# THE ENVIRONMENTAL IMPACTS OF SLAUGHTERHOUSES: FACT SHEET

Slaughterhouses are a key source of water pollution and environmental degradation. Laws regulating these facilities are weak and poorly enforced, for the animals killed in the process, the workers putting body and limb on the line, and the environmental health and safety of neighboring communities. From direct disposal of pollutants to toxic runoff and water usage, slaughterhouses are significantly impairing North American rivers and streams and further endangering aquatic wildlife.

## BY THE NUMBERS

Due to American demand for meat, the number of slaughter facilities is steadily increasing, with more than 900 livestock slaughter facilities operating under federal inspection, 3,000 federally inspected poultry and processing plants (some process meat but do not slaughter), and about 1,900 state-regulated or custom slaughter facilities.[1,2] Approximately 25 million farmed animals in the United States are slaughtered every day.

Per capita meat consumption in the United States is estimated at 222.4 pounds annually.[3] Approximately 9.76 billion farmed animals are processed per year into 105 billion pounds of beef, pork, chicken, turkey, mutton, veal and lamb. In 2021 that included 55.9 billion pounds of red meat processed, with a record high of 28 billion pounds of beef.[4] Poultry slaughter has nearly doubled in recent decades as chicken consumption has skyrocketed.[5,6] The steady increase in meat production and slaughter facilities means an increase in harms to the health of watersheds and wildlife.

## WATER USE

Each year U.S. slaughterhouses use billions of gallons of water to process and render animal carcasses. For example, water use in processing red meat includes cleaning stockyard and pens, hide removal, scalding, dehairing, intestine handling, rendering, general cleanup, and meatpacking. Water used in these facilities is often contaminated with processing waste and disposed of into waterways.[7]

- For poultry slaughter, water usage occurs during scalding, de-feathering, evisceration, carcass washes, pre-chilling and chilling. Average water usage for slaughtering poultry is over 3.5-10 gallons of water per “broiler” chicken and 11-23 gallons of water per turkey.[8]

- For beef cattle, water consumption occurs in every step of the slaughter process, from live receiving to cleaning and sanitation. Average water usage for slaughtering cattle is at least 150-450 gallons per animal.[9]
- Slaughtering requires large amounts of water for cleaning and sterilization. The resulting wastewater contains concentrated agricultural compounds including fat, oil, protein and carbohydrates, which are biodegradable but require a high biological oxygen demand to biodegrade.
- The main polluting agent in slaughterhouse wastewater is blood. Wastewater also contains insoluble organic and inorganic particles polluting waterways.

## POLLUTION

U.S. slaughter facilities produce millions of pounds of pollution annually. These facilities discharge water contaminated with blood, oil, grease and fats, ammonia, dangerous fecal bacteria, and excrement.

- In 2018 slaughterhouses released over 55 million pounds of toxic substances into waterways.[10]
- According to EPA data, meat and poultry processing facilities are the second-largest industrial point source of nitrogen into waterways, discarding 27%. [11,12,13,14]
- Slaughterhouses are also a top producer of phosphorus, generating 14% of the phosphorus discarded into waterways.[15]
- Environmental Integrity Project's study of 98 large slaughterhouse facilities found that the median slaughterhouse produced an average of 331 pounds of nitrogen a day, which is equivalent to the nitrogen pollutants in the untreated sewage of 14,000 people.[16]
- Slaughterhouse wastewater can contain antibiotic-resistant strains of E. coli, fueling the spread of antibiotic-resistant bacteria.
- Without a clear pretreatment standard, some slaughterhouses discharge to public wastewater-treatment plants without treating waste, worsening overflow at treatment plants.
- Even with new technologies available for mitigating pollution, the past two decades have seen an increase of over 25% in direct disposal of slaughter pollutants into waterways due to weak environmental protections.
- More than 60% of the waterways that suffer the pollution from the biggest slaughterhouses are too polluted for drinking, swimming, and fishing.[17]

## SPECIES ENDANGERMENT

Many aquatic species are already struggling to survive in the face of climate change, drought and rising temperatures, bringing excessively low water, low oxygen, hotter water, and concentrations of harmful substances. Toxic algal blooms and chemical contamination added to existing pollution can destroy entire ecosystems. Poor oversight, regulation and enforcement of slaughter facilities — many of which have low environmental standards that are decades out of date — have created a significant threat to the survival of aquatic animals from this pollution.

- All 50 states face harmful algal blooms from nitrogen and phosphorus pollution that can sicken or kill people and animals exposed to these extremely dangerous toxins.

- According to the Environmental Protection Agency, slaughterhouses often dump wastewater directly into rivers and streams.

