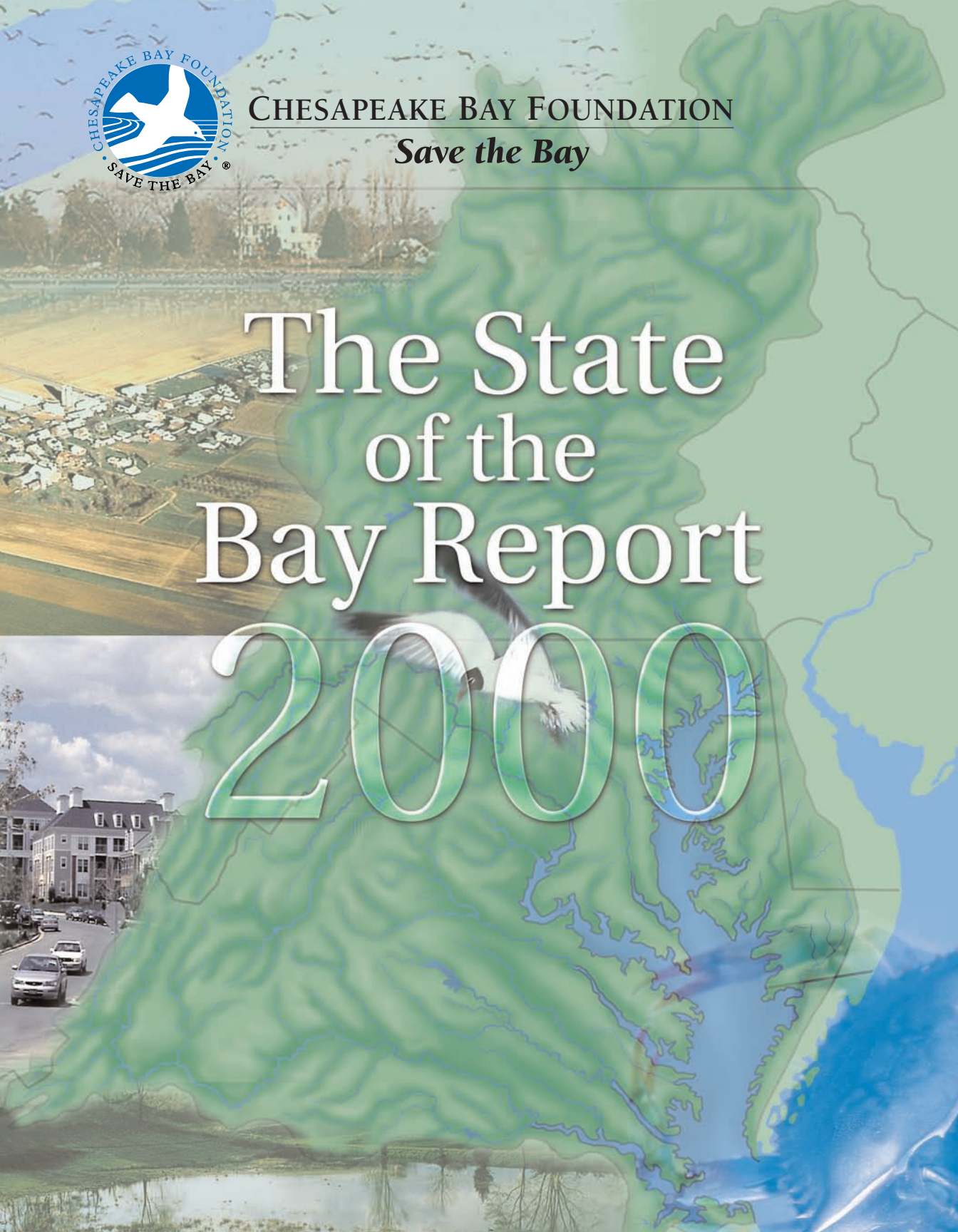




CHESAPEAKE BAY FOUNDATION

Save the Bay

The State of the Bay Report 2000



The Chesapeake Bay's Health Remains Stressed in 2000

We are frequently asked, "How's the Chesapeake Bay doing?" Unfortunately, our answer this year is that the Bay remains a system dangerously out of balance. Despite modest improvements since the 1980s, key Bay systems are distressed, nutrient pollution continues to hinder its overall water quality, and the Bay operates at barely more than one-fourth of its historical potential.

