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October 1, 2020



Food and Water

This is the 5th edition of the Making Every Day Earth Day 2020-21 newsletters.
([Read Previous editions here](#))

Water is life. All life depends on the availability of water. Yet, around the world, including here in Iowa, people struggle to live with too much, too little, and water sources that are too polluted. This October and November, our publication will address urgent water issues such as:

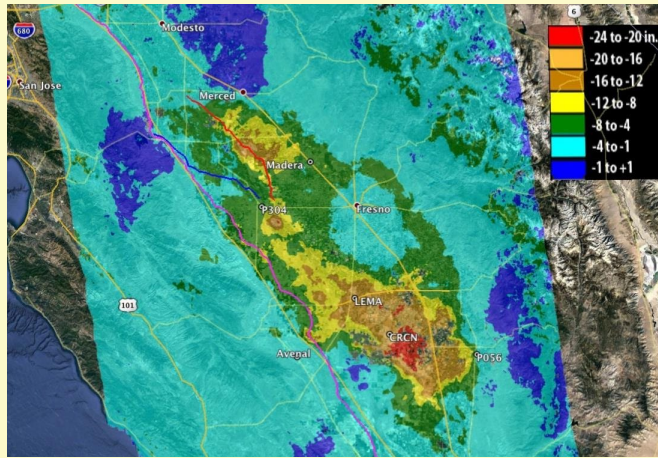
- Dead zones growing globally, driven by the pollution generated from human food production.
- Sea levels rising as ice sheets melt, threatening the homes of 150 million people in the next three decades.
- Droughts deepening, and deadly floods and extreme weather events becoming more frequent due to climate change.
- Growing human populations around the world facing dire food and water scarcity.

Only a tiny fraction of water on Earth is freshwater (less than three percent). All flora and fauna rely on this finite resource. Agriculture accounts for 70 percent of global water withdrawals. Agri-businesses increasingly exploit surface water sources and aquifers, drilling wells and pumping groundwater to irrigate crops at massive scales, even in arid and drought-prone regions.

Almond trees, for example, are not drought resistant, so California's farmers tap underground aquifers to keep their groves alive. Such measures, practiced at scale, are costly to California's water supply, yet continue to enable the US to dominate the global almond market.

"Since the 1920s, excessive pumping of groundwater at thousands of wells in California's San Joaquin Valley has caused land in sections of the valley to subside, or sink, by as much as 28 feet (8.5 meters). This subsidence is exacerbated during droughts, when farmers rely heavily on groundwater to sustain one of the most productive agricultural regions in the nation."

—[NASA](#)



If food crops and animal farming continue to be primarily driven by economic gains instead of prioritizing sustainable resource use, food and water scarcity is likely to become more widespread, frequent and severe.

Water quality is on the minds of Iowans. As a leader in the production and processing of beef, pork and chicken, the majority of farmland in Iowa is used for either large-scale confined animal feeding operations (CAFOs) or the cultivation of crops for animal feed (corn, soybeans, alfalfa and hay). Both are water-intensive, and during dry seasons such as the drought Iowa suffered this summer, freshwater shortages are becoming a major concern. Iowa's municipal utilities are struggling to obtain and adequately treat enough water for everyone to use and consume.

Due to high levels of water contamination from animal and plant-based agriculture in our state, Iowa now suffers from a toxic algae bloom on our surface water that has detrimental ecological impacts, reduces Iowans' water supply, and negatively affects water recreation and fishing. These algae blooms also contaminate waters with toxins, like microcystins, which can cause vomiting, stomach pain, and even pneumonia.

The large quantity of animal farming in Iowa causes high levels of nutrients and other harmful contents from animal waste and crop chemicals to enter our streams and rivers. Thankfully, there are many calls for the State of Iowa to better study, treat and prevent ecologically destructive and human-health endangering levels of farm runoff in the state.

"Manure leaks and spills result in fish kills, nitrate and ammonia pollution, antibiotic-hormone and bacterial contamination, algae blooms, impaired waterways and closed beaches. CAFO neighbors suffer increased childhood asthma and adult asthma, bronchitis, airway obstruction, nasal and eye irritation. Animal agriculture still consumes, largely for growth promotion, over 70% of medically important antibiotics. This practice promotes antibiotic resistant infections."

—"[Iowans want action to limit concentrated animal feeding operations and their harmful effects](#)" (February 18, 2020) by James Merchant & David Osterberg, *Des Moines Register*

