

## Lawns, Outdoor Power Equipment, and Global Warming

Americans love houses set in a wide expanse of lush, manicured lawns, highlighted by borders of bushes or flowers, and stately trees for shade. Such landscaping seems to be the requisite for middle-class status. Lawns cover more than 40 million acres of land in the continental United States! Homeowners spend \$30 billion on lawn care every year! Americans use an estimated nine billion gallons of water every day to irrigate residential landscapes, as much as half lost to runoff and evaporation. This is not environmentally sustainable.

Lawns, like all plants, can act as carbon sinks, absorbing CO<sub>2</sub> from the atmosphere, but the heavy “carbon cost” of maintaining those lawns often outweighs the benefits, especially in arid areas and areas of nutrient-poor soil. Landscaping homes and communal spaces in a way compatible with local environmental conditions—temperature range, soil type, available light and water—is essential to combating climate change. What we plant and how we maintain our landscapes can significantly reduce our carbon footprint.

### Plants & Fertilizer

- **Limit the amount of grass.** (Shrubs and trees have greater carbon-capturing ability than grasses, and native plants help maintain local biodiversity.)
  - **Grass alternatives:**
    - Xeriscaping (use drought-resistant plants native to arid regions).
    - Landscape materials like rocks, gravel, and mulch.
    - Low-maintenance perennial ground covers.
  - **Replace areas of grass with a fruit or vegetable garden.**
- **Reduce fertilizer use.** (Homeowners in America use about 3 million tons of nitrogen-based fertilizers each year. Every ton of nitrogen produced for fertilizers puts 4-5 tons of carbon onto the atmosphere. Most people over-fertilize and what’s not taken up by grass is converted by microbes into nitrous oxide gas, which has 300 times the heat-trapping capacity of CO<sub>2</sub>.)
- **If you do fertilize, use organic fertilizers; better yet, let lawn clippings decompose in place.** (Nitrous oxides are still released but the manufacturing process does not add CO<sub>2</sub> to the atmosphere.)

### Power Equipment

Gasoline powers most lawn mowers, and many leaf blowers, hedge trimmers, chain saws, and weed eaters on the market today. Americans burn an estimated 800 million gallons of gasoline in lawn maintenance, and 17 million gallons are spilled in the process. Most gas-fueled lawn equipment uses two-stroke engines, in which oil must be added to the gas. This results in about 30% of the fuel being incompletely combusted, releasing hydrocarbons and harmful gasses into the atmosphere. Four-stroke engines are better, but still release high amounts of hydrocarbons and other harmful chemicals into the air.

- **Lawn mowers.** (In the United States, gas powered lawn mowers contribute about 5% of total air pollution.)
  - **Use an electric-powered lawn mower or a manual push mower.** (An EPA study found that, per hour of use, gas-powered lawn mowers generate eight times more nitrogen oxides, 3,300 times more hydrocarbons, 5,000 times more carbon monoxide, and more than twice the CO<sub>2</sub> of electric lawn mowers.)

- **Mow less when possible.** (Every day you wait to mow reduces your carbon footprint. Long grass blades improve moisture retention in the soil, reducing water usage, and promoting stronger root growth.)
- **Reduce the use of leaf blowers, snow blowers, and other landscaping equipment.** (A typical two-cycle snowblower puts out about one pound of CO<sub>2</sub> per hour, the same as driving an average car 70 miles.)
- **Use hand tools where feasible.** (Power equipment may be necessary when a person's health is poor or the scope of the task is too big, and more efficient mowers, snow blowers, and landscaping equipment using electric and hybrid engines are coming on the market, but reducing our reliance on power equipment will significantly reduce our carbon footprint. Consider mowing your lawn with a manual hand mower, or using a rake or broom instead of a leaf blower, or shoveling snow by hand—it's good for the environment and good exercise.)