On a scale of 0 to 100, the Bay's health rates a 28, the same as in 1999. This year there have been positive trends in habitat restoration and marked improvement in the shad population. These advances, however, were offset by declines in blue crabs, water clarity, nitrogen, and phosphorus.

Fortunately, Chesapeake 2000, the new Chesapeake Bay Agreement signed in June 2000, provides a strong blueprint to raise the Bay's score significantly over the next decade. Foremost among its commitments are a tenfold increase in the Bay's oyster population and a pledge to preserve millions of acres while reducing by 30 percent the rate of loss of forest and farmland to sprawl. The complex nature of the Bay system will continue to defy quick fixes. It demands that the problems at the core of the Bay's ills be resolved before we see rapid progress. But if key Bay states and the public unite to turn the agreement's promises into action, the Bay's health has the potential to improve dramatically.

The health of the Chesapeake relies on intricate natural systems that filter water and provide habitats that sustain diverse and abundant life. By observing key components of these systems, CBF scientists measure the state of the Bay. They examine the best available historical and current information for factors in three categories: pollution, habitat, and fish and shellfish (fisheries). Although they seek advice from other scientists who study the Bay, ultimately the best professional judgment of CBF scientists determines the value assigned each factor.

The Bay we know is measured against the healthiest Chesapeake we can describe—the rich and balanced Bay that Captain John Smith told of in his exploration narratives of the early 1600s. Smith explored the Chesapeake when clear water revealed meadows of underwater grasses, prodigious oyster reefs that posed a threat to navigation, and abundant fish. Ancient forests canopied rivers and streams. Native Americans lived lightly on the land. Modern science confirms many of Smith's observations. Smith's Bay rates 100 and is our benchmark.

When CBF first asked the citizens of the watershed to help save the Bay 33 years ago, our estuary was in trouble. Even as we worked to make improvements, the Bay's health declined, bottoming out around 1983 with a rating near 23. The work of public agencies, private groups, and tens of thousands of volunteers has turned the tide. The success stories, such as the restoration of rockfish, are encouraging. Yet continued water quality problems, as evidenced in the nutrient runoff and algae blooms during the rainy summer of 2000, and the over-stressed crab fishery demonstrate the complexity of Bay restoration.

The State of the Bay Report provides a reference for how far we have fallen from Smith's Bay and how far we must go to reach a "saved" Bay. A saved Bay is resilient enough to withstand the storms of nature and of humankind and rich enough to nurture diverse cultures and contribute abundantly to our economy. We will never again see the Chesapeake as it was three centuries ago, with an index of 100, but we believe a Bay with an index of 70 is achievable by 2050. We must remember how rich our Chesapeake Bay was, even 40 years ago, and not settle for a small fraction of what we know it can be.

Habitat



Wetlands

42 [no change from 1999]

In the last two years, thousands of acres of Virginia wetlands were ditched and drained, offsetting encouraging restoration gains made in 1999. As a result, the index remains at 42.

Observations: Though it came after thousands of acres of wetlands were already destroyed, Virginia's new comprehensive nontidal wetlands protection program closed the "Tulloch Rule," a catastrophic loophole in wetland's protection. Restoration efforts, such as CBF's partnership with Ducks Unlimited, have begun to show success. In Maryland, Pennsylvania, and Virginia, additional funding is available to increase restoration projects, but these initiatives will take some time before they reverse the damage done under the Tulloch Rule.



Forested Buffers

53 [no change from 1999]

CBF estimates that riparian forests buffer only 53% of the watershed's 110,000 miles of streams and shorelines.

