

Recreational boating provides relaxation and enjoyment for thousands of local residents. With so many enthusiasts enjoying our shoreline, rivers and lakes, boat and personal watercraft owners play a major role in water quality along the coast. By understanding the potential impacts of boating practices, you can ensure that the waters we all depend on will not be damaged.

This chapter examines boating-related activities and what you can do to minimize possible harm to the environment. The following topics will be covered:

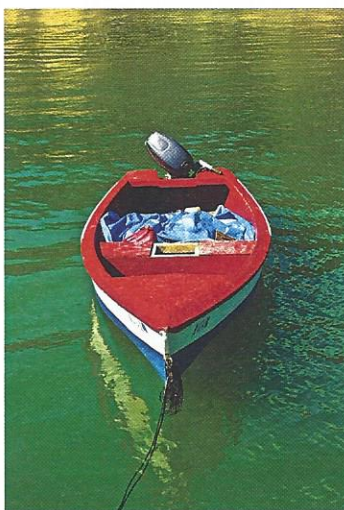
- Boat cleaning and maintenance.
- Spill prevention and waste disposal.
- Dock construction and maintenance.

By completing this chapter, you'll learn to identify, evaluate and reduce the pollution risks your boating practices may cause.

What are the Environmental Concerns?

Boating- and marine-related activities can have a profound effect on local environmental quality. While individual boats usually release only small amounts of pollutants, when multiplied by thousands of boaters, docks and marinas, these pollutants can cause measurable water quality problems in lakes, rivers and coastal waters.

Products used to wash boat hulls and decks often contain toxic ingredients such as chlorine, phosphates and ammonia. Likewise, wood preservatives, stains, antifouling paints and strippers are used regularly without regard to potential environmental hazards. Individuals often



Good boating practices safeguard water resources for all citizens

clean or repair their boats in driveways, streets and parking lots where there is no drainage control and contaminated discharge typically lead directly to local surface water bodies.

Discarded trash in the water is not only unsightly; it can kill and injure aquatic life. Federal law prohibits boats from discharging plastics, or garbage that contains plastics, into any waters. Nevertheless, this type of debris commonly finds its way into our coastal waters at alarming levels.

The physical alteration of shoreline, wetlands and aquatic habitat during the construction of a private dock can be considerable. If docks are improperly sited or built, there can be significant erosion problems as a result of lost or destroyed vegetation. In addition, the pilings and decking are often made of lumber that is treated with pesticides and other preservatives. While this wood material is largely safe if treated properly, it should still be handled and disposed of with caution.

Risk Assessment: Boat Cleaning & Maintenance

Use the table below to rate your risks related to the boat cleaning and maintenance practices you use. For each question, check your risk level in the right-hand column. Some choices may not be exactly like your situation, so choose the response that fits best.

Assessment - Boat & Dock Maintenance

	Low Risk	Medium Risk	High Risk	Your Risk
Cleaning products	I use only water to clean my hull and deck. I rinse the boat after every trip and use a lot of elbow grease instead of harsh cleansers.	I use only marine detergents or alternative cleaners to clean my hull and deck.	I use whatever cleaning agent is handy, regardless of whether it is meant for use in the marine environment. I never rinse my boat.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Cleaning location	I take my boat to a self-service car wash after each trip so my runoff will be collected and treated or recycled.	I pull my boat trailer into the yard when I wash it off so most of the runoff will percolate into the soil.	I wash my boat in the street or in my driveway where my runoff will likely find its way into a nearby surface water body.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Hull maintenance	I take my boat to a licensed boatyard when the hull needs painting or scraping.	I take on small or moderate painting and scraping jobs at my house. I use a tarp under the boat to catch debris and wear protective clothing. I use a containment bag and properly dispose of or recycle waste.	I never follow label instructions and take no precautions — even when recommended. I don't use drip pans or recycle left-over products.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Wood & trim maintenance	I use covers for my exposed wooden components. I enjoy the look of weathered wood and use only salt water to rinse away the dirt and grime.	I use wood cleaners and soaps sparingly, avoiding solvents and varnishes. If I must use a cleaner I apply with a sponge or soft cloth.	I frequently use harsh wood cleaners and varnishes. I also use steel wool to prepare the wood surface for application. I rinse my tools in the water after I finish.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Engine maintenance	I always keep my engine finely tuned. I use only cleaner-burning TC-W3 oil mixed to the correct ratio. I always capture and recycle my used oil.	I tune up my engine every couple of years. I use whatever oil is on sale, recycling when it's convenient.	I never tune up my engine. I use the cheapest oil available. I mix my oil to burn rich because I've been told that will make my engine last longer.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

