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Turf Tips

Maintaining Waterfront Turf to Preserve Water Quality

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ORNAMENTALS TEAM

Lawns adjacent to lakes, ponds, rivers or other surface water bodies should be regarded as sensitive areas. Though these lawn areas can benefit the water by filtering runoff water and protecting against soil erosion, it is important to understand the potential for turf maintenance activities to affect water quality. Listed below are a few site characteristics and general management tips to consider that will reduce the potential for turf maintenance activities to affect water quality. For more details on mowing, fertilizing or irrigating your lawn, please refer to the fact sheets dedicated to each of these areas.

General Site Characteristics

- What is the slope of the area?
  The steeper the slope, the greater the potential for surface runoff of fertilizers. Light watering after fertilizer or pesticide applications will move the products into the thatch and root zone of the turf and reduce the potential for runoff into a lake, pond or stream.
- What is the soil texture?
  Water infiltration is slower on fine-textured soils (clays) than on coarse-textured soils (sands). Therefore, clays have greater potential for surface water movement to lakes and ponds.

Adjust your watering techniques to reduce excessive water movement from the lawn.

- How fertile is the soil on your site?
  A soil test is an effective tool to determine the phosphorus level of your soil. Phosphorus is a key contaminant of surface water. Adding phosphorus to lawns adjacent to surface water is not necessary if adequate levels already exist in the soil. Most soils in Michigan have adequate phosphorus levels for lawn turf. The MSU Extension office in your county can help you get a soil test done and interpret the results.
- What protection is there from point sources of contamination?
  A point source of contamination is an impact that can be directly linked to a source such as a malfunctioning septic field, driveway/parking area drainage, pesticide/fertilizer storage losses, fuel tanks, etc. Protective measures for these items should be a priority.

Fertilizer Tips

Let's examine the classical nitrogen — phosphorus — potassium fertilizer mix and its potential impact on water quality. Nitrogen is the most soluble of these elements and therefore the most prone to leaching or runoff. It may enhance weed and algae growth that has detrimental effects on the quality of the water. Phosphorus has the greatest impact on aquatic weed growth and should be used on lawns adjacent to water only if need is determined by a soil test. Test the soil routinely! If the phosphorus level is above 20 for the Bray P-1 test, there is no need to add more phosphorus. An MSU aquatic expert estimates that 1 pound of phosphorus could support 775 pounds of algae growth. Phosphorus is not very soluble and is bound tightly to the soil. It usually enters the water attached to soil as a result of erosion. Therefore, prevent soil on your property from eroding into surface water. Potassium movement and impact are minimal and not considered a routine problem.

- Make a 5- to 10-foot buffer strip adjacent to any water body and apply minimal or no fertilizer to this strip.
- Use a zero phosphorus fertilizer if phosphorus levels are adequate.
- Use 1 to 4 pounds of nitrogen per 1,000 square feet per year, depending on the quality of lawn you desire.
- Use no more than 1 pound per 1,000 square feet of nitrogen per application.
- Use lower nitrogen amounts for shaded areas.

- At least 25 to 35 percent of the nitrogen should be a slow-release form. Organic-based nitrogen fertilizers will provide slow release. Other types of fertilizers can be formulated to provide slow release of nitrogen. Check the labels.
- Don't apply fertilizer in the spring until 3 weeks after lawn green-up.
- A general fertilizer application sequence for high quality lawns would be May, early July, September and late October/early November.
- Pay attention to the labels! This is no place for the "if 5 pounds is good, 10 pounds would be better" approach.
- Never let fertilizer land directly in the water. Use a buffer strip adjacent to the water to safeguard your application. Use a drop spreader to control application near the buffer strip.
- Keep fertilizers off any concrete or asphalt surfaces. Rainwater could carry these materials into a drainage system that connects to surface water. Sweep or blow fertilizers off the hard surfaces back onto the lawn.
- Don't fill the spreader near the water. An accidental spill at this time could cause considerable impact.
- If you use a professional lawn care service, make certain its technicians are familiar with water protection techniques.

Mowing Tips

Proper mowing can produce healthier turf that can withstand more stress and pest pressure. Mow high and regularly. Raising the mowing height will enhance the quality and health of your lawn. A height of 2.5 to 3.5 inches is a general recommendation for most turf species. For best results, remove only one-third of the leaf blade at each mowing.

- Sharp mower blades provide a better cut and a healthier turf stand. Dull blades tear leaf blades and provide more sites for disease infection.
- Returning clippings to the turf can reduce the total need for fertilizer.
- Routine clipping removal from the lawn will reduce soil phosphorus levels over time. Take a soil test to monitor nutrient levels.
- Do not allow clippings to reach the water! This is like throwing fertilizer into the water and must be as diligently avoided.
- If clippings are composted on the property, make sure the enriched water that leaches from the pile cannot reach surface water.
- Do not refuel the mower near the water. An accidental spill could cause considerable impact.

Irrigation Tips

Many properties near lakes and ponds have the ability to irrigate. Take control of the sprinkler! Excessive moisture increases the potential to move nutrients out of the thatch and root zone of the turf and into the water. During periods of adequate rainfall, turn the irrigation system off!

The first rain or irrigation after a fertilizer or pesticide application is the most critical. Excessive water immediately after a fertilizer application raises the potential for these products to move in runoff water. The potential increases on properties with clay soils and steep slopes adjacent to the pond, lake or stream. A light watering after a fertilizer or pesticide application will move these products into the thatch and root zone. There the potential for them to move out of the soil profile and into surface water is significantly reduced.

Pesticide Use Tips

- Always follow label directions.
- Keep products off impervious surfaces such as driveways and sidewalks.
- Spot treat areas rather than use blanket treatments whenever possible.
- Establish a buffer strip adjacent to the water where no pesticides are applied.

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