

# Rape of Mother Earth

Millions of acres of forestland are devastated through conversion to grazing land and cropland to feed farm animals, both in the U.S. and abroad. Runoff from these lands carries suspended and dissolved solids, organic matter, nutrients and pesticides into our lakes and streams, accounting for more water pollution than all other human activities combined. Overgrazing and intensive cultivation eventually turn these lands into desert, posing a severe long-term threat to our survival.



## Deforestation

■ Cattle ranching is a primary cause of deforestation in Latin America. Since 1960, more than one quarter of all Central American forests have been razed to make pasture for cattle. Nearly 70 percent of deforested land in Panama and Costa Rica is now pasture.<sup>1</sup>

■ Some 40,000 square miles of Amazon forest were cleared for cattle ranching and other commercial development between 1966 and 1983. Brazil estimates that 38 percent of its rain forest was destroyed for cattle pasture.<sup>2</sup>

■ Just one quarter-pound hamburger imported from Latin America requires the clearing of six square yards of rain forest and the destruction of 165 pounds of living matter including 20 to 30 different plant species, 100 insect species, and dozens of bird, mammal and reptile species.<sup>3</sup>

## Soil Erosion and Desertification

■ Cattle production is turning productive land into barren desert in the American West and throughout the world. Soil erosion and desertification is caused directly by cattle and other livestock overgrazing. Overcultivation of the land, improper irrigation techniques and deforestation are also principal causes of erosion and desertification, and cattle production is a primary factor in each case.

■ Cattle degrade the land by stripping vegetation and compacting the earth. Each animal foraging on the open range eats 900 pounds of vegetation every month. Their powerful hoofs trample vegetation and crush the soil with an impact of 24 pounds per square inch.<sup>4</sup>

■ As much as 85 percent of U.S. Western rangeland, nearly 685 million acres, is being degraded by overgrazing and other problems, according to a 1991 United Nations report. The study estimates that 430 million acres in

the American West is suffering a 25 to 50 percent yield reduction, largely because of overgrazing.<sup>5</sup>

■ The United States has lost one third of its topsoil. An estimated six of the seven billion tons of eroded soil is directly attributable to grazing and unsustainable methods of producing feed crops for cattle and other livestock.<sup>6</sup>

■ Each pound of feedlot steak costs about 35 pounds of eroded American topsoil, according to the Worldwatch Institute.<sup>7</sup>

## Water Scarcity

■ Nearly half of the total amount of water used annually in the U.S. goes to grow feed and provide drinking water for cattle and other livestock. Producing a pound of grain-fed steak requires the use of hundreds of gallons of water. Producing a pound of beef protein often requires up to fifteen times more water than producing an equivalent amount of plant protein.<sup>8</sup>

■ U.S. fresh water reserves have declined precipitously as a result of excess water use for cattle and other livestock. U.S. water shortages, especially in the West, have now reached critical levels. Overdrafts now exceed replenishments by 25 percent.<sup>9</sup>

■ The great Ogallala aquifer, one of the world's largest fresh water reserves, is already half depleted in Kansas, Texas and New Mexico. In California, where 42 percent of irrigation water is used for feed or livestock production, water tables have dropped so low that in some areas the earth is sinking under the vacuum. Some U.S. reservoirs and aquifers are now at their lowest levels since the end of the last Ice Age.<sup>10</sup>

## Water Pollution

■ Organic waste from cattle and other livestock, pesticides, chemical fertilizers and agricultural salts and sediments are the primary non-point source of water pollution in the U.S.<sup>11</sup>

■ Cattle produce nearly 1 billion tons of organic waste each year. The average feedlot steer produces more than 47 pounds of manure every 24 hours. Nearly 500,000 pounds of manure are produced daily on a standard 10,000-head feedlot. This is the rough equivalent of what a city of 110,000 would produce in human waste. There are 42,000 feedlots in 13 U.S. states.<sup>12</sup>

## Depletion of Fossil Fuels

■ Intensive animal agriculture uses a disproportionate amount of fossil fuels. Supplying the world with a typical American meat-based diet would deplete all world oil reserves in just a few years.<sup>13</sup>