Your goal is to lower your boat cleaning and maintenance risks and reduce potential harm to the environment. Review the sections below for the medium-and high-risk practices you identified. Use the recommendations to help you plan actions to reduce your risks.

Boat Cleaning and Maintenance

Most boat owners want a clean and healthy environment in which to enjoy the full recreational potential of our lake waters. Preventing pollution can be as simple as using good maintenance practices and less caustic or toxic products. Look over the topics below, and read those that will help you better understand your boating practices and habits.

Boat cleaning alternatives	
Instead of ...	Try this ...
Bleach	Borax or hydrogen peroxide
Detergent and soap	Vegetable- or citrus-based soaps, plenty of elbow grease
Scouring powder	Baking soda
Floor cleaner	1 cup white vinegar in 2 gallons water
Window cleaner	1 cup white vinegar in 1 quart warm water, rinse and squeegee
General cleanser	Baking soda and vinegar; lemon juice combined with borax paste
Head cleaner	Pour in baking soda and brush
Shower cleaner	Wet surface, sprinkle on baking soda. Scrub with scouring brush
Aluminum cleaner	2 tablespoons cream of tartar in 1 quart water
Brass cleaner	Worcestershire sauce or paste made with equal parts salt, vinegar and water; rinse thoroughly
Copper cleaner	Lemon juice and salt
Chrome cleaner/polish	Apple cider vinegar to clean, bay oil to polish
Fiberglass stain remover	Baking soda toothpaste
Drain opener	Use boiling water or plumber's snake or disassemble; toxic substances should not be used in through-hull drain
Mildew remover	Paste using equal parts of either lemon juice and salt or vinegar and salt.
Wood Polish	Almond or olive oil. (Interior wood only)

Washing the Hull and Deck

Many of the products that we use every day in our homes are perfectly safe in that environment. On our boats however, where cleaners can be discharged directly into the water without any treatment, the same products can be lethal to marine life.

Grease-cutting detergents, scouring powders and bleaches clean very well, but these products are toxic to marine organisms and threaten water quality.

Fortunately, there are many alternative products and practices designed specifically for boaters that are less harmful.

To lessen the impact of cleaning your boat, scrub and rinse the deck and hull with fresh water after every trip. Remember, the safest cleaning product available is good, old-fashioned elbow grease!

If fresh water won't do the job, then take advantage of alternative cleansers. Don't use products that contain ammonia, sodium, chlorinated solvents, petroleum distillates or lye.

Use these cleaning agents conservatively rather than dousing the deck with soap. Apply small amounts with a cloth and wipe it up rather than hosing it off after each application. When you need a hose, use a

squeeze nozzle that shuts off when released to conserve water and minimize runoff.

If you must clean your boat at home, park the boat in the yard so excess water will seep into the ground instead of running off your property into a stormdrain. Always think about where you are going to clean your boat. Is it wise to clean it off beside the boat ramp? How about in your driveway or the street? Don't forget that runoff in both cases will find its way directly into a nearby surface water body. If possible, park your trailer in the grass or other permeable area where excess water will have a chance to seep into the ground and be filtered by the soil.