Observations: CBF, state and federal agencies, and citizen volunteers have restored more than 600 miles of buffers through programs such as the Conservation Reserve Enhancement Program. But restoration continues to be undermined by losses to development. Strong restoration programs must be coupled with strong smart growth programs to achieve a significant increase in the forested buffers index.

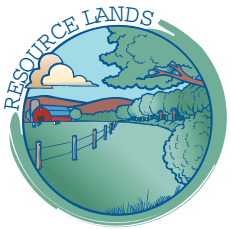


Underwater Grasses

12 [no change from 1999]

Encouraging gains in some areas of the Chesapeake watershed were offset by losses in other areas. The net result is that underwater grasses still remain at 12% of their historic levels.

Observations: The Gunpowder, Chester, and Potomac Rivers all lost grass beds at the end of the 1999 growing seasons and those losses have carried through to this year. However, Tangier Sound, where grass beds had declined for six years before rebounding last year, continues to make impressive gains. A marked increase in the acreage of underwater grass, which is critical to the health of blue crab population, depends on clear water, which can be achieved only through drastic reductions in nutrient and sediment pollution.



Resource Lands

33 [no change from 1999]

This index is based on the current development rate in the watershed, with "100" the value at John Smith's time and "0" representing an almost unimaginably rapid rate of development of 135,000 acres per year. CBF estimates that the watershed currently loses 90,000 acres of farmland and open space annually, which accounts for an index value of 33.

Observations: Open space in the watershed continues to be converted to developed land at an alarming rate. Pennsylvania and Maryland have taken steps to conserve and protect essential lands, yet land conservation and smart growth initiatives need to be advanced throughout the entire watershed. In the new Chesapeake 2000 agreement, the states agreed to reduce the annual loss of forest and farmland by 30 percent. They now need to develop and carry out the programs to accomplish this.

Pollution



Toxics

30 [no change from 1999]

There has not been a substantial reduction in the amount of toxics that enter the Bay watershed. Therefore, the index remains at 30, which indicates a degraded Bay.

Observations: Harmful toxic chemicals continue to flow into our waterways at an alarming rate. State and federal regulatory and monitoring systems currently in place are inadequate to achieve significant reductions. Chesapeake 2000 took a step forward with commitments to strive for “zero discharge” of toxics and to eliminate by 2010 the use of dilution in dealing with toxic discharges. These commitments and others must be taken seriously by government and industry if the ultimate goal of a toxics-free Bay is ever to be met.

Water Clarity

15 [-1 from 1999]

Last year’s drought-driven increase of 1 point has been reversed as this year’s rains washed sediments and algae-producing nutrients into the Bay system. A rating of 15 indicates turbid water.

Observations: Without clear water, sunlight cannot penetrate strongly enough to give underwater grasses the energy they need to grow. Erosion- and sediment-control programs must be strengthened and enforced to advance efforts to protect and restore underwater grasses. Similarly, stronger programs and enforcement are needed to control nitrogen and phosphorus pollution.



Phosphorus 15

Nitrogen

15 [both -1 from 1999]

Last year, CBF’s ratings for both nitrogen and phosphorus improved slightly because the drought reduced runoff and stream flows, which resulted in less of these nutrients reaching the Bay. This gain was short-lived, however, as normal rainfall returned this year, washing large quantities of nutrients into the Bay and driving the index back to 15.

Observations: Nitrogen and phosphorus pollution comes from a variety of sources and in two forms—runoff and point-source pollution from the land, and fall-out from the air. From the land comes pollution from agriculture, septic tanks, and sewage treatment plants. Our cars, busses, other engines, and power plants produce air pollution. Excessive nutrients fuel algae blooms, and from spring to late summer such blooms have plagued the Bay. The blooms cloud the water and prevent sunlight from reaching underwater grasses and can rob the water of oxygen, leading to fish kills. To achieve a Baywide trend in reduced nitrogen and phosphorus levels that is not subject to the annual fluctuations in rainfall, efforts to reduce nutrient pollution from all sources will need to be redoubled in the next decade.



