

Perfect Earth Project Stat Sheet

Land Use

- There are an estimated 40 million acres of turf grass in America. More than corn, wheat, and fruit trees combined¹
- Turf grass is America's largest irrigated crop using 60 million acre-feet of water per year¹

Pesticide Use

- Over 1 billion pounds of pesticides are used in the US annually²
- 127 Million pounds of pesticides are applied yearly by homeowners to lawn and gardens²
- 129 million pounds of pesticides are used yearly by commercial applicators, industry, and government²
- Over 185 million pounds of glyphosate (Roundup®) is used annually²
- 2–3 times the amount of pesticides are used on an acre of home lawns vs. an acre of agriculture²
- There are 118 pesticides found in Long Island's sole source drinking water aquifer, including the active ingredients in pesticides Weed-B-Gone®, Sevin®, and Bayer Advanced Grub Control

Health Effects

- Those most vulnerable to lawn and landscape toxins are pregnant women, children and pets
- 50% of lifetime pesticide exposure occurs during the first 5 years of life³
- Of the 30 most common lawn pesticides, 17 are probable or possible human carcinogens, 11 are linked with birth defects, 19 linked with reproductive effects, 14 associated with neurotoxicity, 24 linked to liver or kidney damage, 25 are sensitizers or irritants, and 18 are endocrine disrupters³
- Common landscape pesticides have been linked to Autism, Parkinson's Disease, Non-Hodgkin's Lymphoma, Brain Cancer, Asthma, and Endocrine Disruption, including Erectile Dysfunction
- 70,000 yearly calls to American Association of Poison Control Center involve common household pesticides⁴

- 27 million pounds of 2,4-D, one of the most common landscape herbicides, is applied each year, enough to kill 250,000,000 people if directly ingested⁵
- 185 million pounds of glyphosate, the active ingredient in Roundup®, used yearly could kill over 140,000,000 people if directly ingested⁵

Golf

- There are over 15,000 golf courses in America, encompassing over 4 million acres of land (National Golf Association)
- Golf courses use 4–7 times the amount of pesticides, per acre, than agricultural land⁶
- In the "Toxic Fairways" study conducted by the Attorney General of New York's office, 52 responding golf courses reported using over 200,000 thousand pounds of dry pesticides and close to 9,000 gallons of liquid pesticides on their courses annually, translating into 7 pounds of pesticides used per acre per year⁶
- Six pesticides (propoxur, DDVP, oryzalin, trifluralin, fosetyl-Al and chlorothalonil), totaling 9,932 pounds or 19.8 percent of the total active ingredients applied, were classified by the EPA as possible or probable human carcinogens. Chlorothalonil is the most heavily used fungicide on Long Island golf courses and has also been detected in Long Island's groundwater.⁷
- The Toxic Fairways study found golf course pesticides as likely contributors to the pesticide contamination of Long Island's vulnerable sole source drinking water aquifer, which to date has been documented to contain over 100 pesticides
- A proportionate mortality study of golf course superintendents found elevated levels of cancer, respiratory, and neurological disease compared to the general population⁸
- Golf course superintendants showed particularly elevated mortality due to brain cancer, non-Hodgkin's lymphoma, and diseases of the nervous system (Parkinson's, etc.)
- Workers generally had little knowledge about pesticides, except that they are chemicals used to kill weeds or insects.⁹

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- A study of golf courses in Canada and the US revealed increased cancer rates and genotoxicity in rodents living on golf courses¹⁰

"Anyone on the golf course or nearby is at risk. Pesticide applicators, either professional contractors or golf course workers, can be exposed to these poisons during storage, mixing and application. Golfers, often playing shortly after pesticides have been applied, can be exposed directly to the pesticides on the turf, as well as to pesticide vapors and mists. People living near a golf course may be affected by sprays and dusts blown from the golf course onto their property and into their homes. Finally, pesticides applied to the turf may run off into surface waters or leach down to groundwater, which can then expose people to contaminated drinking water. These people may live far from the place where pesticides were used."

— Toxic Fairways, New York State Attorney General's office

Pets

- The ASPCA received over 4,300 calls regarding pesticide exposure to dogs and cats in July, 2003¹¹
- Dogs exposed to 2,4-D, one of the most common pesticides in home lawn and garden products, can develop canine malignant lymphoma¹²
- Over 50% of reported feline poisonings, and 15.7% of all pet poisonings reported to the Animal Poison Control Center in 2013 involved insecticides¹³
- Nearly half (48%) of all July and August calls to the Animal Poison Control Center involve pesticides, mainly from dogs and cats walking on lawns on which pesticides were recently applied¹⁴
- Pet exposure to Malathion, a common pesticide used in ornamental trees and shrubs, can affect the function of their immune system, cause chest pains and difficult breathing, and is an endocrine disruptor (effects hormones)¹²
- Dogs and cats are at danger from secondary poisonings from eating rodents exposed to rodenticides

Aquatic Environments

- Of the 30 most commonly used lawn pesticides, 24 are toxic to fish and aquatic organisms¹⁵
- Common landscape insecticides such as Carbaryl (active ingredient in Sevin®), Imidacloprid (active ingredient in Bayer Advance Insect Control®), and Permethrin (active ingredient in tick sprays) are all deadly to fish and shellfish. Shellfish are filters for the environment, helping to break down algae and bacterial growth. Small marsh fish such as Killifish act as predators to mosquito larva.
- Common landscape herbicides such as Glyphosate (active ingredient in Roundup®) and 2,4-D (Active ingredient in Weed-B-Gone®) are toxic to aquatic vegetation such as marsh grass. This vegetation acts as a buffer between lawns and the aquatic environment, filtering out toxins and helping stabilize shoreline erosion
- Synthetic lawn fertilizers are a primary source of highly mobile nitrogen and phosphorus, which fuel harmful algal blooms, including blooms of dangerous Blue-Green algae (Cyanobacteria)

Healthy Soil and Carbon Capture

"Soils of the world must be part of any agenda to address climate change."

— Rattan Lal

- There are 2,500 billion tons of carbon in soil, compared with 800 billion tons in the atmosphere and 560 billion tons in plant and animal life¹⁶
- Scientists from the University of Texas at Austin, the Smithsonian Tropical Research Institute, and Boston University assessed the carbon and nitrogen cycles under different mycorrhizal regimens and found that plants linked with fruiting, or mushroom-type, fungi stored 70 percent more carbon per unit of nitrogen in soil¹⁷
- The use of pesticides and fungicides has a negative impact on the organisms that function in the soil to sequester carbon, research is scarce, but increasingly addressed at understanding and quantifying the role that healthy soils vs. chemically treated soils, play in mitigating climate change¹⁸



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Education

- According to the National Gardening Association, homeowners spent \$36.8 billion on lawns and gardens in 2003, of which \$11.4 billion was spent on landscaping
- In 2008 there were 559,630 workers listed as employed by the landscape industry.¹⁹ There are no statistics for how many landscape workers are not on a documented payroll
- The only education required in the landscape industry is in pesticide application and safety training

Sources

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