■ It now takes the equivalent of a gallon of gasoline to produce a pound of grain-fed beef in the United States. The annual beef consumption of an average American family of four requires more than 260 gallons of fuel and releases 2.5 tons of CO<sub>2</sub> into the atmosphere, as much as the average car over a six month period.<sup>14</sup>

## Global Warming

■ Cattle and beef production is a significant factor in the emission of three of the four global warming gases—carbon dioxide, nitrous oxide and methane.<sup>15</sup>

■ CO<sub>2</sub> is also generated by the fuel used in the highly mechanized agricultural production of feed crops for cattle and other livestock. With 70 percent of all U.S. grain production now used for livestock feed, the CO<sub>2</sub> emitted as a direct result is significant.<sup>17</sup>

■ Petrochemical fertilizers used to produce feed crops for grain-fed cattle release nitrous oxide, another greenhouse gas. Worldwide, the use of fertilizers has increased dramatically from 14 million tons in 1950 to 143 million tons in 1989. Nitrous oxide now accounts for six percent of the global warming effects.<sup>18</sup>

■ Cattle emit methane, another greenhouse gas, through belching and flatulation. Scientists estimate that more than 500 million tons of methane are released each year and that the world's 1.3 billion cattle and other ruminant livestock emit approximately 60 million tons or

12 percent of the total from all sources. Methane is a serious problem because one methane molecule traps 25 times as much solar heat as a molecule of CO<sub>2</sub>.<sup>19</sup>

### Loss of Biodiversity

■ U.S. cattle production has caused a significant loss of biodiversity on both public and private lands. More plant species in the U.S. have been eliminated or threatened by livestock grazing than by any other cause, according to the U.S. General Accounting Office GAO.<sup>20</sup>

■ Riparian zones – the narrow strips of land that run alongside rivers and streams where most of the flora and fauna are concentrated – have been the hardest hit by livestock grazing. More than 90 percent of the original riparian zones of Arizona and New Mexico are gone, according to the Arizona State Parks Departments. Colorado and Idaho have also been hard hit. GAO reports that “poorly managed livestock grazing is a major cause of degraded riparian habitat on federal rangelands.”<sup>21</sup>

■ Wild animals are disappearing from the range due to competition for food from domestic livestock. Pronghorn have decreased from 15 million a century ago to less than 271,000 today. Bighorn sheep, once numbering over 2 million, now number under 20,000. The elk population has plummeted from 2 million to less than 455,000.<sup>22</sup>

■ The government has worked with ranchers to make livestock grazing the predominant use of Western public lands. The Bureau of Land Management (BLM) has long favored ranching over other uses. BLM sprays herbicides over large tracts of range eliminating vegetation eaten by wild animals and replacing it with monocultures of grasses favored by domestic livestock.<sup>23</sup>

■ Under pressure from ranchers, the U.S. government exterminates tens of thousands of predator and “nuisance” animals every year. In 1989 for example, the U.S. Department of Agriculture’s Wildlife Services (formerly Animal Damage Control) killed 86,502 coyotes, 7,158 foxes, 236 black bears, 1,120 bobcats and 80 wolves. In 1988 Wildlife Services killed 4.6 million birds, 9,000 beavers, 76,000 coyotes, 5,000 raccoons, 300 black bears and 200 mountain lions. Approximately 400 com-

panion dogs and 100 companion cats were also inadvertently killed. Extermination methods used include poisoning, shooting, gassing and burning animals from their dens.<sup>24</sup>

■ The predator “control” program cost U.S. taxpayers \$29.4 million in 1990 – more than the amount of livestock losses caused by wild animals.<sup>25</sup>

■ Tens of thousands of wild horses and burros have been rounded up by the federal government because ranchers claim they compete with their cattle for forage. The horses and burros are held in corrals, costing taxpayers millions of dollars per year. Many wild horses have ended up at slaughterhouses.

■ For several years, ranchers have blocked efforts to re-introduce the wolf, an endangered species, into the wild.