Dissolved Oxygen

15 [no change from 1999]

Several areas of the Bay suffered from episodes of anoxia (no oxygen) and hypoxia (low oxygen) again this year. Primarily a result of algae blooms driven by nutrient pollution, low dissolved oxygen levels are also influenced by river flows, which were probably changed forever by the destruction of forests.

Observations: There has been no improvement in the watershed’s average dissolved oxygen levels. Fish kills, an obvious result of low oxygen levels, occurred in a variety of areas this year, indicating the widespread nature of the problem. Increased protection and restoration of natural buffers like wetlands, forests, and underwater grasses are needed. These buffers reduce nutrient pollution, ultimately increasing dissolved oxygen levels.



Fisheries



Crabs

46 [-2 from 1999]

Intense fishing pressure, poor harvest, and extremely low levels of the underwater grass habitat, especially in areas critical to the crab's life cycle, drop the crab health index 2 points.

Observations: Poor habitat and excessive effort by recreational and commercial crabbers continue to destabilize the blue crab population, resulting in a year with few crabs. The universal recognition of the gravity of the situation provides hope that new management strategies may finally come to grips with the problems. The Bi-State Blue Crab Advisory Committee has made progress in its efforts to develop a comprehensive plan to manage crabs more effectively, including the adoption of a sanctuary in Virginia for spawning crabs. Yet the committee faces the challenge of setting harvest targets that result in healthy crab populations, and ensuring that the states achieve the targets. In the long run, a healthy Bay crab population depends on the restoration of underwater grasses and a reduction in crabbing pressure.



Rockfish

75 [no change from 1999]

A vibrant Chesapeake Bay fishery and the potential of an upcoming new management plan are offset by concerns there are too few large, old fish, which keeps the rockfish (striped bass) index at 75.

Observations: Rockfish numbers in the Bay are stronger than they have been in decades, yet concerns persist about the fishery. They include a worry that the food web is out of balance, with too few menhaden and other small fish available for the fish to eat, in addition to only average reproduction rates. However, the development of a new coastal management plan that focuses on long-term objectives is cause for optimism.



Oysters

2 [no change from 1999]

Though gaining ground, restoration efforts have not yet boosted oysters beyond about 2 percent of their abundance in John Smith's time. Potential funding for restoration and research projects hold promise.

Observations: Although the index did not change this year, several factors may spur a dramatic increase next year. For example, field projects such as sanctuary reefs are underway, the Chesapeake Bay Program is committed to increase oysters tenfold in the next decade, and there is public support to fund additional restoration projects. This optimism is tempered by the tremendous effort needed to improve habitat and understand how disease affects oysters.



Shad

5 [+2 from 1999]

The reopening of the Susquehanna River to fish migration for the first time in 100 years is the principal factor that led to an increase of 2 points. However, the Bay's shad population remains at only a fraction of its pre-colonial level.

Observations: Last spring, shad and other anadromous fish migrated up the Susquehanna River to spawning grounds in far greater numbers than in previous decades. The opening of the new fish ladder at the York Haven Dam and the continuation of the five-year plan to phase out the ocean fishery also represent real progress in shad restoration. Although these are encouraging steps toward the replenishment of shad and herring stocks in the Chesapeake watershed, more restoration and protection efforts are essential to maintain momentum.

The Push for a Bay at 50

On June 28, the Chesapeake Executive Council signed Chesapeake 2000, which serves as a blueprint for the actions of government, businesses, and citizens for the next decade. The final agreement included several CBF recommendations from our 1999 State of the Bay Report, which set 2010 goals that would take the Bay's health index to 50. The list below describes the commitments made in Chesapeake 2000. These commitments, if implemented, will markedly improve the Bay's health, perhaps to a score of 40. CBF continues to believe, however, that a Bay with a score of 50 is achievable in the next decade. To this end, CBF will work to ensure that the programs necessary to meet the goals in Chesapeake 2000 are underway and effective and to strengthen the goals that we believe are inadequate.

Government alone will never achieve CBF's goals or those in Chesapeake 2000. All 15 million of us who live in the Bay watershed must insist that government keeps its commitments, and redouble our individual efforts to act in a more Bay-friendly way in our daily lives.