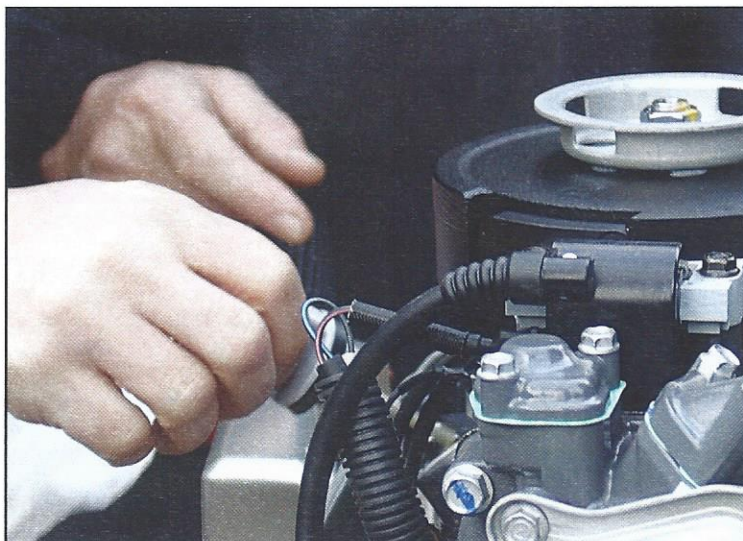
Sensible Boat Sanding and Painting

Sanding and painting can be messy tasks, and if certain precautions are not taken, these chores can also create an environmental mess. You may want to consider using a licensed boatyard or contractor to under-

take the types of repair that include paints, varnishes and epoxies. These commercial facilities are equipped to control air emissions while painting, collect and treat debris from hull cleaning, and recycle or properly dispose of all types of haz-

ardous wastes. In other words, they take the headache of repair away from you! If you are a die-hard do-it-yourselfer, or for small to moderate projects, there are several precautions you should take to keep toxics and debris out of coastal waters.

First, always plan for maintenance so that it's done all at once when your boat is out of the water. Save difficult jobs until the winter, when most of us haul boats out for at least a month or two.



Before you start sanding or painting, cover the area between the boat and the ground with a plastic sheet or tarp to catch debris. This simple practice will collect much or all of the fine particles that result from your maintenance practices. In addition, if you are painting your boat yourself, wear appropriate protective clothing such as a hat, gloves and safety glasses. Invest in a high-quality respirator, not a dust mask. If you can smell and taste a solvent, stop what you're doing and take a break.

Never sand in a heavy breeze when the particles could become airborne and inhaled or deposited directly into water. Use sanding equipment with a dust containment bag, sweeping up residual sanding dust and disposing of it in the trash.

Marine paints come in two basic forms: water-based and oil-based. Water-based paints are generally considered less dangerous than oil-based paints, which

contain cancer-causing solvents that, if inhaled, ingested, or absorbed through the skin, can affect your health.

When Painting Your Deck or Hull

- Buy only enough paint for the job. Mix your paint on land, avoiding spills and drips.
- Use pans or containment trays to catch drips and spills.
- Seal containers tightly when not in use and store

in a cool, dry location that is not accessible to children.

- Reuse paints, varnishes and solvents whenever possible. Toxic products should be disposed at a hazardous waste collection facility.
- Donate leftover paints to fellow boaters.

Exterior Wood and Trim

Wooden parts and gear have been part of boating for years. Even though many boats are now manufactured using aluminum or fiberglass, there are still companies

that routinely construct boats with wooden components.

To minimize the use and harmful impacts of varnishes, consider having covers made for exposed wooden parts such as teak railings or hatches. While the initial investment may seem costly, you will save money on routine wood refinishing. You can also feel good about supporting a local marine business and protecting the environment!

Many people love the look of bleached teak decks and trim. However, wood cleaners used to restore the bleached look are mostly acid-based products that are very hazardous to the aquatic environment. In addition, regular application of wood cleaners can wear away the grain and damage seam compounds. Here are some alternatives to bleaching wood:

- Allow wood to fade to gray. Rinse with fresh water occasionally to remove excess dirt and grime.
- Use teak cleaners and soaps sparingly, avoiding solvents or varnishes.
- If you oil your teak trim, minimize or eliminate caustic cleaners before applying the oil.
- If you must use cleaners or solvents, apply with a cloth or sponge rather than more abrasive steel or copper wool.

Engine Maintenance

Always keep your engine tuned up. Using only cleaner-burning TC-W3 oil. Capture and recycle any used oil.

Maintaining your outboard or inboard engine can pose some special problems, mostly due to the materials involved, such as oil, grease, transmission fluid and antifreeze. Oil can be a particular problem, since a single quart, when spilled, can pollute an area of up to 2 acres, equivalent to nearly three football fields of water surface.