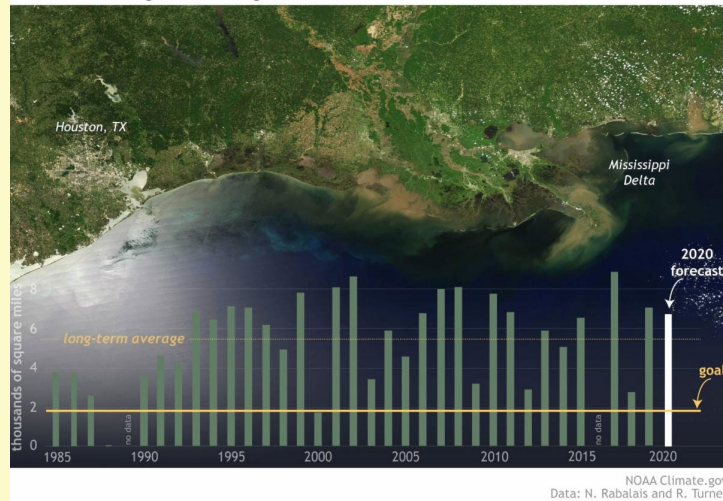
Beyond Iowa's borders, the problem continues to spread and grow; Iowa is responsible for approximately 50% of the agricultural pollution that enters the Mississippi River. Water pollution from Iowa's farmlands contaminate waterways the length of the Mississippi and Missouri rivers, accumulating all the way to the Gulf of Mexico where it wreaks havoc with the ecosystem on an annual basis.

"The annual Gulf of Mexico dead zone is primarily caused by excess nutrient pollution from human activities in urban and agricultural areas throughout the Mississippi River watershed. When the excess nutrients reach the Gulf, they stimulate an overgrowth of algae, which eventually die and decompose, depleting oxygen as they sink to the bottom. The resulting low oxygen levels near the bottom of the Gulf cannot support most marine life.

Fish, shrimp and crabs often swim out of the area, but animals that are unable to swim or move away are stressed or killed by the low oxygen. The Gulf of Mexico dead zone occurs every summer."

—[NOAA](#)

NOAA forecasts larger-than-average Gulf of Mexico 'dead zone' for 2020



Support Our Work

Steps We Can Take

Water Footprints

Taking water usage into account when deciding what produce to buy is an important step we can all take to limit our own water footprint. Food that requires vast amounts of water to produce can easily be limited whilst still maintaining a healthy and varied diet.

In previous editions of this publication, we have recommended eating less animal-based food as a way to mitigate climate change, and experience health co-benefits. Reducing our consumption of meat, especially from CAFOs, also lowers our water footprints.

Advocate for Conservation Practices

Restoring natural resiliency is an imperative for the health of farms and people. With rainfall in Iowa expected to increase due to climate change, conservation practices such as farm ponds, wetland restoration, reconnecting natural flood plains, and planting native perennial cover plants can all help to hold water during heavy rainfall. These practices also help retain topsoil, as well as filter out nitrates, phosphorus, and other agricultural pollutants.

Stay abreast of the Iowa Environmental Council (IEC) work, such as their [Water and Land Stewardship Program](#).

Rally Iowa Representatives to Improve Water Management

The Iowa Department of Natural Resources (DNR) has suffered major budget cuts. State funding for the DNR must increase so that it can play a more proactive role in managing the crises we are facing. The IEC suggests that the DNR be officially designated as the body to oversee Iowa's compliance with resource conservation legislation such as the Clean Water Act.

More funding is also needed for the Leopold Center for Sustainable Agriculture, at Iowa State University. Its establishment was a result of the Iowa Groundwater Protection Act (1987), and our need for it has only increased since then.

"As users and consumers of water we all must take responsibility in protecting our water supplies. Prevention of contamination is better than a cure for illness."

—[Safe Drinking Water Foundation](#)

Learn More

["Desertification In North America"](#) (n.d.) *JRank Science & Philosophy*

["Des Moines Water Works Calls For Water Conservation In Face of Drought"](#) (September 1, 2020) *University of Iowa*

["U.S. Scientists Work to Stave Off Desertification"](#) (June 15, 2020) *ShareAmerica*

["Food's Big Water Footprint"](#) (April 25, 2020) *Water Footprint Calculator*

["Long View of the Mississippi River Delta"](#) (April 26, 2019) *NASA Earth Observatory*

["Droughts exposed California's thirst for groundwater. Now, the state hopes to refill its aquifers"](#) (April 16, 2020) *Science*

["People with Private Water Wells Urged to Get Them Tested"](#) (July 26, 2019) *Radiolowa*

["Environmental Groups Suing for Raccoon River Water Quality"](#) (April 11, 2019) *University of Iowa*

["2019 State Agricultural Overview: Iowa"](#) [webpage] *US Department of Agriculture*

["Nitrates in Drinking Water May Be Tied to 300 Cases of Cancer in Iowa Each Year, Study Shows"](#) (June 27, 2019) *Des Moines Register*

["Almond Orchards in California: Healthy or Hazardous?"](#) (September 5, 2018) *Columbia University*

["Pediatric Environmental Health Toolkit for Providers"](#) (2017) *Physicians for Social Responsibility*

["Water pollution from agriculture: a global review"](#) [executive summary] (2017) *Food and Agriculture Organization and International Water Management Institute*

["Is it nuts to grow almonds during a drought?"](#) (April 30, 2015) *PBS NewsHour*

["Farm Runoff: Down the Mississippi to the Gulf of Mexico"](#) (2009) *North Carolina State University*

["Nitrate: What Health Care Providers Should Know"](#) (n.d.) *Physicians for Social Responsibility*

[Agriculture in Iowa](#) (n.d.) *Iowa Physicians for Social Responsibility*

[Physicians for Social Responsibility - Iowa Chapter](#)

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