### Footnotes:

- [1] Catherine Caulfield. “A Report a Large: The Rain Forests.” *New Yorker*, January 14, 1985, 79.  
[2] *Ibid*, 49.  
[3] Julie Denslow and Christine Padoch, *People of the Tropical Rainforest* (Berkeley: University of California Press, 1988), 169.  
[4] John Lancaster, “Public Lands, Private Profit,” *Washington Post* A1, A8, A9; Lynn Jacobs, *Waste of the West: Public Lands Ranching* (Lynn Jacobs: Tucson, AZ 1991), 15.  
[5] Myra Lockenbrink, “The NewRange War has the Desert as Foe,” *The New York Times*, August 20, 1991, G4.  
[6] Frances Moore Lappe, *Diet for a Small Planet* (New York: Ballantine Books, 1982), 80.  
[7] Alan Durning, “Cost of Beef for Health and Habitat,” *Los Angeles Times*, September 21, 1986, V3.  
[8] Lappe, *Diet for a Small Planet*, 76-77.  
[9] David Pimentel and Carl W. Hall, *Food and Natural Resources* (San Diego: Academic Press: 1989), 41.  
[10] Sandra Postel, *Water: Rethinking Management in an Age of Scarcity*, *Worldwatch Paper* 62 (1984), 20.  
[11] Pimentel and Hall, 89.  
[12] M.E. Ensminger, *Animal Science* (Danville, IL: Interstate Publishers, 1991), 187, table 5-9: Based on analysis by John Sweeten, Texas A&M. for the National Cattlemen’s As-

sociation, 1990.

- [13] Pimentel and Hall, 35.  
[14] Alan Durning, “Cost of Beef for Health and Habitat,” *Los Angeles Times*, 3; Based on 65 pounds of beef consumption per year. The auto CO<sub>2</sub> emissions comparisons come from Andrew Kimbrell, *Lifestyle Handbook* (New York, NY: Henry Holt and Co., 1990), 33-42.  
[15] Fred Pearce, “Methane: The Hidden Greenhouse Gas,” *New Scientist*, May 6, 1989; Alan Durning and Holly Brough, *Taking Stock: Animal Farming and the Environment*, (Washington D.C.: World Resources Institute, World Resources 1990-1991), 355.  
[16] *Greenhouse Crisis Statistical Review*, Sources: World Resources Institute, Rainforest Action Network, U.S. Department of Agriculture and Worldwatch Institute in U.S. News and World Report, Oct. 31, 1988.  
[17] David Pimentel, “Waste in Agriculture and Food Sectors: Environmental and Social Costs,” paper for Gross National Waste Product Forum, Arlington, VA: 1989, 9-10. Pimentel concludes that substituting a grass feeding livestock system for the present grain and grass system would reduce energy inputs about 60 percent.  
[18] Lester Brown et al., *State of the World 1990* (New York, NY: W.W. Norton and CO., 1990), 67; Fred Pearce, 38.  
[19] Fred Pearce, 37; Methane emissions from livestock from World Resources Institute et al. 1990-91, 346, Table 24.1 Cattle emissions as a percentage of livestock emissions from Michael Gibbs and Kathleen Hogan, “Methane,” *EPA Journal*, March/April 1990.  
[20] George Wuerthner, “The Price is Wrong,” *Sierra*, September/October 1990, 40-41.  
[21] Wuerthner, 40; Jon Luoma, “Discouraging Words,” *Audubon*, September 1986, 92.  
[22] Wuerthner, 41-42; Denzel Ferguson and Nancy Ferguson, *Sacred Cows at the Public Trough*, (Bend, OR: Maverick Publications, 1983), 116.  
[23] Ferguson and Ferguson, 158; Lynn Jacobs, 237.  
[24] Keith Schneider, “Meditating the Federal War of the Jungle,” *New York Times* July 9, 1991, 4E; Carol Grunwald, ed. *Animal Activist Alert*, 8:3 (Washington D.C.: Humane Society of the United States, 1990), 3.  
[25] Carol Grunwald, ed. *Animal Activist Alert* 8:3,3.

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