Performing routine maintenance will improve boat and engine operation while protecting the environment. The basic rule to follow is keep your engine well-tuned. It will use fuel more efficiently, reduce fuel consumption and last longer. It will also discharge fewer pollutants into the water.

Tips for Routine Engine Maintenance – from “Your Boat and Your Bay” Chesapeake Bay Foundation 1999

- Follow the manufacturer’s recommended maintenance schedule.
- When changing your oil, wipe up spills immediately and be extremely careful to catch all used oil in a container for onshore recycling.
- For inboard engines, place a bilge “pillow” (an oil-absorbing sponge available at many marine stores) in your bilge to remove oil from your bilge water. Then the oil won’t be pumped over-board by your bilge pump.
- For outboards, use the premium TC-W3 oil recommended by your engine’s manufacturer. Premium TC-W3 oils contain more detergents and burn cleaner than the older Type TC-W2 oils.
- If your engine does not have oil injection of any sort, carefully measure the oil you mix with your gasoline. Remember that too much oil in the gasoline means inefficient burning. Too little oil can cause significant engine damage.
- Prepare engines properly for winter storage. Good care at the end of the season can keep your outboard running well. Consider using a good professional service to winterize your engine or learn to do the job yourself.
- Inspect your rubber fuel lines regularly. The alcohol content of unleaded fuels has a tendency to deteriorate fuel line hoses, sometimes in a matter of months. Should signs of deterioration be evident (dry, cracked, or soft and mushy spots) replace them immediately with any hose marked “USCHG type A.”
- Use enzyme-based bilge cleaners, which are nonpolluting and also very effective. Drain old antifreeze into a container for onshore recycling. When you recycle, be sure you don’t mix propylene glycol and ethylene glycol types of antifreeze. Where possible, use less toxic propylene glycol, rather than traditional ethylene glycol antifreeze. Make sure you check the manufacturer’s specifications to see if propylene glycol can be used in your engine. Consider installing an in-line fuel/air separator on each tank. These devices prevent fuel from escaping out the vent holes but let air in.

Assessment - Spill Prevention & Waste Disposal

Your goal is to lower your spill and waste risks and reduce potential harm to the environment. Review the sections below for the medium-and high-risk practices you identified. Use the recommendations to help you plan actions to reduce your risks.

Assessment - Spill Prevention & Waste Disposal

	Low Risk	Medium Risk	High Risk	Your Risk
Fueling	I always fill my gas tank at the local filling station, never refueling while on the water. I have a "whistle" installed in the line to warn me when my tank is getting full. I never leave the nozzle unattended.	I try not to overfill the gas tank, but when I do, I clean up spills using absorbent pads. I seldom use marina gas stations.	I always try to get as much gas in my boat as possible, whether I am at a marina or at my local station. When the gas comes shooting out my vent, I know I've got enough.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Bilge water	I maintain my engine very carefully, always checking hoses and connections for any sign of a leak. If I see an oil sheen in my bilge, I use a commercial pumpout service to clean it out.	When I see oil in my bilge, I stop the pump and use the absorbent pads I keep on board to soak it up. I dispose of these used pads at a local recycling center	If I notice an oily sheen in my bilge, I use the pump to get it overboard. I don't keep absorbent pads on board, but I do use a liquid detergent to eliminate oil in the bilge if I see any.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Head sewage	I never discharge any sewage into the water. I always use pumpout facilities, which are provided at many local marinas. I ensure that my MSD is functioning properly before each outing.	I only discharge treated sewage into coastal waters, and only when my holding tank is full. I use a pumpout station when it's convenient.	I discharge my sewage at the end of each outing before returning to the dock or ramp. I don't like using pumpout stations because they are costly and dirty.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Fish waste	I only clean fish at designated fish-cleaning stations, with trash cans and wastewater treatment. If a station is not around, I bag the waste and throw it away at home.		I always clean my fish at the boat ramp, disposing of the waste in the water.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

Large oil spills, such as the wreck of the Exxon Valdez in Alaska and the deep sea drilling rig explosion in the Gulf of Mexico, receive most of the public's attention. However, according to recent studies, these large spills account for only 10 percent of all the oil that ends up in the water each year. The other 90 percent comes from polluted urban runoff and other nonpoint sources, such as improperly disposed used oil, bilge water, outboard motors and careless fueling habits.

