



FACT SHEET 2.1

HOW CAN HOBBY FARMS BE SOURCES OF STORMWATER POLLUTION?

You may be surprised to learn that hobby farming is a potential source of water pollution. It is easy to assume that stormwater pollution is more likely associated with highly developed urban and industrialized areas, where extensive roof and pavement result in more stormwater runoff than in rural landscapes.

However, human activities including agriculture (sometimes no matter how small) can generate pollutants and create conditions that allow these pollutants to come into contact with stormwater. Because of this, the hobby farm can become a significant source of nonpoint source pollution. In this section, we will take a look at some of the farming activities that can result in the generation of pollutants, and why these pollutants are a concern.

FARMING ACTIVITIES AND THE GENERATION OF “POLLUTANTS”

| FARMING ACTIVITY | POLLUTANTS | HOW IT GENERATES POLLUTANTS |
|---|------------------------------|---|
| LAND DISTURBANCE SUCH AS TILLING AND LIVESTOCK GRAZING | Sediments | Land disturbance activities expose soils to erosion by both water and wind. These exposed soils can be carried by water flowing over the surface of the ground or by the wind and deposited into waterways as sediments. |
| EXCESSIVE IRRIGATION | Sediments | Excessive irrigation can result in increased erosion by simulating similar conditions to heavy rainfall events. |
| APPLICATION OF FERTILIZERS | Nutrients | When nutrients applied through fertilizers, manure, soil amendments and composted materials, exceed plant needs or when applied just before significant rainfall, the nutrients can be carried away by stormwater and discharged into nearby water bodies. |
| APPLICATION OF OTHER AGRICULTURAL CHEMICALS | Toxic Chemicals | When pesticides, fungicides, and herbicides, containing toxic chemicals, are applied, they can adhere to soil particles or readily be dissolved by stormwater runoff and carried into waterways. |
| INCIDENTAL AND ACCIDENTAL SPILLS | Toxic Chemicals | Equipment operation may require the use of fuel, lubricants and hydraulic fluids. Other activities, such as the application of paints and stains, or the use of cleaning compounds can generate solvents and other chemicals. These substances can drip or spill onto the ground surface in the course of normal operation. When exposed to rain or snow melt, they can be carried by stormwater runoff into nearby water bodies. |
| MANAGEMENT OF ANIMAL WASTE | Nutrients, Bacteria, Viruses | Animal manure contains bacteria and viruses that when left or spread on the ground in excess amounts, can be carried to nearby water resources. |
| MANAGEMENT OF OTHER WASTE | Debris | Wastes such as plant clippings from gardening, maintenance and construction waste, trash, and other solid waste from hobby farming activities, can be washed into waterways if not properly managed and disposed of. |

WHY ARE THESE POLLUTANTS A CONCERN?

| POLLUTANT | CONCERNS | AGRICULTURAL SOURCES |
|----------------------------|--|---|
| SEDIMENTS | <ul style="list-style-type: none"> • Clouds surface water • Smothers fish larvae and benthic organisms that live in the aquatic environment, can also clog the gills of fish • Carries pollutants such as nutrients and toxic chemicals attached to the sediments from fertilizer and pesticide applications | Tilling, livestock grazing, excessive irrigation |
| NUTRIENTS | <ul style="list-style-type: none"> • Nutrients, such as phosphorus and nitrogen, are a food source for plants and algae. Excess amounts in a surface water can result in algae blooms that can degrade water quality, result in fish kills, make waters unfit for swimming or fishing, and create foul odor and taste in water used for drinking • High concentrations of nitrate (a compound of nitrogen) in drinking water can cause methemoglobinemia, a potentially fatal disease in infants – nitrates are very soluble and can easily travel to groundwater as stormwater runoff infiltrates through soils | Application of fertilizers, manure and composted materials to enhance the nutrient content of soils or animal manure left on the ground surface |
| TOXIC CHEMICALS | <ul style="list-style-type: none"> • Poison fish and other wildlife (as well as people), contaminate food sources, destroy habitat, and render potential surface water and groundwater supplies unfit for consumption • Some toxic chemicals have an immediate adverse effect on living organisms, others have effects that manifest over time as the chemicals accumulate in the tissues of living organisms and in their habitats | Application of pesticides and herbicides and incidental spills from operation and maintenance of farm equipment or infrastructure |
| PATHOGENS, BACTERIA | <ul style="list-style-type: none"> • Make swimming areas unusable • Render drinking water unfit for consumption • In coastal areas, prohibit the harvesting of shellfish | Animal manure |
| DEBRIS | <ul style="list-style-type: none"> • Plastic bags and other packaging materials, bottles, construction waste, and other debris can degrade habitat and choke, suffocate, or disable aquatic wildlife, such as waterfowl, fish, and amphibians • Leaves/brush/grass clippings can lead to low dissolved oxygen levels as the materials break down, affecting fish and other aquatic organisms | Organic wastes, such as plant clippings from gardening, maintenance and construction debris and trash, from farming activities |

