



Dam Maintenance Checklist

Dam maintenance should be done on a regular basis to identify and correct small problems before they develop into major problems that require extensive repairs and permits. Maintenance activities and best management practices include:

Mowing — One of the most important maintenance activities, routine mowing, prevents large weeds, woody shrubs, or trees on your dam and helps to keep grass growing on the dam surface. Mowing also allows for easier inspections.

Bare Spots — The entire dam should be covered in grassy vegetation, which holds soil and helps prevent erosion. Seed or sod any bare spots. Fertilizer or liming may be needed to help grass grow vigorously.



Bare area caused by livestock

Trees and Woody Shrubs — Trees and woody shrubs shade out grassy vegetation and concentrate rainwater runoff into rivulets, causing erosion. Tree roots can provide channels for water to flow inside the dam. Trees that are blown over in storms can pull up large pieces of dams. For tree removal, cut down and remove trees or woody vegetation with a trunk less than 6 inches in diameter. For trees greater than 6 inches in diameter, cut the tree down, grub or otherwise remove large roots, fill the hole, and stabilize it with grassy vegetation.

Surface Erosion — In areas where rills or gullies are less than 6 inches deep, fill eroded areas with soil, then compact and seed or sod. If extensive or deep areas of erosion occur, additional measures may be needed to stabilize the eroded areas.

Cattle and Other Livestock — Livestock should be fenced or otherwise excluded from the dam. Hoofed animals can cause bare areas and leave trails that can lead to erosion on dams.

Blocked Intake Structures, Outfalls or Spillways — Inspect structures regularly and remove blockage, which can lead to premature failure of the dam. For example, trash racks on the riser (intake) can become clogged by vegetation or other debris. Outfalls may become blocked by sediment or from trees falling. These blockages can affect the normal flow of water and lead to raised water levels behind the dam, cause excessive seepage, flooding or frequent flow through the emergency spillway. If beavers are causing the blockage, then they may need to be removed from the pond.



Overgrown dam, at risk for erosion

Emergency Spillway (ESPY) — The ESPY is designed to allow water to flow out of the pond without overtopping the dam. If the ESPY is blocked, then the dam may be overtopped, cause erosion and possibly failure of the dam. Fallen or growing trees, shrubs, yard waste, other trash or fill dirt can block the ESPY. No fences or other structures should be in the ESPY.

Gate Valves — Gate valves are generally used to drain a pond. They should be fully opened and closed at least once a year or they may become inoperable. Gate valves are needed to lower pond water levels for aquatic plant management and to prevent catastrophic failure if a major problem develops on the dam.



Northwest Florida Water Management District

How to Inspect and Maintain Your Earthen Dam





How To Inspect and Maintain Your Earthen Dam

What is an earthen dam?

An earthen embankment dam is formed of compacted layers of soil and often impounds water for stormwater, recreation, or agricultural use. It typically has a pipe and riser system to conduct water through the dam and an emergency spillway to prevent water from flowing over the dam if the pipe and riser become blocked or cannot accommodate the water volume leaving the reservoir.

Why are inspections and maintenance important?

All dams require inspection and maintenance. Periodic inspections and proper maintenance may prevent problems from developing and reduce the costs of repairs. Minor problems can often be found and corrected before they become larger and more costly, and even possibly threaten the integrity of the dam. An improperly maintained dam is more likely to fail and release sediments along with large quantities of water downstream that may impact neighboring properties, roads, or even cause loss of life.

How do I properly maintain a dam?

If you have a dam that was constructed or repaired after 1985, it is likely that you have an Operation and Maintenance Permit issued by the Northwest Florida Water Management District. This permit contains procedures specific to your dam. If you cannot locate your permit, or do not know if your dam has a permit, please contact the District to obtain a copy.

If you do not have an Operation and Maintenance Permit, this brochure can be used as a guide for the operation and maintenance of your dam. This brochure is intended as a simplified guide and not as a complete manual. Please contact the District with any questions or if you need assistance inspecting your dam and assessing conditions.

How can I have my dam professionally inspected?

The Northwest Florida Water Management District will inspect your dam and provide you with a list of deficiencies and recommendations, free of charge. The District does not certify the inspection. For a complete, certified inspection contact a consultant or professional engineer.

For more information about dam maintenance or your dam, or to schedule a dam inspection, please contact the Northwest Florida Water Management District:

Tallahassee Field Office	Crestview Field Office
Carr Building, Suite 225 3800 Commonwealth Blvd. Tallahassee, FL 32399 (850) 921-2986 <i>Serving Jefferson, Leon, Wakulla, Gulf, Franklin, Calhoun, Liberty, Jackson and Gadsden counties.</i>	180 East Redstone Avenue Crestview, FL 32539 (850) 683-5044 <i>Serving Escambia, Walton, Santa Rosa, Okaloosa, Washington, Bay and Holmes counties.</i>

Inspection Checklist

It is recommended that owners inspect their dams at least once each year and after any major rain event. Inspections should include walking the top of the dam and the base of the backslope, checking the dam for all of the maintenance items on the back page, and paying particular attention to:

Animal Burrows — Animals such as armadillos and beavers can tunnel into, and sometimes even through, earthen dams. If caught early, the burrows can be filled and stabilized. If left untreated, animal burrows allow for weak points in the dam and can cause the dam to fail.

Dam Crest — Look along the dam top or crest to ensure the crest is flat and uniform. Dips or sunken areas excluding the emergency spillway could indicate collapsed animal burrows or failures in the piping system. Pay particular attention to the area between the riser and where the barrel exits the dam.

Seepage — Water flowing slowly through earthen dams is considered seepage. This water may show up as areas of vigorous vegetative growth or at vegetation types different from the rest of the dam. Degrees of seepage can range from small areas of wetland vegetation at the bottom edge or “toe” of the dam to large saturated areas on the surface with water running down the backslope. In severe instances, water exiting the dam may resemble a spring, which is known as a boil. Severe seepage can be a sign of impending dam failure and should be inspected immediately by a qualified professional.

Leaking Pipes — The pipe and riser system common to most dams can develop leaks for many reasons. A leaking riser generally indicates that the piping material may have exceeded its expected lifespan. This can lead to lower water levels in the pond. Leaks in the pipe through a dam (called the barrel) are usually hard to spot and may not be noticed until a problem develops. Sediments at the outfall may indicate a leaking barrel pipe. Depressed areas or sinkholes may also develop over a leaking barrel. These may rapidly become large voids in the dam and threaten its stability. A leaking barrel almost always must be replaced by excavating the pipe from the dam and reconstructing part of the dam. These types of repairs require a permit from the Northwest Florida Water Management District and the services of a registered professional engineer.