Likewise, disposal of waste is a serious issue. Human sewage discharged from boats can contain disease-causing organisms that harm marine animals and plants. Plastics and trash are often mistaken for food by marine life resulting in starvation or poisoning.

Fueling Your Boat

Most recreational boaters fuel their boats on the back of their trailers at a local gas station. Since there is no surface water under the boat and there are safeguards in place to minimize the impacts of small spills, the risk of environmental damage is minor.

In the water however, filling the fuel tank often means waiting for the gas to spurt out the overflow vent. It doesn't take a genius to figure out where that extra fuel is going.

Following a few simple steps will go a long way toward eliminating this common problem:

- Never leave the fuel nozzle unattended. While fueling your boat, never leave the hose unattended.
- Don't overfill your tank. Know your tank's capacity and learn to gauge the amount of fuel you need.
- Fill slowly. Many marine filling stations are not equipped with nozzles that automatically shut off with backpressure. By slowing down, you can prevent that

accidental spill and still top off your tanks.

- Keep absorbent pads handy when fueling. Wipe up any accidental spills immediately, whether they occur at the vent outlet or the nozzle. Dispose of the soiled rags properly by giving them to the marina operator or placing them in a sealed container.
- Consider installing an in-line fuel/air separator. The devices are cheap — about \$75 — and they prevent the fuel from escaping out the vent hole, while letting the air in.

Bilge Water

Nearly all boaters have encountered an oily sheen in their bilge water. Oil leaks from numerous lubricated parts of an engine and mixes with water entering the bilge.

How do we dispose of this polluted water?

The best advice involves prevention. As covered in the previous maintenance section, fix those small leaks that allow oil to drip into the bilge. Take a few minutes before you change the oil to ensure the proper capture and cleanup of all the fluids. Always keep an aluminum or plastic tray in the bilge as a containment device.

Once oil has seeped into the bilge, use oil-absorbent pads to capture the surface oil before pumping the water over. If too much is leaking to be contained by absorbent pads, consider the use of a bilge pumpout service. Check the phone book or contact a local marina for the service nearest you.



Under no circumstances should you ever add liquid detergents to bilge water. These chemicals only disperse the oil and can foul bilge pumps and absorbent pads.

Disposal of waste is a serious issue. Human sewage discharged from boats can contain disease-causing organisms that harm marine animals and plants.

Head Sewage

Probably no issue draws the attention of regulatory agencies and environmental groups to boaters more quickly than the illegal dumping of raw sewage. The untreated sewage discharge from a single weekend



boater can put the same amount of bacterial pollution into the water as does sewage from 10,000 people whose waste has passed through a municipal treatment facility.

Boaters should attempt to achieve zero discharge of all sewage into recreational waters. While on the boat, human waste should be contained in a U.S. Coast Guard-approved marine sanitation device (MSD). Upon returning to shore, portable toilets should be emptied into approved shoreside waste handling facilities, and MSDs should be discharged into approved pumpout stations.

Whether you know it or not, each of us is already helping to promote proper sewage discharge. Every time you purchase motorboat fuel and fishing equipment, part of the money is contributed to a fund set aside by the Sportfish Restoration Act and the United States Clean Vessel Act. This fund provides states money for the construction, renovation, operation and maintenance of pump-out stations and waste reception facilities for boaters. Be proud of your role!

Plastics and Trash

Today, most folks would not consider throwing their trash — plastic, nets, fishing line, six-pack rings, styrofoam and so forth — overboard. Yet every year, tons of debris makes its way into our waters.

Often unintentionally, boaters contribute to the problem. Empty ice bags and six-pack rings are blown out of the boat. Fishing line is too tangled to save so it gets tossed into the water. Cigarette butts are often not even considered trash, and casually flicked overboard.