Wetlands—By 2010, restore 25,000 acres of tidal and non-tidal wetlands.

Forest Buffers—By 2010, restore 2,010 miles of buffers; by 2003, establish a new goal to expand the number of buffer miles.

Underwater grasses—Recommit to a goal of 114,000 acres of underwater grasses; by 2002, revise underwater grasses goals and strategies to reflect historic abundance.

Dissolved Oxygen—By 2001, define the water quality conditions necessary to protect living resources and assign load reductions for nitrogen and phosphorus to achieve them.

Resource Lands—By 2012, reduce the rate of harmful sprawl by 30 percent; permanently preserve 20 percent of the watershed from development by 2010.

Toxics—Strive for zero release of toxics from all discharge pipes and smokestacks; by 2010, eliminate the use of dilution in determining allowable releases of toxics to the environment.

Water Clarity—By 2010, meet specific levels of water clarity to achieve restoration of underwater grasses to historic levels.

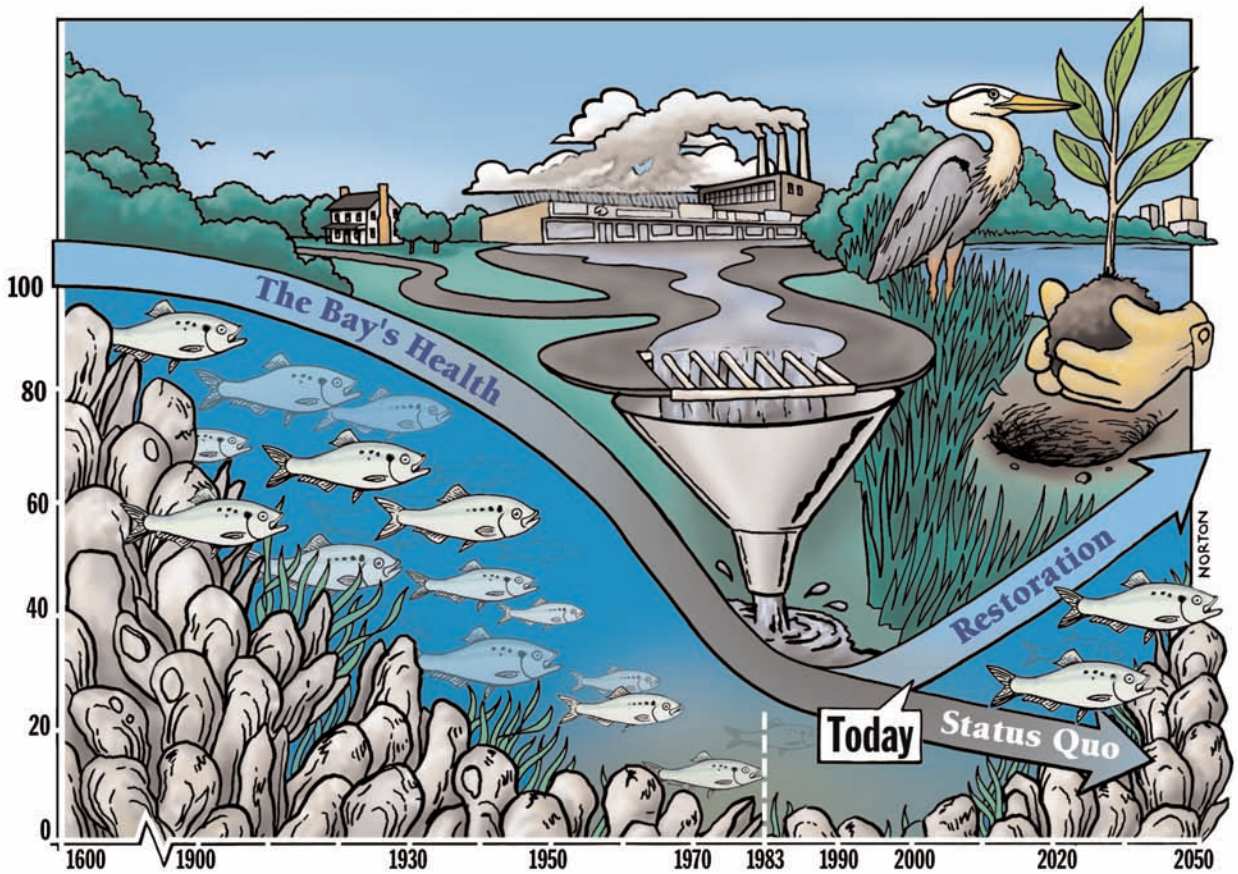
Nitrogen and Phosphorus—By 2010, reduce nitrogen and phosphorus levels enough so that the Bay is no longer impaired by nutrient pollution.

