to mid-August.

Long Island Sound is home to four species of seals including Harbor, Harp, Hooded and Grey Seals. Seals have their pups beginning mid-May through June. If seals are on a ledge and appear restless, or they plunge into the water, leaving their pups behind, it means you are too close. If disturbed, they may leave their young to die. Harassment of a marine mammal is a federal offense. It is best to observe them from a distance.

Loggerhead and Leatherback Sea Turtles may appear in eastern portions of Long Island Sound during the summer. They range in size from three to six feet and can weigh from 300 to 1,600 pounds. These animals move slowly through the water and many of these gentle giants are injured by boat propellers or become entangled in marine debris. Please use caution if you see them.

Boaters are urged to maintain a sharp lookout and use caution around Northern Right Whales. The population of Northern Right Whales is severely depleted and it is illegal to approach within 500 yards of these animals.

All sightings of a right whale should be called in to the National

Marine Fisheries Service (NMFS) Sighting Advisory at 508-495-2264 or 978-585-8473 (Beeper). When possible, have the date and location of the sighting ready when calling.

Marine Mammal Stranding

When marine mammals come ashore and become helpless it is called a stranding. A stranding is usually indicative that the animal is ill, weak or lost. It is illegal to touch a stranded animal. Contact the Mystic Aquarium at (860) 572-5955 to report marine mammal strandings along the Connecticut coast.

Tips *for Respecting Wildlife*

- ✓ Keep your pets away from nesting areas. A dog or cat can destroy bird eggs in a few seconds.
- ✓ When approaching nesting birds, remain quiet and talk in low whispers. Move slowly and deliberately.
- ✓ Do not point – this movement startles wild animals.
- ✓ Nests are difficult to see. When on beaches and dunes, watch where you step.
- ✓ Osprey young will often actively defend nesting sites in August and September; move far enough away so they may calm down.
- ✓ Don't leave food scraps for animals – it's harmful to their natural survival.



Safety and Reference

Prepare Ahead!

- Check weather and water conditions
- Understand the rules of the road
- Know how to operate your boat

Know This about Large Vessels

- They use the harbor's dredged channel
- They are constrained by their draft and have the right of way
- They probably cannot see you—beware
- They lose visual contact with small vessels as they get closer

For Your Safety with Large Vessels

- Do not cross between a tug and a barge!
- If you are unsure of a large vessels intentions, contact the vessel on VHF Channel 13
- Know your signals!

Safe Boating Education

- CONNECTICUT DEP BOATING DIVISION, 860-434-8638, offers courses on responsible boating. For a list of courses visit www.dep.state.ct.us/rec/boating/boatclass.asp
- THE COAST GUARD AUXILIARY, 202-267-1002, offers Boating Skills/Seamanship, Sailing/Seamanship, and Advanced Coastal Navigation classes. For information, visit www.cgaux1sr.org
- THE U.S. POWER SQUADRONS, 888-367-8777, offers safe boating and navigation courses. For information, visit www.usps.org
- THE U.S. COAST GUARD, 800-368-5647, distributes a pamphlet entitled Federal Requirements for Recreational Boaters. Call to request a copy. For information visit www.uscgboating.org

Reporting Spills

As a steward of Long Island Sound, please watch for and report all pollution spills – oil, fuel, sewage, hazardous materials, and marine debris. This applies to pollution from private or commercial boats, ships, bayside businesses, and industries. Also report pollution from storm drains and surface run-off emptying into the Sound.

To report all spills (oil, chemical, plastics, sewage, garbage, trash, and pollution) call the **National Response Center U.S. Coast Guard** toll-free at **800-424-8802** or **CT DEP Oil and Chemical Spill and Response Division** at **860-424-3338** or **860-424-3333**.

Thanks for reporting spills. It's good for the Sound and it's good for everyone who enjoys this valuable resource.

Helpful Contacts

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

- Office of Long Island Sound Programs 860-424-3034
- Boating Division 860-434-8638
- Law Enforcement Division
 - (24 hours) Emergency Communication 860-424-3333
 - Administration (Hartford) 860-424-3012
 - Marine District (Old Lyme) 860-434-0316
 - Eastern District (Marlborough) 860-295-9523
 - Western District (Harwinton) 860-485-0226
- Fisheries Division (Inland) 860-424-3474
(Marine) 860-434-6043
- DEP Store (Maps and Publications) 860-424-3555
- Parks and Recreation Division 860-424-3200
- Wildlife Division 860-424-3011
- Connecticut DEP Oil Recycling Information 860-424-3365 or toll free at 888-424-4193.

CONNECTICUT DEPARTMENT OF TRANSPORTATION

- Harbor/Harbormaster Information 860-443-3856

CONNECTICUT STATE POLICE

- Department Commissioner (Middletown) 860-685-8441

UNITED STATES COAST GUARD

- Customer Info Line 800-368-5647
- Station New London 860-442-4471
- Station New Haven 203-468-4400
- Station Eatons Neck (N.Y.) 631-261-6959
- USCG Sector LIS 203-468-4401

NATIONAL WEATHER SERVICE

- General Forecasts, Marine & Climate Information:
<http://www.nws.noaa.gov>

MYSTIC AQUARIUM (MAMMAL STRANDINGS)

- 860-572-5955, ext. 107

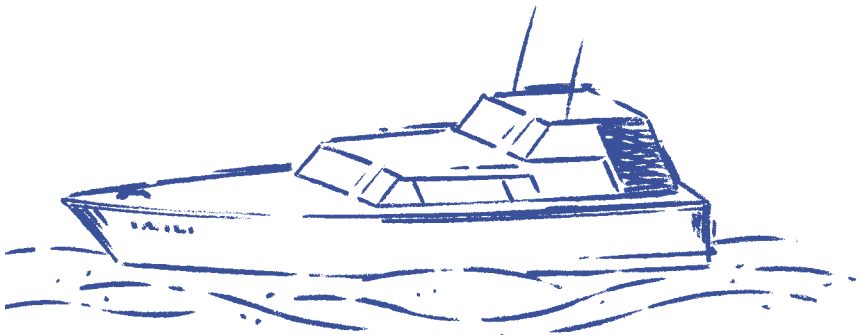
U.S. ARMY CORPS OF ENGINEERS

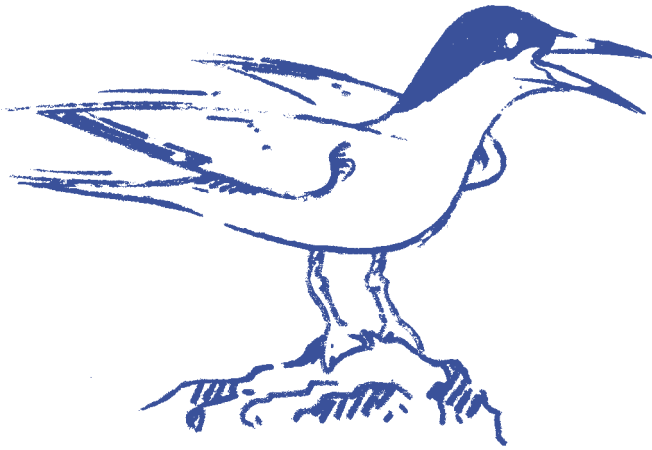
- NE District 978-318-8111

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION I

- 888-372-7341

In case of an on the water emergency: Contact the United States Coast Guard on VHF Radio Channel 16. If you must use a cell phone, call USCG Sector LIS 203-468-4401.







J.H. Torrance Downes



Funded by the Long Island Sound License Plate Program.
Connecticut Department of Environmental Protection