The following recommendations are pretty straightforward:

- Be careful. Accidents and spills happen even when you have the best of intentions.
- Leave as much plastic ashore as is reasonably possible. That way there is no chance of it falling overboard.
- Carry a trash bag. If you put all of your trash in one place, it's easy to contain and dispose of when you get back to shore.
- Recycle where possible. Deposit your glass,

aluminum, plastic and newspapers in appropriately marked containers at marinas or other recycling centers.

What Else Can I Do to Help?

- Equip your boat with a long-handled net and a trash bag, and put them to use — every time.
- Organize a one-day cleanup of your local waters. Encourage participation from your fishing group, civic group or even local boy/girl scout troops or 4-H clubs.

Fish Wastes

When you've had a great day out catching fish, do you ever give any thought to where and how you clean them? You should!

The amount of fish waste (heads, scales and guts) disposed close to a marina or shore, can exceed what would exist naturally in the water. In small quantities, this fish waste is fed upon by such scavenging organisms such as catfish.

However, in large amounts where water circulation is restricted, decomposition of this fish waste can sig-

nificantly affect the water quality by lowering the dissolved oxygen levels and even spreading disease among native fish populations. This can be a problem in marinas or near boat landings where fish are cleaned and water is not flushed adequately.

Cleaning and gutting fish at a fish-cleaning station with trash receptacles and wastewater hookups easily solves any potential problems. If one of these stations is not convenient, bag your fish waste and throw it away with your other household garbage.

Dock Construction and Maintenance

One of the many advantages to living on the lake is

Assessment - Dock Construction & Maintenance

	Low Risk	Medium Risk	High Risk	Your Risk
Deck construction	I will use a licensed marine contractor to construct my dock. I will examine the plans, specs and permits for their compliance with state regulations.	I will apply for the dock permit myself. I will construct the dock in a location that minimizes erosion.	I will not apply for a dock permit. I will build the dock without regard for localized erosion.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Material	I will insist on the use of recycled plastic lumber.	I will use pressure-treated lumber that has been properly labeled and is free of visible residue.	I will use whatever lumber is the cheapest and most readily available, giving no thought to the chemicals used.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Product selection	I will use whatever lumber is the cheapest and most readily available, giving no thought to the chemicals used.	When I clean or seal my dock, I use commercially available products. I always read the label for warnings about potential harm when used around water and purchase only environmentally safe alternatives.	I always use whatever is on sale to clean my dock. I never pay attention to the chemicals inside.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
Application	When applying sealer to my dock, I always work on a sunny day with no wind. I use a tarp under my bucket to catch drips and only use a small amount of the sealer.	When I apply sealer, I try to avoid spills and drips. I rinse my equipment out in the lawn, away from the dock.	I always use a sprayer when I apply sealer to my dock, giving little consideration to how windy it is. I use a large amount of sealer. When I finish, I rinse the sprayer out in the creek.	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

quick and easy access to water. Those who enjoy boating and other water related recreational opportunities, and also own waterfront property, often want a dock or boat slip to improve this access.

If you plan to repair the one you already own, there are choices you will make that affect the environment.



Are you going to use a marine contractor or do the work yourself? What kind of wood will be used for the pilings and decking? Have you made considerations for potential erosion problems?

Getting the Proper Permits

Before any dock construction can begin by either you or a contractor, a permit must be acquired from the Corps of Engineers.

The permit application is a straightforward document explaining the requirements and information that must be submitted to Corps of Engineers. In most cases an administrative fee is required as part of the permitting process. The fee is \$30 for five years for private docks.

Choosing a Marine Contractor

Choosing your marine contractor and or dock builder can be more important than any other contractor you may need. Why? Because the marine construction industry is largely unregulated. Blue prints, stamped by a professional engineer, must be submitted and

requirements must be met.

Nobody checks the work of the contractor during the building process, but final approval to make sure that standards have been met must be done by the Corps of Engineers.

Go look at the work of any marine contractor/dock builder you consider for your project and "ask around" about their reputation. Call the Better Business Bureau to see if there are any complaints registered against the company.

Also, make sure the contractor specifies what type of wood will be used for each of the dock components. Are they going to use regular or marine-grade pressure treated lumber? What is the pile length and how will they be seated? What are the dimensions of the decking lumber? Will they use galvanized nails or lag screws? The contractor

you select should spell out all of this detail and more.

