

Factory Farming's Impact on the Ocean

From [Maggie Nunn, New Roots Institute](#)

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Industrial animal agriculture is threatening the health of the ocean, which much of Earth's human and animal life depends on.



The Ocean

When you visit the ocean, the idea that you are swimming through or looking out at a single mass of water that covers [71 percent of the Earth](#)—by far most of our planet's surface—may not be your first thought, if it's a thought at all. We tend to underestimate the ocean's importance and how human activities have decimated biodiversity and critical ocean functions because for many of us these issues are out of sight, out of mind. However, the health of the ocean is exceedingly important, with more than [3 billion people](#) relying on it and its provisions to make a living, not to mention the [hundreds of thousands](#) of known marine species and the [91 percent](#) of species yet to be classified.

What is Factory Farming?

[Factory farming](#), also known as intensive animal agriculture, is the practice of raising livestock in extremely crowded conditions to minimize expenses and maximize profit. Factory farming is largely hidden from the public. We only see the advertisements and finished products in our grocery stores, restaurants, and media; various forms of animal flesh and reproductive secretions. We rarely, if ever, see the conditions in which these products were made, or their effects on the environment.

Meanwhile, over the last 50 years, meat production has [more than tripled](#) globally with the average American eating around [270 pounds](#) of meat per year. It is extremely important that we understand the detrimental impacts factory farming has on our environment as the world continues to demand meat.

Eutrophication (and Dead Zones)

Runoff is a normal and natural phenomenon that will occur with or without human interference. However, when inadequate or unregulated farming practices allow for farm waste and chemical fertilizers to be sprayed across land and eventually seep into bodies of water, problems begin to arise—not only for humans who may rely on that freshwater or live nearby, but also for the [marine life](#) that ends up with what flows downstream. [Excess nutrients](#) from the fertilization of the massive amount of crop fields required to feed livestock are prone to leaching into the ground or evaporating into the air, which can also reach the ocean by atmospheric deposition.

Eutrophication occurs when nutrients (particularly [nitrogen and phosphorus](#)) enter a body of water, like the ocean, and lead to the excessive growth of plants. Algae in particular prefer these nutrients and will form large “blooms” that linger on the water’s surface blocking sunlight to the ocean below. Most other life forms will die or evacuate, leaving the algae to take their place. When the algae die, they sink to the floor of the ocean and begin to decompose, depleting the oxygen that is dissolved in the water, until there is truly not enough for anything to survive. These are appropriately named “dead zones.” How long dead zones remain depends on the exact conditions, but it can range from hours to years.

While [fertilizer runoff](#) is a problem in all forms of agriculture, animal agriculture is a major contributor because of the massive amounts of crop fields required to feed livestock. The runoff from both animal agriculture and feed crop operations are significant contributors to nutrient pollution, being responsible for [78 percent](#) of the world’s eutrophication in both oceanic and freshwater. Fortunately, given enough time most dead zones can eventually recover, but addressing the nutrient pollution at its root is critical if we want to protect these valuable ecosystems

Aquaculture Fish Farms

[Aquaculture](#) is the water-based counterpart to factory farming on land, and involves the commercial breeding of fish within floating pens or facilities built on land. Similar to factory farms with land animals, fish farms pack the animals tightly together with little-to-no management of waste. This waste includes fecal matter as well as substantial amounts of antibiotics given to them to prevent inevitable disease in the crowded conditions

Keeping fish in such high density also impacts the ocean by reducing the amount of [dissolved oxygen](#) in the area, largely due to the excessive amount of waste that builds up around these operations. This leads to eutrophication and contributes to the ocean dead zones mentioned earlier.

Taking fish from their natural environment disrupts those systems, but placing them in a new environment that they are not native to disrupts *the new* environment as well. Most of us are likely familiar with the idea of a [circle or web of life](#), where species fit into specific ecological roles. Through that lens, we can better understand how each individual species plays an important, even if seemingly subtle, role in their ecosystem. Furthermore, we can see how ecosystems affect each other and are ultimately all connected, highlighting how delicately balanced these systems are and how easily they can be damaged by even minor changes.

Ocean Acidification

[Ocean acidification](#) is a long-term process of decreasing ocean pH, measured by an increase in the ocean's acidity. The average pH of the ocean today is about 8.1, which is a 0.1 decrease from the average pH of the ocean pre-industrial revolution. While seemingly small, spread over the entire ocean that difference can have big consequences. Much ocean wildlife is sensitive to pH changes and not fit to thrive, or even survive, in such acidic waters.

Ocean acidification is mainly a result of increased carbon dioxide emissions. The ocean is a critical part of the carbon cycle as it absorbs carbon dioxide from the atmosphere. However, because of the excess carbon dioxide currently in the atmosphere, the ocean absorbs more which upsets the natural balance. For example, many marine species use [calcium carbonate](#) to form their shells, which becomes less readily available as water acidifies.

According to a recent study published in the journal *Nature Food*, animal agriculture is responsible for [57 percent](#) of total agricultural emissions and about [15.4 percent](#) of global greenhouse gas emissions. This is staggering, given that this sector alone emits nearly as much as all forms of fossil fuel-burning transportation in the world combined.

What Can We Do?

Factory farming practices contribute disproportionately to climate change and exaggerate its impacts. As long as ocean pollution and factory farming continue on a business as usual path, the environmental impacts will continue to grow more severe.

Luckily there are some straightforward solutions we can implement immediately. Each of us can limit our contribution to factory farming by exploring plant-based alternatives whenever feasible. The industry thrives on consumer demand. There are even some great alternatives out there for seafood lovers now- try tuna from [Jinka](#) or make your own [smoked salmon carrot lox](#). [Good Catch](#) has a vast line of alternatives to help fulfill your desire for seafood without contributing to the destruction of our oceans.

If you are lucky enough to live near the ocean, go see it! While swimming and lounging at the beach are fantastic activities, I suggest visiting a lighthouse, sitting on a dock, or even sea kayaking. Viewing the rocky coasts and barnacled piers from new perspectives can help us better grasp the ocean's immeasurable value beyond enjoying a sandy beach and warm-ish waters. Exploring and exposing ourselves to the breadth of what the ocean has to offer will inevitably increase our compassion for it.

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