Blue Crabs—By 2001, establish harvest targets and manage the blue crab fishery to restore a healthy crab population.

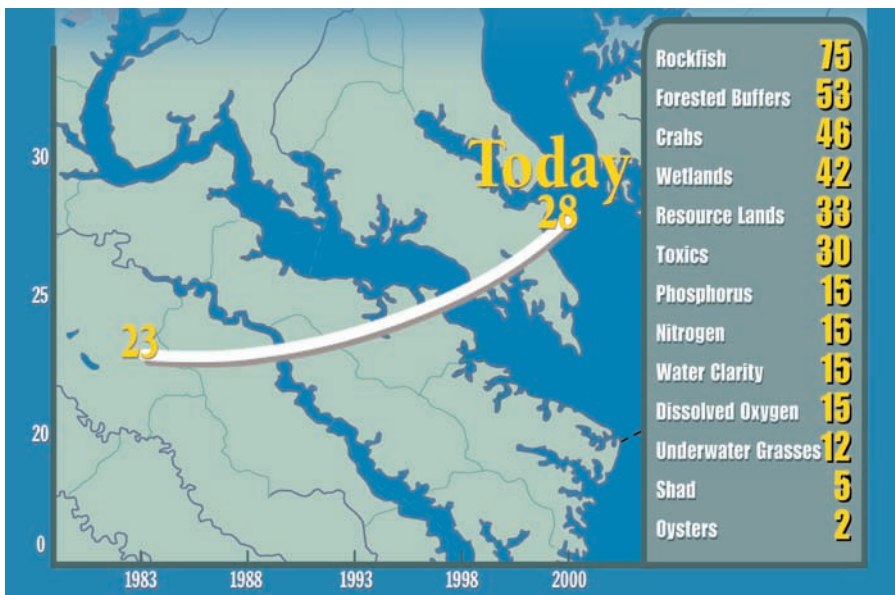
Rockfish—By 2005, develop ecosystem-based, multi-species management plans for menhaden and other species that are a critical food source for rockfish (striped bass).

Oysters—By 2010, achieve—at a minimum—a tenfold increase in native oysters in the Chesapeake Bay.

Shad—By 2002, set population targets for individual tributaries, and develop plans to achieve them.



On a scale of 0 to 100, the Bay's health rates a 28. CBF believes a score of 50 is achievable in the next decade.



You Can Help Improve the State of the Bay

Each of us has a role to play to help improve the Bay's health. Below you will find several simple and effective actions you can take to help save the Chesapeake Bay.

- Set a goal to drive at least 10% less this year. Car pool, take public transit, and walk or ride your bike to reduce traffic congestion and air pollution. Vehicles account for a third of the airborne nitrogen pollution that chokes the Bay.
- Make your voice heard by joining CBF's Chesapeake Bay Action Network, which strategically links thousands of citizens, by email, to key elected officials who can impact important Bay legislation. (You can join the network on CBF's Web site at www.cbf.org.)
- Join CBF's hands-on restoration efforts to restore oysters, increase wetlands and riparian buffers, and grow and transplant underwater grasses.

To become a CBF member, or to get involved with our efforts to protect and restore the Bay, visit our Web site at www.savethebay.cbf.org or call 1-888-SAVE BAY.



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