



Hamburger v. Wildlife: The Environmental Cost of Beef

Once a beef burger reaches your plate, it has done substantial damage to the environment and wildlife. Meat production causes habitat loss, land and water pollution and greenhouse gas emissions; furthermore, millions of wild animals are killed every year at the behest of the livestock industry. Eating less meat is one of the most powerful ways to protect wildlife and the planet.

Extinction Facts	
Serving Size 1/4 lb. Ground Beef	
Greenhouse Gases	6.75 lb. CO ₂ e
Habitat Loss	595 ft. ²
Water Use	425 gal.
Manure	9.80 lbs.

Americans eat 50 billion hamburgers every year,¹ an average of 3 hamburgers per person per week. The environmental footprint of the average American’s annual hamburger habit adds up to **1,050 pounds of carbon dioxide equivalents (CO₂e)², 2.13 acres of habitat, 66,300 gallons of water and 1,530 pounds of manure.**

Cows and Climate Change

Animal agriculture plays a significant role in driving global climate change, contributing at least 14.5 percent of all greenhouse gas emissions (GHGs). Every year cows in the United States alone produce the GHG equivalent of more than 22 million cars.³ Scientists predict that if our current emissions trajectory continues, more than a third of the Earth’s animal and plant species will face extinction by 2050.⁴

The annual American appetite for beef produces **337 billion lb. CO₂e emissions** per year—the same amount produced by **32.3 million cars.**

From feed production and pesticide manufacturing to the energy needed to run slaughterhouses and transport meat to supermarkets, the meat industry has a major impact on our climate. Cows especially contribute to climate change because ruminant animals generate methane just through their digestive processes. Methane is a GHG 86 times more potent than carbon dioxide over a 20-year period. Furthermore, cow manure releases methane, carbon dioxide and nitrous oxide—all potent GHGs.⁵ Cow manure is responsible for two-thirds of the world’s total nitrous oxide pollution.⁶

Water Pollution and Manure

Factory farms have polluted 35,000 miles of rivers in the United States and contaminated groundwater in 17 states.⁷ Water is polluted by runoff from the 167 million pounds of pesticides⁸ and 17 billion pounds of fertilizer used every year to grow animal feed.⁹ The toxic byproducts of improperly contained and decomposing manure also leak into public waterways and lands. A single cow produces 50 pounds of manure every day (more than 6 tons a year),¹⁰ and there are nearly 90 million cows in the United States.¹¹ Few effective regulations exist to ease the environmental effects of disposing of these massive quantities of manure.

¹ Based on the average U.S. per capita consumption of 156 burgers/year, multiplied by 320 million Americans.

² CO₂e calculated using following global warming potentials (GWP) (i.e. warming effect relative to CO₂ over 100-year period): N₂O GWP=298, CH₄ GWP=25, hydrofluorocarbons GWP=1,430 ([Hamerschlag](#), 6)

³ Center for Investigative Reporting, “Hidden Cost of Hamburgers”

⁴ Center for Biological Diversity, “Global Warming and Life on Earth”

⁵ Sustainable Table, “Waste Management”

⁶ Center for Investigative Reporting, “Hidden Cost of Hamburgers”

⁷ Take Extinction Off Your Plate

⁸ [EWG Meat Eater’s Guide](#)

⁹ EWG Meat Eater’s Guide

¹⁰ Ogejo, Jactone Arogo. “Manure Production and Characteristics.” 10/26/15

¹¹ USDA 2012 Census of Agriculture

A Water-guzzling Process

To gain just a single pound, a cow has to eat about 6 pounds of feed,¹² making beef an especially inefficient and water intensive way of putting food on your plate. Feed crops are a major contributor to the thousands of gallons of water that it takes to produce a hamburger. In drought-plagued California, feed production for animals consumes 34 percent of all irrigated water,¹³ and a major food source for livestock, alfalfa, alone consumes more water than any other crop in the state.¹⁴ Grass-fed beef is even worse than industrially produced beef in terms of water consumption: The total water footprint of grass-fed beef is actually about 5 times greater than that of industrial beef.¹⁵

Little Land Left for Wildlife

To raise cows for hamburgers, wildlife habitat is converted to pastures, large-scale feedlots and slaughterhouses. Animal feed is grown on 149 million acres of U.S. cropland,¹⁶ which amounts to almost half of the landmass of the lower 48 states.¹⁷ Grazing cattle also destroy vegetation, trample land, damage soils, contaminate waterways with fecal waste and disrupt natural ecosystem processes, resulting in less natural habitat for wildlife.

American consumption of hamburgers uses **968,491 square miles** of land—equal to 1/4 of the land area of the entire U.S.

Wild animals that are seen as a threat or as competition to cows are often killed or removed from their habitat. For example, bison populations are being corralled onto increasingly small pieces of land to make room for cattle. Bison that leave “protected areas” are slaughtered, allegedly to prevent transmission of disease to cattle. Wildlife Services, a federal animal-killing program, traps, shoots and poisons gray wolves, foxes, bears and millions of other wild animals every year at the behest of the cattle industry.¹⁸ Other animals, such as sage grouse, are systematically losing habitat due to cattle grazing and agricultural development.

Skipping one hamburger per week for a year saves **22,100 gallons of water**, which is equivalent to flushing your toilet nearly 38 times a day for a year.¹⁹

Tips for a Wildlife-friendly Diet

Every meal is an opportunity to help protect wildlife by eating less ground beef.

- Choose a wildlife-friendly hamburger alternative, such as: [smoky grilled veggie burgers](#), [black-bean burgers](#), [garlic-and-basil chickpea burgers](#) or [buffalo sweet potato burgers](#).
- Replace ground beef in other dishes too, like [tacos](#), [veggie meatloaf](#), [stew](#), lasagna, [sloppy Joes](#), [chili](#), [enchiladas](#), [stuffed peppers](#), [burritos](#) and [veggie meatballs](#).



For more facts, recipes and tips, visit TakeExtinctionOffYourPlate.com.

¹² Sustainable Table, “Animal Feed”

¹³ EWG, Meat Eater’s Guide, “Water”

¹⁴ NYTimes, Opinion: Meat Makes the Planet Thirsty

¹⁵ Mekonnen, Mesfin and Arjen Hoekstra. “A Global Assessment of the Water Footprint of Farm Animal Products.” *Ecosystems*. 2012.

¹⁶ EWG Meat Eater’s Guide

¹⁷ Take Extinction Off Your Plate, “Meat and Wildlife”

¹⁸ U.S. Fish and Wildlife Service, “News Release: Mexican Wolf Lethally Removed From the Wild”

¹⁹ Assuming average flush volume of 1.6 gallons/flush, as required by the EPA as of 1992.