



## CHAPTER 2

# What Does It Mean to Boat Green?

A way. A commitment. A desire to make a difference.



**B**oat green is a way of boating that seeks to address the declining health of our oceans, rivers and lakes by recognizing that boaters, while not a major cause of marine environmental degradation, can be an important part of the solution. Boat green is a way of operating and maintaining a vessel that recognizes and protects the value of our offshore, coastal and inland waters along with their associated ecosystems. Boat green contributes to the health and safety of a vessel operator and crew and to other vessels and crews. Boat green improves vessel performance and reduces vessel maintenance, often resulting in lower overall costs of owning a vessel. And boat green enhances the enjoyment of being on the water.

### The Value of the Marine Environment

How do you value the marine environment in which we boat? Often we think of value in economic terms by asking: What is this worth to me? So, let me ask that question: What is the marine environment worth to you? If you're not a commercial fisherman, tugboat operator, tanker crew member or someone who makes a living on the water, that question is not an easy one to answer. Most boaters spend more on the purchase, operation and maintenance of their boats than they will ever receive back in economic terms. Let's face it, it makes more economic sense to purchase fish from a local supermarket than to spend hundreds of thousands of dollars on the purchase of a vessel and then thousands of dollars

operating and maintaining that vessel just to go fishing for a few weeks each year. And yet boaters do just that. Many don't even fish while they're on the water. So what then *is* the value of the marine environment?

Boat green begins with a recognition that the value of the marine environment lies beyond traditional economics. How do you place a monetary value on viewing a sunset from a secluded cove? Sailing on a broad reach with an expansive view of the coastline to port? Paddling an inlet and suddenly finding yourself in the midst of a pod of whales? Or waking up to the smell of salt air and gentle waves? You might find some way of assigning value to these experiences: they bring relief from the daily stresses of life and therefore reduce your need for psychotherapy or drugs; they enhance your productivity and creativity once you return to work after spending time in the marine environment. But such attempts at assigning value miss the point that the marine environment offers us values not easily quantifiable in economic terms — esthetic, emotional and spiritual values that are vitally important to us.

Take a moment to consider the value you derive from boating. Using the following list, check off which values apply to you.

- Beauty of being in the marine environment.
- Enjoyment of solitude.
- Release of stress.
- Opportunity to meet other like-minded boaters.
- Just cruising with no particular aim, destination or purpose.
- Joy of fishing.
- Beach-walking.
- Recreational activities done from your boat like snorkeling, scuba diving or kayaking.
- The spirituality of being on the water and in nature.
- Opportunity to see wildlife.
- Boating as a way of life.
- Ability to visit new places and people.
- Challenge of operating and maintaining a vessel.
- Joy and challenge of navigating.
- Thrill of adventure.
- Food tastes better when cooked from a boat.

Think of some more values of your own.

How important is it to you to preserve these values that you derive from being on the water? Based on the items you checked, how would you answer this question? There are no right or wrong answers because each person values the marine environment differently.

- Very Important. It would significantly diminish the quality of my life if I could not derive these values from the marine environment.
- Somewhat Important. It would impact my quality of life somewhat if I could not derive these values from the marine environment.
- Not Important. It would not impact my quality of life if I could not derive these values from the marine environment.

Are you willing to take steps to preserve the value you derive from the marine environment?

In some ways this is a trick question. Simply being a boater suggests your answer to this question is yes, because all boaters are subject to a number of laws, regulations and rules that help to preserve the marine environment. The basic coast guard safety regulations (see chapter 7) that all boaters are required to comply with not only enhance safety but also protect and preserve the marine environment. Similarly, the nautical Rules of the Road that we follow play an important role in safety and in environmental protection. You may keep your boat in a marina that has guidelines you must follow, and those guidelines often include protections for the marine environment.

In this respect, all boaters boat green by complying with these basic laws and regulations. This book simply builds upon what we already do as boaters by presenting and describing a number of additional steps that we can take to help preserve the marine environment from which we derive such important value in our lives.

