

## **ATHLETIC FIELDS AND ENVIRONMENTAL STEWARDSHIP**

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From an environmental perspective, there are some areas of concern that are common to all athletic fields and some other issues that are dependent on the level of management and the inputs used. Protecting water quality is one of the most common environmental interests for all athletic fields in Michigan. The potential impacts to water quality include soil erosion, pesticide and nutrient movement, and improper stormwater discharge from parking areas. In addition, an emerging issue is the quantity of water used as irrigation on large turf areas such as athletic fields.

Athletic fields can be prone to soil erosion during initial construction, grow-in or renovation activities. Soil that is discharged into flowing surface water bodies is problematic and must be controlled. The soil particles will physically degrade the quality of streams, ponds, lakes or wetlands by changing the habitat for the organisms that call those areas home. They also have the potential to chemically change the quality of the water by transporting nutrients or pesticides that were applied to the field area. It is essential that adequate soil erosion devices be deployed during those activities where soil erosion is likely. Some local ordinances will require a soil erosion permit for areas where more than two acres of soil are disturbed. Check with the local governmental authority for specific soil erosion permit requirements.

Pesticide and nutrient use on athletic fields is a primary concern because many fields are high profile public entities that are regularly used by local communities. The risk of environmental damage or a human health problem due to a misapplication or illegal use presents significant liability to the management team. Nitrogen and phosphorus are the nutrients that can cause environmental degradation of water bodies. Nitrogen is the more mobile of the two elements because it can readily move with water and is less likely to attach to soil particles when compared to phosphorus. Research indicates that prudent management techniques of less than 1 lb. N / 1000 sq. ft. per application are not likely to move significant amounts of nitrogen from turf areas. Phosphorus is a primary concern for surface water degradation. It is easily managed on turfed surfaces by conducting a soil test for phosphorus to determine the need for annual maintenance applications. Most native soils in Michigan have adequate phosphorus levels for the mature turf. Sand-based growing mixes can be prone to low phosphorus levels and need more aggressive soil monitoring. Phosphorus is critical to seedling establishment and should be used routinely for these activities. Phosphorus is not likely to move out of a turf system once it has been watered into the soil profile. Take precautions to not apply the material to impervious surfaces such as sidewalks, driveways, or parking lots where phosphorus can wash directly into stormwater runoff. Irrigation directly after application in an amount that does not produce runoff will assist in moving the nutrients into the turf zone and minimize the potential for off site movement.