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Fast Facts: Dead Zones



Leading cause of dead zones is eutrophication from nutrient pollution caused by agricultural runoff



Approximately 200 distinct dead zones in the United States



Costs the tourism and fishing industries an **estimated** \$82 million per year

EXPLAINER

Eutrophication: What It Is and How Crop Insurance Makes It Worse

July 2024

What is Eutrophication?

Eutrophication is the process of higher than normal loads of nutrients entering waterways, most commonly nitrogen and phosphorus.

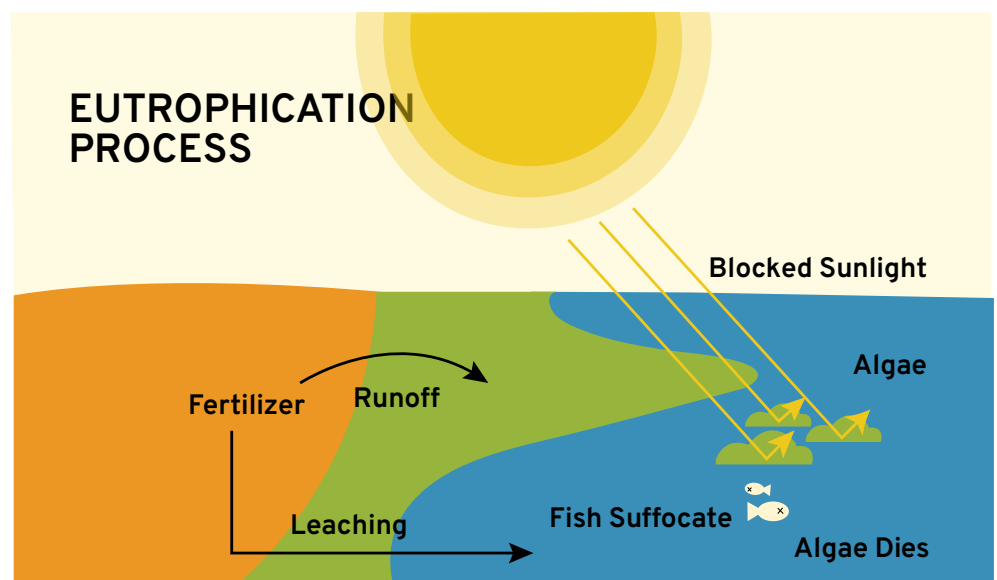
Nutrient rich **pesticides** and **fertilizers** used to grow crops are among the leading causes of eutrophication, which causes the development of dead zones. High in phosphorus and nitrogen, these chemicals enter waterways through runoff and groundwater leaching.

Negative Effects of Eutrophication:

- Algal blooms and plant overgrowth in the water, which can suffocate local aquatic life, create toxins, and impact the wider food chain
- Toxic algal blooms, such as blue-green algae, which can harm marine life and prevent recreational activities
- Tainted drinking water and other public health risks
- Hypoxia—a lack of oxygen in the water—which causes **dead zones**: areas with reduced levels of oxygen in the water making it impossible for marine life to survive
- Economic harms to fishing and tourism industries
- Economic impacts **estimated at \$2.2 billion annually** in U.S. freshwaters alone

How are Dead Zones Created?

As algal blooms die, bacteria in the water **uses up oxygen** to break down the algae. Marine life cannot survive without sufficient oxygen in the water and either relocates or, for immobile marine life, dies. The blooms also block the sunlight necessary for some plants and bottom-dwelling species.





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At more than 3,000 square miles, the Gulf of Mexico dead zone is the largest in the United States and the second largest in the world.

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Focus on: Gulf of Mexico Dead Zone

At more than **3,000 square miles**, the Gulf of Mexico dead zone is the largest in the United States and the second largest in the world. The **primary cause** is agricultural runoff from the Upper Mississippi River Basin, with an **estimated** 60-80 percent of the nitrogen runoff causing the dead zone. Much of this is fertilizer used to grow corn. During the peak of the farming season, nearly **8 million pounds** of nitrates flow through the waterways to the gulf.

Fast Facts: Toxic Blue-Green Algae

- Otherwise known as cyanobacteria
- Produces toxins which can harm people, animals, and plants
 - People may **experience** vomiting, diarrhea, skin rashes, eye irritation, coughs, sore throats, headaches, and, in extreme cases, neurological damage
 - Children are particularly **susceptible**, and small animals have died from exposure
 - Not all blue-green algae are toxic, but still make water unfit for fishing or swimming
- During toxic algal blooms, advisories and closures are often implemented to stop people from boating, swimming, and fishing in affected waters
- Thrives in nutrient-rich, warm, shallow waters
- The best way to reduce algal blooms is to decrease the amount of phosphorus and nitrogen getting into the water

What Role Does Federal Crop Insurance Play in Eutrophication?

The Federal Crop Insurance Program (FCIP) has a **substantial variety** of taxpayer-funded subsidies and grants, most of which go to large agribusinesses producing only a handful of crops.

By the nature of its payment structure, the FCIP unintentionally incentivizes an overuse of pesticides and fertilizers, while simultaneously reducing natural barriers to their runoff. It also unintentionally encourages planting in environmentally sensitive areas.

The FCIP does very little to incentivize or require sound environmental practices. One of the few programs, the Environmental Quality Incentives Program, spends only 14 percent of its **funding** on conservation practices.

What Changes to the FCIP Can Help the Problem?

- Prioritize sustainability and mitigation efforts to the benefit of the environment, the economy, and Americans' health
- Incentivize the use of cover crops which absorb excess nutrients
- Incentivize the restoration of natural ecosystems including estuaries and wetlands, which serve as natural filtration methods
- Incentivize the use of buffer zones
- Encourage better management of fertilizers and pesticides
- Encourage better soil health