### Did You Know?

According to a 2006 survey conducted by Discover Boating and Russell Research, boaters turn to the water for peace and relaxation; 93 percent of boaters said their favorite hobby was a source of stress relief.<sup>1</sup> The survey uncovered more good news for boaters, as it seems

the calming benefits of time spent on a boat continue while on land. Boaters expressed greater satisfaction with many quality of life aspects, including their physical fitness, health, love lives and performance of their children in school.

The survey, which polled more than 1,000 boaters and non-boaters, found that the perks of boating extend beyond the docks. Boaters expressed greater satisfaction with their physical fitness and overall health, as well as those of their children. The number of outdoor activities boaters enjoy once they set sail, such as fishing, scuba diving and wake boarding, may be one reason why boaters are more pleased with their active lifestyles than those who remain landlocked.



## CHAPTER 3

# The Health of Our Oceans

Worldwide, our oceans are in danger.



**H**ave you ever cruised on a sun-drenched day, operating your boat from outside, when suddenly there's a puff of air, and as if by magic the arched backs of a school of dolphins emerge from the surrounding waters. For the next half hour, they ride your bow wave, crisscross just in front of you or leap high, pirouetting and flipping in mid-air like a troupe of aquatic ballerinas before disappearing below the surface again. Perhaps you've seen a humpback whale raise its dorsal fin, then tumble over on its side and travel with you, whale eye staring at human eye, as though communicating in a language beyond sound that seems to say, "I am a master of this watery realm, and I wish to know who visits my domain in such a fragile craft."

Perhaps you've watched a bald eagle screaming down from high above, striking the water like an airborne torpedo then struggling to rise again with a huge salmon snared in its talons. Maybe you have a favorite crabbing or prawning spot, where you can drop a trap, wait a few hours and then haul in enough food for several days. What about that fishing hole you know? The place where a stream meets the ocean and fish congregate like revelers on Mardi Gras. It seems a guilty pleasure. With every drop of your line, there's a bite and food to freeze for months to come.

Do you have favorite anchorage? An out-of-the-way spot fewer boaters know about; a place where you can "drop the hook" and for days you might not see another boat; a place where all you want to do

is sit and stare out at the beauty around you, while you let the stress of your everyday life drain away.

Idyllic? Yes, but it's one reason that many of us boat.

Now imagine a cruise over your favorite grounds. No dolphins or whales break the water's surface. No fish jump. No eagles dive. No crabs and prawns climb into your traps. Or imagine arriving at your favorite anchorage only to find the stench of human waste so awful, you can't stomach staying for more than a few sad minutes before moving on.

Our oceans are dying. Dead zones like these are cropping up in off-shore and nearshore waters worldwide. This isn't meant to be a scare tactic, it's a simple statement of fact supported by decades of research, the observation of boaters and the demise of communities and livelihoods once based on the bounty of the sea.

The statistics are dismal, but they are also necessary to confront if as humans we wish to continue enjoying the splendor of the oceans for generations to come. As a boater, I've cruised over dying seas, and it brought me to tears. The experience also called me to action, searching for something — anything — that I could do, that would at least slow down the rate of decline of our oceans and perhaps give nature time to heal. Most of this book is about the steps we can take to prevent further damage to our oceans, but before we get there, we need to know the current poor health of our oceans.

## Did You Know?

- Dissolved oxygen is critical to the life of most marine organisms.
- Dead zones are areas of the ocean where the bottom water has no or little oxygen.
- Eutrophication (which means “too many nutrients”), the process by which dead zones are created, is fairly simple:
  1. Plankton, and other aquatic plants, at the surface of the oceans die, producing organic matter which sinks to the bottom.
  2. Bacteria at the bottom of the oceans break down the organic matter.
  3. Plankton need sunlight and nutrients to survive. They take in carbon dioxide and produce oxygen during their lifetime.

