Oklahoma Source Water Protection Program

Farmland

Update January 2025

How Does Farmland Effect Source Water?

Farmland can significantly affect source water through various means. The use of fertilizers and pesticides, while effective for crop productivity, can lead to nutrient contamination into nearby sources of water. In addition, farmland is a major contributor of sediment loading into nearby waters. This sedimentation can lead to increased turbidity, decreased availability, and decreased quality of drinking water sources.

Impact of Fertilizer on Source Water

Fertilizers are used to provide plants with the nutrients they need. When too much fertilizer is utilized, the excess nutrients runoff during storm events and enter our waterways. When there is a surplus of nutrients in a water body it is called eutrophication, a condition that often leads to the development of harmful algal blooms. Large populations of algae can lead to depleted oxygen levels and the blocking of sunlight which may kill many plant and animal species. In addition, some algae release toxins that are unsafe, posing health risks to humans and wildlife that come into contact with the water.

Impact of Overuse of Pesticides on Source Water

Pesticides used in agricultural and urban settings can run off into rivers, lakes, and groundwater, contaminating these vital sources of drinking water. This contamination can lead to a variety of negative health effects for humans, such as hormonal disruptions, increased risk of cancer, and developmental issues in children.

Additionally, aquatic life is often severely impacted as well. Pesticides can harm fish and other wildlife by affecting their reproductive systems, reducing populations, and disrupting food chains. The presence of pesticides in water bodies can also lead to the decline of biodiversity, as sensitive species may be unable to survive in contaminated habitats.

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Impact of Livestock on Source Water

Livestock tend to gravitate towards areas with availability of water, rich forage, and ample shade, and riparian areas surrounding waterways are perfect candidates. Livestock can damage these ecosystems through trampling and overgrazing of streambanks, which can lead to soil erosion, loss of streambank stability, poor water quality, and warmer conditions. In addition, wastes from these animals can contribute excess nutrients as well as pathogens into the water further impairing the quality of the water. This means reduced habitat for riparian plant species, coldwater fish, and other wildlife, and potentially contaminating a drinking water source to the point where treatment is no longer effective.

General BMPs for Farmland and Cropland

Practice	Description
Riparian Buffers	**Planting vegetation along waterways to filter runoff**
Cover Crops	**Planting crops during the off season to protect soil from erosion**
No-till Farming	**Minimizing soil disturbance to reduce erosion**
Nutrient Management Plans	**Applying fertilizer specifically based on soil needs to reduce excess nutrient runoff**
Grazing Management	**Rotating livestock grazing areas to prevent overgrazing and soil degradation**
Integrated Pest Management	**Applying pesticides in a targeted and efficient manner to reduce pesticide runoff**

Oklahoma Source Water Protection SWP

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Contact DEQ:

Reach out to the Capacity Development Section via email or phone and request to participate in the **FREE** program.

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You can also visit the DEQ website for more info, helpful resources, and to sign up for the program. **https://tinyurl.com/44hsyfut**