Weather and Human Affairs

Mr. Wirts

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Fertilizers, Weather, and the Chesapeake Bay

And What We Can Do About It

The Chesapeake Bay is suffering from a variety of assailants, mainly fertilizers, pesticides, and excessive nutrients, but if we work together, we can fix it.

To begin solving a problem, first the problem must be fully understood. The Chesapeake Bay is being polluted because of two causes: industrial agriculture and lawns. Both use the two major pollutants that enter the bay, fertilizer and pesticides. The fertilizer is nutrient rich, brimming with nitrogen, phosphorus, and potassium. You may wonder how nutrients are bad for the bay and rivers, when all they do is help plants grow? Well, the answer lies in the question. Usually the algae in the bay grows in quantities beneficial to all and sundry, however, when huge amounts of nutrient runoff is flooded into the bay, the algae bloom in outrageous amounts, blocking all light and using all the oxygen necessary for the bay creatures to survive. Back in the day, before columbus and his criminal crew came and completely destroyed any previous balance, there were many trees near the bay, which filtered any excess nutrients, and could probably have filtered more than the Conowingo dam could ever produce, but now all that lies in the bay watershed is agricultural land and developed cities with lots of lawns that catch none of the nutrients, so they go flooding into the bay every time a small storm blows.

It is clear why farms cause runoff, but why lawns? Every American wants a nice big green neatly mowed lawn, right? Well, that is the problem. To keep a lawn mowed, it causes runoff. To keep a lawn green, it needs fertilizer. To keep a lawn weed free, you need pesticides. Because of this, Americans use millions of tons of fertilizer yearly for lawns alone. As of a couple years ago, 300 million pounds of nitrogen were going into the bay yearly, and they meant to cut it by half by 2010. By 2019, 265 million tons of nitrogen were going into the bay yearly. Reports by Environment Maryland show as of 2009 turf grass was the largest crop in Maryland. 1.3 million acres of turf were planted in 2009, and all other crops combined could only equal to 1.5 million acres. Alternatively, 1 gas push lawn mower produces the same amount of pollution as 10 gas cars. Farmers have nutrient runoff rules that restrict the amount of fertilizer use, but that is hard to do with individual lawn owners. Non-farm fertilizer sales are catching up to farm sales. Lawnowners buy approximately 86 million pounds of fertilizer yearly. Do you really think that your nice lawn is more important than your children's prosperity?

Agriculture is the single largest cause of waterway pollution, and most probably, cancer and other pesticide related maladies. The three common issues are tillage, fertilizers, and pesticides. Fertilizers are overused and fields over irrigated. In 2005 the Bay Program found that agriculture contributed to 42% of nitrogen, 5% of phosphorus, and 60% of sediment entering the bay and its waterways. Overirrigation causes extra water with nutrients and pesticides to go into waterways and seep into groundwater, coming up in wells and causing variable incurable ailments directly related to pesticides. The pesticides are also a major cause in the deaths of creatures in the bay and connected waterways. Scientists have proven that fish exposed to pesticides developed serious health issues or died. Pesticides were seen to cause intersex conditions in fish and impaired reproduction in fish eating birds. Books like Silent Spring by

Racheal Carlson have proven that pesticides also affect humans. Tilling is another cause of bay attenuation, mainly from erosion. Farmers till the ground before planting to aerate the soil, and apart from the fact that this doesn't help, rains wash away the soil deteriorating the land and ending up in the bay.

The Environmental Protection Agency made a report, *Guidance for Federal Land Management in the Chesapeake Bay Watershed*. It says that livestock manure accounts for 19% of nitrogen and 26% of phosphorus contributing to the bay's deteriorating algae situation. The report also states that chemical fertilizers account for 17% of nitrogen and 19% of phosphorus in the bay.

If you are feeling horrible for what we(humans collectively) have done, like you should, there are a few ways we can delay our impending doom. The first thing is using less or no fertilizer, and using compost instead, and certainty don't use fertilizer before high wind or rain. Cut your beautifully manicured lawn 3" high, elsewise it will be your downfall. Use a certified lawn service or remove your useless money drain of a lawn and plant a garden there instead, or maybe some nice sorghum. While lawnowners have the choice of saving the bay, farmers in some states, such as watershed states, do not. The Chesapeake Bay Program works with farmers to do some things that will temporarily delay the bay's demise. They encourage minimum tilling to reduce erosion, which is called conservation tilling. Or, you could maybe not till, as it is proven to have negative effects. Some farmers use cover crops, to catch runoff nutrients and pesticides, soil and nutrient and pesticide rich water. They also prevent insects, weeds and diseases. When the cover crops die, they add organic matter to the soil. They also plant plants along the edges of farms to prevent runoff and give animals home close to the pesticides that will be there downfall. A part per million a day and they won't be ok.

In conclusion, you don’t need a lawn. Just plant some sorghum. It will be better for you, the bay, and the penguins.

Works Cited

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