4. Bacteria, on the other hand, take in the oxygen from the water and produce carbon dioxide as they feed on the organic matter from the plankton and break it down.
  5. As bacteria remove oxygen from the water, there is none left for the marine life that depends on it for survival.
  6. When plankton colonies grow very large they overwhelm the bacteria that normally breaks down organic matter.
  7. Dead zones are the result.
- Human pollutants, particularly from agricultural runoff, finds its way into streams and rivers and ultimately into the oceans where those runoffs provide food for the plankton, escalating the cycle of depleting oxygen.
  - Many dead zones begin around the mouths of river systems, like the Mississippi, and then spread offshore, a process known as “creeping dead zones.”
  - Large blooms of plankton also restrict water flow, which in turn prevents normal ocean tides and currents from refreshing oxygen-depleted waters with oxygen-rich waters.

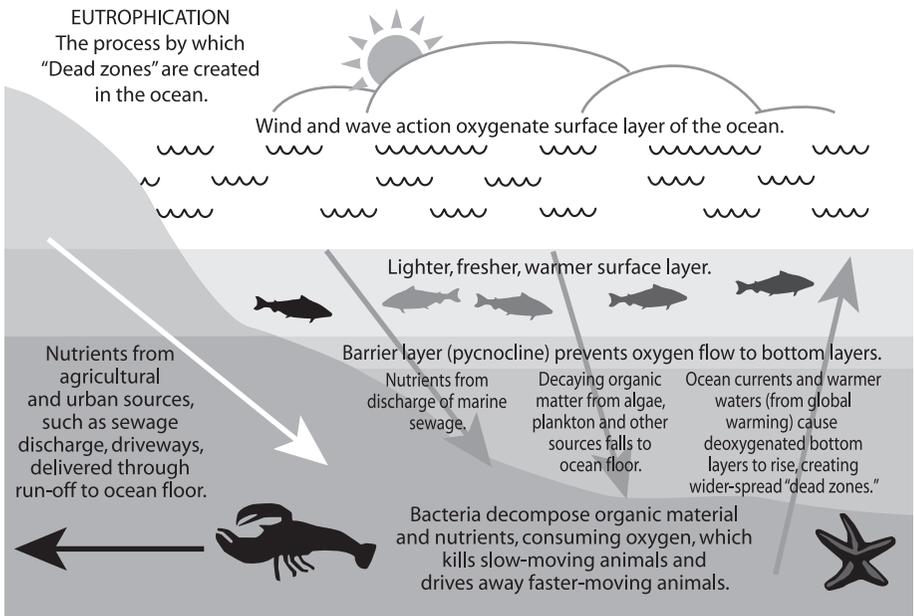


Fig. 3.1: Eutrophication.

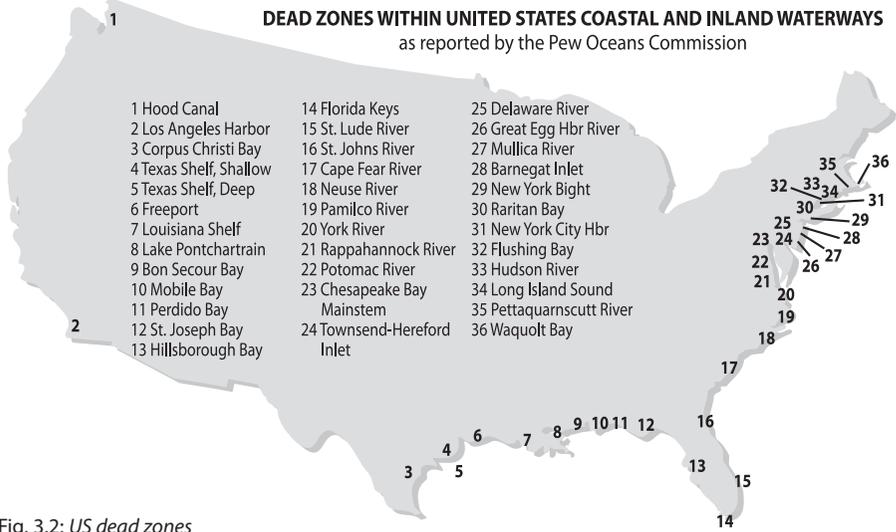


Fig. 3.2: US dead zones

- Any pollutants that cause an increase in plankton blooms can contribute to this problem.
- Cruise ships that regularly dump raw sewage into harbors may contribute to the creation of mini dead zones.
- Many recreational boaters who discharge their heads in areas of low tidal exchange can also assist in the creation of mini dead zones. Human sewage is a good source of nutrients for aquatic plants.

