

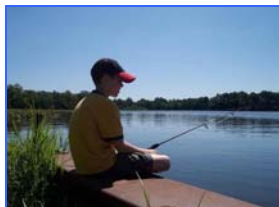


**CHESAPEAKE BAY
FOUNDATION**
Saving a National Treasure

What is the “Value” of the Chesapeake Bay and Virginia’s Waterways?

Healthy and safe waters improve economic opportunities for all Virginians, through increased benefits to vital sectors of the economy that rely on our waterways and decreased burdens on businesses and citizens impacted by water pollution. Below are eight categories of benefits or avoided costs that help show the value of the Chesapeake Bay and clean waters across Virginia.

- 1) The Chesapeake Bay provides significant economic benefits to the region.** A 1989 study from the state of Maryland that looked at fishing, tourism, property, and shipping activities estimated the value of the Bay to Maryland and Virginia to be \$678 billion (1). Considering inflation, an expert panel in 2004 placed the value at over \$1 trillion, with an annual economic benefit of \$33 to \$60 billion (2,3,4). A 2010 report said that waters that make up Delaware’s portion of the Bay watershed—only 1% of the watershed—support 47,000 jobs and \$1 billion in annual economic activity (5).



- 2) The Bay supports an important commercial and recreational fishery.** A study by the Virginia Institute of Marine Science estimated that in 2004 recreational and commercial fishing contributed \$1.23 billion in sales, \$717 million in income, and more than 13,000 jobs in Virginia, with two-thirds of the impact from recreation (6). Other studies focused just on sportfishing in Virginia found that salt waters alone generate \$1 billion and 5,000 jobs, and saltwater and freshwaters combined create over \$2 billion and 15,000 jobs (7,8). The Bay region generated \$908 million in commercial fishing landings from 2000 to 2004, with 97 percent coming from the Bay (9). Blue crabs have an annual dockside value of about \$50 million Bay-wide, rockfish generated \$97 million in 2003 for Maryland and Virginia, and oysters contributed \$13 million to these states in 2008 (10,11,12). Shellfish aquaculture is growing in Virginia, with clams generating \$70 million per year and oysters \$7 million per year (13).

On the loss side, between 1994 and 2004 the value of Virginia’s seafood harvest decreased by 30 percent (14). A Chesapeake Bay Foundation report stated that between 1998 and 2006 crabbing-related jobs in Maryland and Virginia declined 40 percent, from 11,246 to 6,760 (15). Other reports have estimated the decline in the number of watermen (16,17). The decline of the Bay oyster over the last 30 years has meant a loss of more than \$4 billion for Maryland and Virginia (18). A fish kill in the Shenandoah River watershed in 2005 resulted in \$700,000 in economic losses (19). Lastly, the gulf oil spill in 2010 has cost the Virginia oyster industry \$11.6 million (20).

- 3) The Bay and Virginia’s waters support a regionally vital tourist economy.** In 2007, visitors to recreational and heritage sites generated \$18 billion in Virginia (21). Tourist and leisure related industries employed nearly 350,000 workers in Virginia as of June 2010 (22). More than 23 million people visited Virginia’s national and state parks during 2009 (23). Statewide, travelers spent over \$17 billion during 2006 (24). Nationwide in 2006, almost 3 million people fished, hunted, or watched wildlife, and spent over \$2.4 billion pursuing these activities (25). A 2006 study compared the 1996 water quality of the Bay with what it would have been without the Clean Water Act and estimated that the annual recreational boating, fishing, and swimming benefits of water quality improvements ranged from \$357.9 million to \$1.8 billion (26).



4) **Clean waterways increase property value.** A U.S. Environmental Protection Agency (EPA) study indicated that clean water can increase the value of single-family homes up to 4,000 feet from the water's edge by up to 25 percent (27). A 2000 study concluded that improvements in water quality along Maryland's western shore to levels that meet state bacteria standards could raise property values 6 percent (28). High water clarity was shown to increase average housing value by 4 to 5 percent or thousands of dollars (29,30). Homes situated near seven California stream restoration projects had 3 to 13 percent higher property values than similar homes located on damaged streams (31). A study by the Brookings Institute projected a 10 percent increase in property values for homes that would abut a proposed \$26 billion Great Lakes restoration project (32). Lastly, the City of Philadelphia estimates that installation of green stormwater infrastructure in the city will raise property values 2 to 5 percent, generating \$390 million over the next 40 years in increased values for homes near green spaces (33).



5) **Healthy waters reduce public health costs.** Clean water decreases public health burdens associated with consuming tainted fish or shellfish or exposure to waterborne infectious disease while recreating. Mercury fish consumption advisories in Maryland result in annual losses of \$8.83 million for saltwater fishing and \$520,000 for the commercial striped bass fishery (34). Economic valuation studies indicate the annual human health benefits from reducing mercury pollution at tens of millions to billions of dollars from avoided health problems and lost productivity (35,36,37). Another study estimated the cost associated with exposure to polluted recreational marine waters to be \$37 per gastrointestinal illness, \$38 per ear ailment, and \$27 per eye ailment (38).

6) **Pollution reductions lower drinking water and other utility costs.** Reducing pollution inputs from pipes and land-based sources can reduce locality costs to treat drinking water sources to safe standards. New York City's expenditure of \$1 billion over the last decade to protect the watersheds north of the city that supply its drinking water avoided the need to build a \$6 billion treatment plant (39). An EPA study of drinking water source protection efforts concluded that for every \$1 spent on source water protection, an average of \$27 is saved in water treatment costs (40). Proactive efforts to lessen stormwater flows today reduce future public costs needed to maintain navigation channels, remediate pollution and hazard flooding, and repair infrastructure and property damage caused by excessive runoff. Philadelphia estimates that after 40 years their installation of green infrastructure will create more than \$2 in benefits for every dollar invested, generating \$500 million in economic benefits, \$1.3 billion in social benefits, and \$400 million in environmental benefits (41).



7) **Installation of agricultural "best management practices" improve water quality and Virginia's economy.** A study by the University of Virginia found that implementation of the agricultural practices to reduce runoff pollution called for in Virginia's Chesapeake Bay "tributary strategy," such as livestock stream exclusion, buffers, and cover crops, would generate significant economic impacts. Over a five year period these actions would create \$940 million in industrial output, a \$455 million impact on gross domestic product, and create nearly 12,000 jobs (42).

8) **Clean waters sustain aesthetic and cultural value.** While not easily monetized, clean waterways improve aesthetics and viewsheds that attract businesses and visitors to the region, and nourish heritage economies and cultures that rely upon healthy and productive waters for their way of life.

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