- Thousands of slaughterhouses in the U.S discharge into waterways, including Chesapeake Bay, the nation's largest estuary, where nutrient runoff suffocates marine life such as crabs, oysters and fish (such as yellow perch and largemouth bass) and can create mass "fish kills."
- The pollution-driven decline of yellow lance mussels (which filter algae), marbled salamander, and American eels in and around Chesapeake Bay is endangering aquatic ecosystems.
- More than 1,000 facilities store waste in onsite lagoons or spread it on land. Storms can cause lagoons to overflow or wash waste off fields, contaminating waterways and imperiling wildlife.
- A pork processing plant owned by JBS in Illinois spilled 29 million gallons of hog waste in 2015, killing nearly 65,000 fish.
- Smithfield's Tarheel Plant in North Carolina, the largest pig slaughterhouse in the United States, discharged 1,759 pounds of nitrogen a day on average into the Cape Fear River. In 2018 it was ranked the second worst polluter by the Environmental Integrity Project's report on slaughterhouse pollution.
- Compounds found in slaughterhouse wastewater, such as chromium and chemicals from cleaning products, cause changes in aquatic ecosystems that endanger fish and plant life.
- Nitrogen and phosphorus from slaughterhouse waste can cause the growth of algae that depletes the oxygen in water, creating dead zones in streams and rivers. The Gulf of Mexico dead zone is almost 7,000 square miles.
- Decomposing algae results in hypoxia, depriving marine life of oxygen. Some aquatic species, such as shrimp, suffer stunted growth.

## EQUITY AND JUSTICE

Slaughterhouses are disproportionately located in Black, Indigenous, Latino, immigrant and low-income communities. Facilities that release toxic industrial waste directly into waterways deeply impact these underserved and underrepresented populations.

- The EPA has reported that 74% of slaughterhouses that discharge pollution directly into rivers and streams are within one mile of under-resourced communities, low-income communities, or communities of color.[18]
- Nearly half the slaughterhouses in the 2018 Environmental Integrity Project study were in communities with more than 30% of residents at or below the poverty line, which is twice the national average. One-third of these facilities were in communities where at least 30% of the population are people of color.
- Air and water pollution from slaughter facilities leads to health problems including headaches, breathing and heart difficulties, and irritation in the nose, eyes and throats. Residents may be unable to open windows or go outside due to dangerous toxins in the air.[19,20, 21]
- Algal outbreaks can make water unsuitable for swimming and drinking by producing cyanotoxins that are challenging to fully filter out with waste-treatment methods.
- Slaughterhouse employees are often Black, Indigenous, Latino or immigrants, vulnerable to exposure and workplace safety violations, while slaughter, rendering and meat packing facilities are among the most dangerous operations in the United States. [22]

## LACK OF ENVIRONMENTAL REGULATION

The Environmental Protection Agency is charged with controlling water pollution and setting wastewater

standards for the slaughter industry. The agency's own records show three-quarters of industrial-scale slaughter facilities discharging waste into waterways violated their permits with little or no enforcement, dumping as much nitrogen pollution as small cities in some cases.

Recently, following litigation brought by the Center and key allies in the 4th Circuit, the U.S. Environmental Protection Agency announced it will update water-pollution control standards for the slaughterhouse industry.[23]

  - One-third of the slaughterhouses violated permits more than 10 times, while 18 of the facilities had over 100 violations per day.
  - Tysons Foods, one of four meat mega-corporations dominating the U.S. market, had the most environmental permitting violations.[24]
  - The most polluting U.S. slaughterhouse ranked was a JBS pork processing plant in Beardstown, Illinois. The facility released nearly 2,000 pounds of nitrogen a day into an Illinois River tributary. JBS is one of the largest meat companies in the world.
- States delegated under the Clean Water Act to administer permitting programs are charged with setting fines for exceeding Clean Water Act permits. These fines can be set at a maximum of $46,129 per day, but in most states, fines are often $10,000 or less.
- Along with low fines for exceeding limits, the amount of pollution produced is unclear because meatpackers are only required to monitor their discharge no more than twice a week. [25]

The regulations for many U.S. slaughterhouses have not been updated since 1975, though technology has changed drastically in the past 45 years.[26] In 2022 the EPA settled a lawsuit from a coalition of conservation and community groups (including the Center for Biological Diversity), agreeing to update standards for water pollution from slaughterhouses. [27]

## RECOMMENDATIONS

Additional strategies are needed to improve waste prevention.[28] But the environmental impacts of slaughter facilities must be reduced by scaling down the numbers of animals processed. By addressing overconsumption and unsustainable demand for meat, dairy and seafood, the strain on the system of slaughterhouse waste and pollution of natural resources can be reduced.

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