

# Permanent Wetlands

## *Brief Description*



A. Reseitar

Permanent wetlands maintain standing water throughout the year.

Permanent wetlands are very variable and include marshes, ponds, lakes, impoundments, and excavated dugouts. They are distinguishable from ephemeral wetlands because they hold water all year. While man-made wetlands are common throughout the Midwest, naturally occurring permanent wetlands are more abundant in northerly, glaciated portions of the region. Modified wetlands can be a result of human or beaver activities and changes in water levels and their patterns of fluctuation may greatly influence the character of the habitat and its assemblage of amphibians and reptiles.

## *Species Associated with Permanent Wetlands*

Permanent wetlands provide critical habitat for a diverse array of amphibians and reptiles. Amphibians that live and breed in permanent wetlands include the Mudpuppy, Bullfrog, Green Frog, and Mink Frog. Reptiles, including the Snapping Turtle, Common Musk Turtle, Red-eared Slider, Painted Turtle, and Graham's Crayfish Snake, may also be permanent residents in these environs. **While many species of reptiles and amphibians rely on permanent wetlands for all of their life cycle, other species utilize these areas in combination with surrounding habitats.** For example, the Common Map Turtle, Spiny Softshell, Common Garter, Eastern Ribbon, and Northern Water Snake are typically associated with riverine habitats, yet they will also occupy permanent wetlands near rivers and streams. There are also many species of amphibians and reptiles that rely on both permanent and ephemeral wetlands. For instance, Leopard Frogs breed in fishless seasonal wetlands yet overwinter in deeper permanent wetlands.



A. Reseitar

Common Musk Turtles live and breed in permanent wetlands.

### CRITICAL CONSIDERATIONS FOR PERMANENT WETLANDS

- Avoid clearing or replacing natural native vegetation along the wetland edge, as it serves to provide habitat, protect water quality, and prevent erosion. A minimum of 50 feet is recommended, and more is better.
- Above and beyond the wetland buffer, provide the adjacent, upland habitat required by many wetland species. This should be 500 feet or wider if possible.
- Maintain the natural water levels and fluctuations of wetlands.
- Do not introduce non-native plants or animals—they may harm or replace native species.
- Leave logs, snags, and other woody debris on site and replace if removed.

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## *Managing Permanent Wetlands to Benefit Amphibians and Reptiles*

Perhaps one of the most important management steps is to **maintain both the natural assemblage of plant and animal species and the natural water levels and fluctuations of the wetland**. Releasing live bait such as fish, non-native frogs, and crayfish can have catastrophic results on the resident amphibian and reptile populations. **Stocking panfish such as bluegill can have a major impact on the amphibian assemblage of a wetland** as they readily predate eggs and larvae. Likewise, the release of pet turtles, frogs, or aquarium fish into these areas may have negative consequences including the introduction of disease.

**Establishing buffer zones around permanent wetlands is especially important in developed areas.** It is preferable that development of lake homes and cabins be limited, but where structures are built, consider extending native vegetation as far into the lake as vegetation will grow. This will give herps the cover they need in open water areas.

**A vegetated buffer zone on land will help reduce siltation and run-off** containing harmful chemicals from roads and agricultural fields. The most effective buffer will occupy 50–75 percent or more of shoreline frontage. Avoid mowing down to the water's edge, and limit the placement of rip-rap (revetment) only to those areas where it is actually necessary. **The upland terrestrial buffer should be at least 50 feet wide, but a broader one is preferred.** Many wetland complexes and underground aquifers have been negatively affected by leaking septic tanks and pipelines. To eliminate waste runoff locate septic systems and pipeline crossings outside of the wetland area. **Prevent direct runoff from agricultural or residential areas into permanent wetland basins.**



R. Queen

**Maintain a buffer of natural vegetation around water bodies.**



B. Kingsbury

**Spotted Turtles may use both ephemeral and permanent wetlands.**

**Many of the animals associated with permanent wetlands also rely on the uplands around them.** The wetland buffers suggested above are intended solely to protect the water quality of the wetland itself. Providing adequate terrestrial habitat for species such as turtles, which climb onto land to lay their eggs, or salamanders, which come to ponds only to breed, requires the protection of a more extensive area of land. **Research indicates that such areas should be 500 feet or more in width to maximize conservation benefits.** If this is not possible, narrower width zones are better than none, but again, keep in mind that this is necessary habitat not just a buffer.

**Maintaining natural connections between wetlands and surrounding upland habitats will benefit many semi-aquatic species.** Recall that turtles move through uplands as they travel between wetlands or move to nesting sites. Many species of amphibians also migrate seasonally, moving between overwintering areas and permanent wetlands to breed.

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**Maintaining suitable cover in corridors will help provide safe passage for herps.** Allowing for adequate terrestrial habitat around wetlands provides additional protection and does not rely on knowledge of travel patterns. In addition to protecting habitat in these travel corridors, try to **eliminate barriers to amphibian and reptile dispersal and migration.** For example, areas with rip-rap and fencing can prevent turtles from reaching important nest sites. If such structures are required, use them sparingly or place them outside sensitive areas.

