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Caring for Flooded Lawns

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Once the flood waters have receded and the homes are recovered, it will be time to clean up the yard. Grass has been described as Mother Nature's forgiveness for our disruption of the earth. This time, people will hide the scars of Mother Nature with a blanket of grass.

Common sense would tell you to pick up any debris, such as wood, glass, stones, nails and other metal objects, deposited on lawn areas. This debris is a safety hazard to operators and can damage power mowers or other equipment used on the lawn. Remove leaves or any other material that smothers grass.

Turfgrass in flooded conditions declines from lack of oxygen and light. Substantial turf loss can be expected after 4 days of continued submersion. Other factors associated with flooding also damage turfgrass, i.e. silt/sand cover, water contaminated with petroleum or pesticides, high water temperature and algae scum.

Fast-moving water adjacent to muddy rivers can leave silt and sand deposits in excess of 2 feet. Soil deposits greater than 1 inch should be scraped or washed from the lawn surface before renovation. It is best to remove deposits of soil and debris since the level of contamination from petroleum products and pesticides is not usually known. If removal is not possible, till the area to thoroughly mix the flood deposits with the previous grass and soil. When tilling, be sure to break up the old sod layer. Soil deposits of less than 1 inch can be spread and dragged into the grass surface as a beneficial layer of topdressing.

Core aerifying, slicing or verticutting can help dry out the surface and break up a 1-inch layer of crusty soil and algae left from flooding. If lawns were flooded for less than 4 days, the soil temperature remained below 60 degrees Fahrenheit and water was moving to supply oxygen, the lawn has a good chance of recovering. In the Missouri flood of 1993, some areas that experienced a brief surge of water survived; however, most of the flooded lawns were a complete loss.

As flood waters recede, sun and high temperatures can literally cook the turf in its soggy surroundings. If there is a positive side to summer flooding, it is that the dead lawns can be prepared for the perfect time to re-plant — Aug. 25 through Sept. 15. Planting early in the fall ensures a good stand of grass going into the winter. Cool-season grasses should be seeded no later than Oct. 15.

Choose the scenario that fits your situation:

Silted lawns — 1 inch or less

Lawns submerged less than 4 days and covered with an inch or less of silt have a good chance to recover.

To assist recovery:

- If water use is unrestricted in your area, use a garden hose to wash as much silt as possible from the lawn.
- To encourage root development, keep the remaining silt crust broken throughout the growing season or until grass

is well established. Use a steel tooth garden rake.

Caution

Steel tooth rakes can pull out the turf if pushed too deeply. A mechanical, hollow-tined aerator can be used to break up the silt crust. The lawn will benefit from power raking or verticutting in September.

- Apply a nitrogen fertilizer to the lawn. Use a quick-release form at a rate of 1/2 pound of nitrogen per 1,000 square feet of lawn area.
- Have the soil tested as soon as possible to determine lime, phosphorous and potassium requirements. Follow the recommendations given with the soil test report.
- If lawn recovery is spotty or generally thin, follow the lawn renovation instructions outlined in MU publication G6700, *Cool-Season Grasses: Lawn Establishment and Renovation*.

Silted lawns — more than 1 inch

Lawns covered with more than 1 inch of silt may be heavily damaged, with only a slight chance of recovery. Degree of recovery will vary with grass species and depth of silt. Re-establish the lawn as follows:

- Remove as much silt as possible, especially if silt accumulation exceeds 3 inches, as soon as possible after water recedes.
- If silt is less than 3 inches or has been removed to this depth, till the area, making sure silt is mixed thoroughly and uniformly in the top 4 to 6 inches of original soil.
- Re-seed or re-plant the areas as you would to establish a new lawn.

Cool-season grasses can be seeded anytime between Aug. 20 and Sept. 30. Turf-type tall fescue or Kentucky bluegrass sod can also be used to provide an instant lawn. Do not sod over existing dead or buried vegetation. The old dead layer of grass must be thoroughly tilled into the soil before laying new sod.

Flooded lawns (not silted)

Degree of injury will depend on duration of submergence, water depth, temperature, grass species, light intensity and the condition of grass prior to flooding. Grass will not survive as long at water temperatures above 60 degrees Fahrenheit as at lower temperatures.

Ryegrass and red fescue have poor tolerance to submergence. Bermudagrass, zoysia and some buffalograss varieties such as '609' have excellent tolerance to submergence. Kentucky bluegrass, tall fescue and bentgrass are intermediate in tolerance.

Most grasses will survive 4 to 6 days submergence at normal summer temperatures. Aerate and lightly fertilize flooded areas (1/2 pound nitrogen per 1,000 square feet) as soon as possible after water recedes. Areas submerged more than 4 to 6 days may not survive and will require complete re-establishment as previously noted.

Loss of topsoil — eroded areas

- Where topsoil has been greatly eroded, replace it to a depth of 4 to 6 inches.
- If topsoil is unavailable or too expensive, improve existing soil by adding organic matter such as peat, manure or other organic materials, along with sand. Do not use sand alone. Apply these materials at the rate of 3 cubic yards per 1,000 square feet of lawn area and work materials into the top 4 inches of subsoil. If you are able to till deeper, the amount of the amendments can be increased accordingly. A temporary lawn, established immediately and later worked into the subsoil, can also be a source of organic matter.

Establishing temporary lawns

- Where warm-season lawns must be completely re-established and immediate cover is needed, scratch the soil surface with a hand rake or similar tillage tool.
- Seed common ryegrass at a rate of 4 to 5 pounds per 1,000 square feet.
- Till the ryegrass under the following June for re-establishment of warm-season grass. Seed permanent grasses or plant vegetative material.

Oil and chemical spills

If you suspect a problem, contact your local Missouri Department of Natural Resources office or their temporary Helpline at 800-222-1300 for advice on how to proceed.

Turf diseases

Turf diseases may be prevalent on lawns that survived flooding. Your local MU Extension center has information on controlling turf diseases.

Weeds

Flood water may carry and spread weed seeds. However, weed control should not be a primary concern, since a weed cover is better than no cover and will even help dry out soil. Weeds can be controlled best with chemicals in the fall or spring. Before planting cool-season grasses this fall, a nonselective application of Round-Up can kill all existing vegetation, including weeds and undesirable lawn grasses.

Related MU Extension publications

- G6700, Cool-Season Grasses: Lawn Establishment and Renovation
<http://extension.missouri.edu/p/G6700>
- G6954, Soil Testing for Lawns
<http://extension.missouri.edu/p/G6954>
- MP733, Lawn and Garden Soil Test Interpretations and Fertilizer Recommendation Guide
<http://extension.missouri.edu/p/MP733>

Order publications online at <http://extension.missouri.edu/explore/shop/> or call toll-free 800-292-0969.



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