

# The impact to recreational fishing environmental sciences essay



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Agricultural Runoff is the Primary Cause [http://weblogs.baltimoresun.com/features/green/2008\\_bayreportcard.png](http://weblogs.baltimoresun.com/features/green/2008_bayreportcard.png) Table of Contents

## **Argument: Commercial farming is the top polluter of the Chesapeake Bay:**

The Chesapeake Bay is one of our nation's largest and most important Bays providing us with food, water and an area for recreational sports. While fertilizers, pesticides, manure and tilled soil are beneficial to crops, they become pollutants when water from irrigation and precipitation washes them into local waterways severely impacting the environment for recreational fishing. This form of pollution accounts for about one-half of the nutrients that are harming the Chesapeake Bay. In my opinion, agricultural runoff from commercial farming is the greatest pollutant harming the Chesapeake Bay, destroying the ecosystem and devastating our recreational fishing.

## **The current situation and the impact to recreational fishing:**

Just 13 years ago you could catch crabs and fish off the docks in ocean city all day long, but now fishing regulations are strictly enforced. There are limits put on the amount of fish you can catch and some species in the Chesapeake Bay are becoming extinct. The pollution throughout the Chesapeake Bay habitat is affecting the abundance of aquatic life. This pollution can also very dangerous to our health because it runs into our water supply. The USGS recently released a report showing that nitrogen and phosphorous concentrations have improved at a majority of the sites in the Bay watershed since 1985. However, there has been less significant improvement over the last 10 years. Since 1985, nitrogen concentrations have decreased at about two thirds of the monitoring sites.

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But over the last 10 years improvements occurred at less than half of the sites with the majority of the sites having no significant change. In general, sediment concentrations have shown less improvement overall than nutrients. Sediment samples have been taken and both long term and short term data shows that they have worsened at about a quarter of the sites. As a result, evidence shows that these nutrients flow into the bay from wastewater treatment plants and from fertilizers spread throughout the watershed. Meanwhile, excess sediment comes from development, runoff from farm lands, and erosion of stream channels. Too many of these nutrients rob the Bay of oxygen needed for the fish and other living organisms. In addition to this sediment and algae cloud the waters, disturbing the underwater plants that are crucial for aquatic life. Overall the Chesapeake Bay's health is not flourishing like it once did. Agricultural runoff is affecting the Chesapeake Bay by damaging the habitat. Grass beds are diminishing and fish and wildlife are dying. Maryland Blue crabs and Striped bass are dying out.

### **The primary causes:**

The primary causes for this runoff are irrigation, fertilizers and animal waste management. Both animal waste and fertilizers put tons of nutrients into the soil. When there is an excess of these nutrients and it rains, this runoff flows to the irrigation systems. From there these " nutrients" can find its way to small tributaries which run to large estuaries like the Chesapeake Bay. To the Chesapeake Bay these nutrients now become poison. Farm run-off is a form of pollution in which certain chemicals in the soil are washed into major tributaries that feed into the Chesapeake Bay. Although farmers claim that

there are bigger contributors, there is much evidence that farm run-off is the leading cause to the damage done to our Chesapeake Bay. According to the Chesapeake Bay Foundation Agricultural run-off is responsible for 40 % of the damage. Water discharges can contain the phosphorus fertilizers and residues of pesticides that were used during the growing season, which can cause serious water quality problems.

### **A break in the food chain:**

Farming is an obvious necessity to support our race and to do this we need an enormous supply of food (plants animals). According to the EPA, " The United States has more than 330 million acres of agricultural land that produce an abundant supply of food and other products". An abundance of food is a good thing but people don't take into consideration that there are byproducts of growing crops and raising animals. " Perdue, the country's second-largest chicken producer, trucks millions of gallons of waste a year from its Delaware slaughterhouses into Maryland, where the loads are injected into fields. Delaware limits such dumping, but Maryland does not". This most impacting type of pollution that is affecting the Chesapeake Bay is agricultural farm run-off. If this pollution is not stopped the ecosystem will be destroyed and many fish like the very popular striped bass will become extinct. We thrive from these aquatic species and look forward to eating them in the summer. These fish are a huge part of our food source and action needs to be taken to prevent this farm run-off pollution from damaging our cherished jewel, the Chesapeake Bay. A counter to commercial farmers claim, agricultural run-off is the greatest pollutant to the Chesapeake Bay. Commercial farmers are oblivious to that fact that their

farms are contaminating and destroying the Bay and in some cases has harmed us. One of the most important fish species is the Atlantic menhaden because of its link to many levels of the Chesapeake Bay food web. While menhaden populations along the Atlantic coast appear to be sufficient, there is growing concern about low regional abundance specifically in Chesapeake Bay. Low menhaden abundance creates a reduced food supply for the striped bass, bluefish, weakfish and other recreational species. Recent studies suggest that the Bay's striped bass are suffering from poor nutrition, which may be leading to slower growth rates and higher susceptibility to various diseases.