**Holding ponds can be constructed along drainage channels to reduce siltation and the movement of heavy metals and chemicals into wetlands. The use of chemicals such as fertilizers and pesticides within this buffer zone should be reduced or eliminated.** Refer to the Toolkit in this guide for ideas on techniques that may be used in place of pesticides. Where possible, **man-made drainages into or out of wetlands should be eliminated by either destroying or removing drain tiles or by filling ditches.** The Alteration of Water Tables section of the Toolkit provides more information on such activities.



J. Roe

**Snapping Turtles often move through upland habitats as they travel between wetlands.**

**Many techniques can be incorporated into a management plan that will enhance and restore the quality of wetlands on your property.** To the amazement of some gardeners, their flowerbeds get annual visits from egg-laden Painted Turtles who find the exposed soils attractive as nest sites. Taking advantage of this, **consider creating sparsely vegetated openings on well-drained soils to provide nesting sites for turtles.** However, be sure to construct these areas away from wetland edges to prevent sediment runoff.

**It may also be possible to increase the diversity of reptiles and amphibians on your property by creating shallow, ephemeral wetlands near permanent water.** The addition of shallow wetlands adjacent to the existing permanent wetland will provide a diversity of water depths and patterns of fluctuation, and that may attract a wider assemblage of species.

**Opt for leaving logs, snags, and other coarse woody debris in place.** Structures such as logs and dead trees, both standing and fallen, provide habitat for many reptile and amphibian species and can help reduce erosion. If woody debris has been removed from these areas on your property, consider replacing it in suitable sites along the shoreline or even out in the water offshore. The addition of such structures on land will provide hiding places for many herps, and offshore logs protruding from the water make great basking sites for turtles.

**Where erosion is a problem, plant native aquatic vegetation in the wetland and native grasses, shrubs, and trees along the shoreline.** Also consider restricting or eliminating shoreline access by livestock in areas susceptible to shoreline erosion. Encourage lakeshore owners to restore native aquatic vegetation in areas where it has been removed. Spread the word about the importance of natural shorelines by educating members of lake associations. A great resource for guidance in protecting and restoring shoreline areas is the *Restore Your Shore* CD. Please refer to the Resources module of this guide for details.



B. MacGowan

**An example of what not to do. It is important to maintain a natural vegetation buffer around the waters' edge. Steep banks are also detrimental.**

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The removal of exotic plant species such as purple loosestrife is an important aspect of maintaining the natural health of wetland systems. When controlling for exotic plant species, avoid using pesticides in or around wetlands. If application cannot be avoided, use targeted treatment methods, such as wick application instead of broadcast spraying. Consider using an alternative technique in all cases. Please refer to the Toolkit module of this guide for ideas. The use of pesticides in permanent wetland environments should be considered as a “last resort” only.



A. Resalat

**Bullfrogs live and breed in permanent wetlands.**

**It is important that the natural animal assemblage be maintained in wetlands wherever possible.** Many permanent wetlands across the Midwest have been stocked with fish such

as bluegill, carp, and bullhead. These fish often preclude the presence of many amphibian species or drastically reduce their numbers by preying on eggs, juveniles, and adults, in addition to reducing the quality of the wetland habitat. It is possible for resource managers to remove these introduced fish from permanent wetlands by using controlled drawdowns or reverse aeration techniques. However, incorrect uses of such techniques, such as drawing water down at the wrong time, pose a serious danger to desirable herps. We recommend that you first consult local conservation districts and herpetologists for assistance. Please refer to the Alteration of Water Tables section of the Toolkit for more details.

## *Integrative Management Ideas*

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**The protection and maintenance of permanent wetlands and their surrounding habitat does not have to completely limit other development or land-use practices on your property.** By considering some alternative techniques it is possible to maintain multiple land-use practices on your property while also maintaining a healthy wetland environment. For instance, **avoid deepening ephemeral wetlands to create permanent ponds.** Instead, provide habitat diversity by retaining the ephemeral wetland and creating the farm pond nearby. This will successfully maintain the health of the existing wetland while also providing the desired wetland infrastructure. Try to minimize the disturbance of native plant communities while conducting such practices. When possible, spoil piles should be seeded with native grasses and forbs. Also, avoid filling wetlands or portions of them. **When creating wetlands for mitigation purposes, consider placing wetlands in areas that will maximize their benefits to all wildlife.**

**If roads need to be constructed, try to place them outside buffer areas.** For roads that already exist and pass through known or suspected sensitive areas, minimize traffic or, if possible, close them seasonally during the peak of turtle nesting (May–July) and during amphibian breeding (late winter). The placement of informative signs may help the public understand why such measures are important. “Herp-friendly” curbs with gradually sloping sides should be installed along residential roads in the vicinity of wetlands.

**Avoid concentrating recreational use, such as swimming and boating, in sections of permanent wetlands that have a history of heavy reptile and amphibian use.** This does not mean that these activities need to be eliminated altogether, but rather restricted to or focused in other areas. It may also be a good idea to add seasonal use restrictions in certain areas. That way the effect of these activities during particularly sensitive times, such as during turtle nesting (May–July) and amphibian migration periods (late winter), will be minimized.



This is the Permanent Wetlands module of the PARC publication, “**Habitat Management Guidelines for Amphibians and Reptiles of the Midwest**,” ISBN # 0-9667402-1-1. Please visit [www.parcplace.org](http://www.parcplace.org) for further information or copies of the complete document, or visit <http://herpcenter.ipfw.edu> for a Web-based version of these materials.