What Type of Material Will You Use?

To ensure structural soundness and long service life for docks, wood should be protected from attack by insects or microorganisms and by decay from fungi. Pressure treatment offers a long-lasting and generally environmentally safe alternative.

In pressure treatment, chemical preservatives are forced deep into the cellular structure of the wood in a closed cylinder under pressure. This process enables the preserved wood to maintain a chemical barrier against insects and decay for long periods of time. The fact that preservatives are bound so effectively into the lumber means less is available to seep or leach into water.

There are three basic types of wood preservatives: waterborne, oilborne and creosote. Only the waterborne chemicals are generally used in pressure-treated wood products intended for residential uses. These products are generally available at your neighborhood

home improvement centers.

Oilborne preservatives, such as creosote, are now used primarily for commercial applications, such as timbers for railroad ties, bridges and wood used in marine structures such as bulkheads and seawalls.

Pressure-treated wood has not been listed as hazardous waste. In many cases, the wood can be reused in its original form or used in secondary applications such as fence posts, landscaping or other projects. Treated wood should not be burned in fireplaces, stoves or other nonpermitted units because toxic residue may be produced as part of the smoke or ashes.

Board dimensions are also very important. 2" x 8" boards are much stronger than 2" x 6" boards when used for stringers. Make sure you know the dimensions and treatment levels for the boards to be used on your project.

Pressure-treated Wood Application and Retention Table for CCA Alternatives to Wood

Retention (lbs/ft ³)	Product Application
0.25	Above Ground
0.40	Ground Contact
0.60	Permanent Wood Foundation

Recycled plastic lumber is gaining popularity among marine contractors and environmentally conscious homeowners. Plastic lumber is more expensive than regular or marine grade pressure-treated lumber, but it is virtually maintenance-free and many companies provide a lifetime warranty on the materials.

Plastic lumber means you'll never have to worry about the effects of water or moisture damage. It is impervious to marine borer worms, insects, water and chemicals. It is solid, nonporous, and will not leach any chemicals into the water. Another positive point is that most of this type of lumber is made from 100-percent recycled plastic material. Your purchase and use of these products closes the recycling loop!

Working with plastic lumber is the same as regular lumber and requires only standard wood-working tools and fasteners. Several floating even fixed docks can be shipped completely or in kit form with all the hardware you need. Talk with your dock builder or do some research yourself to find the best deals.

Repairing and Maintaining Your Dock

For too many people who own or take care of docks, it seems like repair and maintenance is an annual chore. Although pressure-treated wood resists insects and decay, it's still vulnerable to moisture and the sun's rays.

While nailing loose deck boards, replacing rusted or worn framing bolts and fasteners, and inspecting electrical or water lines are all necessary practices, we are going to focus on the maintenance of the wood itself.

Before you go out and purchase any cleaning products, remember that a hard bristle brush with a long handle (to save your back), a bucket of water and an afternoon of elbow grease will often clean your dock as well or better than commercial products. In addition, you have the added benefit of knowing that if you tipped your bucket over, no harmful chemicals would spill into the water around your dock!

Proper care and maintenance of your dock will ensure long years of enjoyment and clean water quality.

There are a wide variety of products available to help you maintain the structural integrity and look of your dock's wood. New wood treatment protects brand new lumber from sun and rain, deck cleaner can help with dirty and graying docks, and a clear wood preservative will revive the beauty of your weathered dock while protecting against the elements. Before you use any of these products, ALWAYS read the label before you begin. Many oil-based wood maintenance products are very harmful to water quality if they are spilled or applied improperly.

The following tips will help you properly apply wood-care products to your dock:

- Remove all loose dirt and debris before you apply wood-care products.
- Try to work on a day with light or no wind.
- Always use a tarp or ground cloth under your project to help prevent drips and spills.
- Use a brush or roller when applying the sealer to minimize dripping. Don't use a sprayer because the

excess will find its way into the water around your dock.

- Use as little of the product as it takes to completely cover the decking, avoiding drips.
- Rinse and clean tools in the yard, well away from any surface water.