## **Finger-pointing**

A Perdue spokesman claims that the families that raise chicken for Perdue are independent farmers and what they do is not their responsibility. Not only that but these farmers say that the powerful food companies are controlling them. Neither one of them is accepting accountability in this act of polluting the Chesapeake Bay. A spokeswoman from The Maryland Department of the Environment says that, " The agency has found high bacteria levels in ditches draining from the property...these eventually drain into the Pocomoke River, a Chesapeake tributary." Everyone agrees that the highest priority is to restore the Bay's resources and that one way to do this is to improve water quality by reducing nutrients. The farm lobby maintains that the primary offenders of Bay pollution are Municipal wastewater treatment plants, stormwater runoff and sediment from urban development. Farmers contend that the major factor in pollution comes from non-point sources. What they fail to accept is that they are the single greatest polluter

and are also contributors to the non-point source pollution. Nonpoint sources are those sources that cannot be traced back to a single and specific origin. Nonpoint sources of nutrients contribute about 60 percent of the nitrogen that reaches the Bay. The largest single source is agricultural runoff. Nitrogen loading results from application of chemical fertilizers, livestock manure, and sewage sludge on fields as well as from animal wastes that run off pastures and feedlots. Other nitrogen sources include atmospheric deposition to tidal surface waters, adjacent ocean waters, and the watershed, as well as runoff from urban and suburban lawns, roadways, and other developed areas to creeks and tributary rivers. The diagram below is evidence that agricultural runoff from farming and farm related activities is the largest producer of pollution to the Bay.

### **The numbers don't lie:**

The agricultural crop production and concentrated animal feeding operations (CAFOs) are devastating the Chesapeake Bay and recreational fishing by adding pollution to the Bay. With 22 percent of the watershed in agricultural production, agriculture is the single largest source of pollution. Traditional farming requires a large amount of fertilizer and often results in high levels of sedimentation due to the plowing down to bare soil. Areas in the Chesapeake watershed rank in the upper 10 percent nationally in the use of nitrogen fertilizer. When uncontrolled, fertilizers run off into streams, rivers and sewers rather than absorb into the ground. Some simple ways to decrease the impact of agriculture on the Chesapeake Bay but farmer claim that it is too expensive for their small operations and the larger operators claim that it's the responsibility of the small farms. While farmers near the

Chesapeake Bay watershed, are under increased pressure and are incentivized to produce greater crop volumes for use as fuel according to the Energy Independence and Security Act of 2007, the increased corn production will result in an additional 8 to 16 million pounds of nitrogen pollution and 0.8 to 1.5 million pounds of phosphorus pollution into the Bay annually. At CAFOs located along Maryland's eastern shoreline, poultry manure is produced in large volumes. Large chicken farms in the area now number more than 800, house approximately 570 million chickens, and produce 650 million pounds of manure each year. Just 15 years ago, a bloom of the harmful algae *Pfiesteria* caused nutrient enrichment from manure discharged into the Bay. This bloom killed various species of fish and wildlife and was linked to human neurological problems in people exposed to the *Pfiesteria* toxins in the water.

### **In Conclusion:**

The greatest pollutant harming the Chesapeake Bay is agricultural runoff from commercial farming. It is destroying the ecosystem and devastating our recreational fishing. The Chesapeake Bay watershed is 64,000 square miles big! It includes parts of Maryland, Virginia, Pennsylvania, Delaware, West Virginia, and New York. The whole city of Washington, DC is in the Chesapeake Bay watershed. The Bay itself is about 200 miles long, stretching from Havre de Grace, Maryland to Norfolk, Virginia. It is 35 miles across at its widest point, and 3.4 miles across at its narrowest point and holds more than 18 trillion gallons of water. The Chesapeake Bay landscape is changed rapidly. A lot of coastal marsh land has been destroyed by development. Many of the streams and creeks have been paved over or

have dried out due to erosion. The Bay waters are cloudier. The water used to be so clear that people could see things that were 2 meters below the surface. Now in some places it's not even possible to see things 5 inches below the surface. Much of the Bay grasses have died. When soil erodes, it can wash into the Bay, making the Bay waters very cloudy. This makes it hard for sunlight to get to underwater plants. Underwater grasses are important to the Chesapeake Bay for many reasons. They provide shelter from predators for young crabs and fish that can't really protect themselves. They provide food for lots of different species of waterfowl. They produce oxygen that the fish need to survive. And they help prevent erosion, because their roots hold soil together so that it doesn't wash away. The main problem facing the Bay is agricultural runoff. There is too much nitrogen and phosphorous washing into water. Nitrogen and phosphorous are two nutrients that make algae grow out of control. When algae grows out of control, it makes it hard for underwater grasses to grow, and it also uses up a lot of oxygen that other creatures in the water need to breathe. The government made it illegal for people or companies to dump harmful things into the Chesapeake Bay but farmers say it's there's no specific proof to prove that any particular farming operation is the main culprit of pollution. This research paper sought to expose the facts and provided a compelling argument that agricultural runoff from large-scale operations was the top producer of pollution in the Bay.

## **Cited Sources**

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