In 2003 the Pew Oceans Commission released a major report on the state of the oceans entitled “America’s Living Oceans.”<sup>1</sup> Its findings were stark and often grim:

- The amount of oil running off our streets and driveways and ultimately flowing into the oceans is equal to an *Exxon Valdez* oil spill — 10.9 million gallons — every eight months.
- The amount of nitrogen released into coastal waters along the Atlantic seaboard and the Gulf of Mexico from human activity such as fertilizers and livestock sewage has increased about fivefold since the pre-industrial era, and may increase another 30 percent by 2030 if current practices continue.
- Two-thirds of our estuaries and bays are either moderately or severely degraded by areas of spreading dead zones.

- More than 13,000 beaches were closed or under pollution advisories in 2001, an increase of 20 percent from the previous year.

## Human Health and Ocean Health Are Linked

The oceans give us life: 50% to 70% of the oxygen we breathe comes from oxygen produced by aquatic plants and organisms. Oceans cover 70% of the Earth's surface, and 60% of the human population lives on or near the coastline, including more than 50% of the United States population. Human pollution of the oceans supports the rise of toxic algal blooms worldwide, which in turn move up the food chain in marine organisms such as shellfish. When eaten by humans, these produce symptoms that include nausea, respiratory problems and memory loss; fatality rates exceed 10% in some cases.<sup>2</sup>

Human-assisted climate change (global warming) results in higher ocean temperatures, which in turn can cause seawater to carry deadly human pathogens like cholera.<sup>3</sup> As the oceans become barren, human nutrition suffers. More than two billion people worldwide depend on the oceans for a substantial source of their daily protein. We have already harvested more than 90% of the large fish that live on continental shelves and the open water.<sup>4</sup> For the time being, affluent nations feel little impact from the decline of the sea as a source of food, but the populations of poorer developing nations are suffering from empty nets and contaminated catches pulled from the sea. In 2004 the United States Congress passed the Oceans and Human Health Act, to further study this issue.

## Hope Amidst Gloom

As dismal as the reports on the health of oceans are, one can still find hope. Almost fished to extinction in the 1970s, striped bass, or rock fish, have made a dramatic comeback along the Atlantic seaboard in the last two decades through strict limits on fishing and a concerted restocking effort by federal and state governments. Restocking and a "zero-catch" policy have led to surprisingly large stocks of Eastern sturgeon in the Hudson River and other eastern seaboard estuaries. In 1997 North Atlantic swordfish had been fished to the brink of extinction. "Give the Swordfish a Break," a campaign spearheaded by the National Resources Defense Council (NRDC) and Washington, DC

restaurateur Nora Pouillon, led to strict limits on catches and closure of fishing for swordfish in breeding grounds. In 2000 NRDC ended its campaign, with swordfish stock recovering to nearly 94% of what biologists considered a healthy, sustainable level.

After Los Angeles reduced waste discharges into nearby waters, kelp beds, seabirds and fish stocks returned to coastal waters.

Recreational boating and fishing are not major contributors to the decline of our nation's coastal and offshore waters. But the actions of recreational boaters can be a major force in demonstrating to others the importance of caring for the marine environment that we boaters treasure. Yes, our oceans are ailing. But by scrupulously taking actions and making boating decisions that reduce pollution and minimize harm to the marine environment, we can give our oceans a chance to heal.

### *Internet Search Terms*

“Pew Oceans Commission”; eutrophication; “dead zones” ocean; “striped bass” comeback; sturgeon comeback; “North Atlantic swordfish” comeback