

Wetland Buffers

Designing and Maintaining a Vegetated Wetland Buffer

Habitats for Healthy Waters—Fact Sheet #3

Wetland Buffers—What are they and why are they important?

Wetlands provide many functions including flood moderation, groundwater recharge, water quality improvement, wildlife habitat, research and aesthetic values. An effective way to protect and enhance existing wetlands is to ensure there is an adequate vegetated buffer surrounding the wetland. Wetland buffers are areas of adjacent, undisturbed vegetation that reduce adverse effects to wetland function and value from adjacent development and activities. Adequate buffers are essential for “healthy” wetlands.

Buffer Functions:

- Reduce rapid water level fluctuations in wetlands.
- Maintain and improve water quality by trapping and absorbing sediments, nutrients and pollutants before they reach the wetland.
- Reduce field erosion into wetlands and stabilize riparian areas.
- Decrease wetland disturbance from activities in adjacent areas.
- Provide food, cover, travel corridors and breeding areas for wildlife.
- Properly designed buffers can minimize goose damage to adjacent crops in the spring by providing a physical barrier to young goose broods.



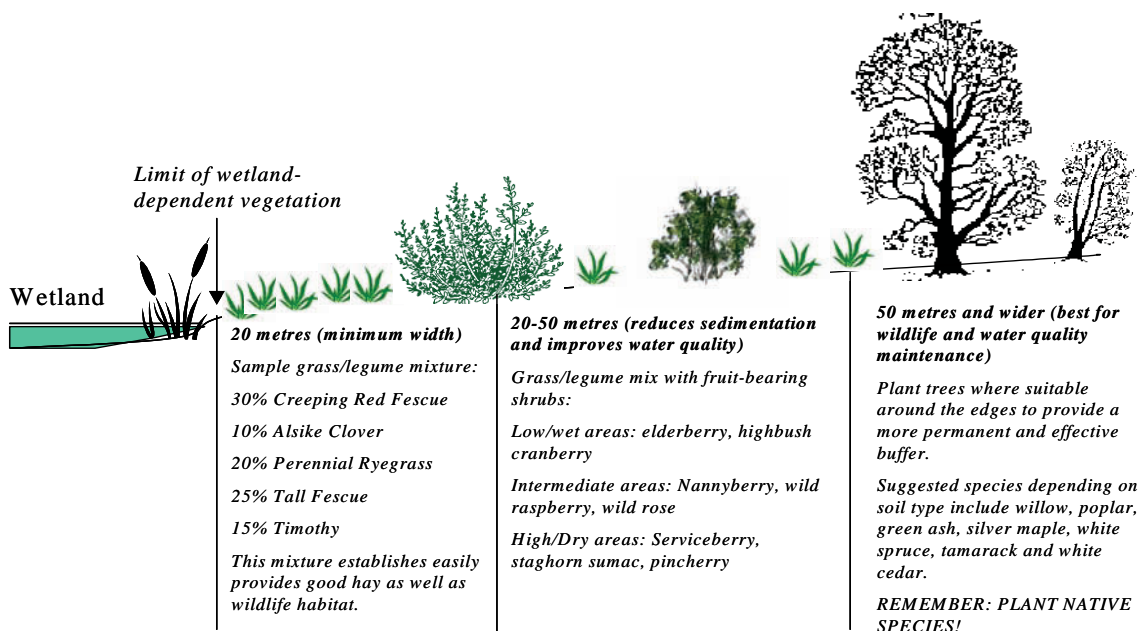
Source: Andy Graham (OSCIA)

This livestock exclusion fence protects the vegetated buffer so that it can filter out nutrients coming from the adjacent pasture. Water for the livestock is pumped into a trough through a solar-powered system. Livestock can show better weight gain if provided with a clean water source compared to drinking directly from a wetland.

What makes a good buffer?

The most effective for both wildlife and water quality protection is a diverse, multilayered, undisturbed vegetation community. Trees and shrubs increase the effectiveness of the buffer and enhance attractiveness to wildlife. The buffer needs to be wide enough to slow and reduce surface runoff and provide wildlife habitat.

An Example of an Effective Buffer with High Wildlife Value



How Wide Should a Buffer Be?

In general, the wider the better! Most research shows effective buffers are between 20-200 metres (60- 600 feet) wide. Minimum buffer width depends on various factors including:

Slope: More slope = more buffer. If the slope is greater than 5% then width should exceed 20 metres (60 feet).

Soil type: Low permeability (heavy clay) requires greater buffer width.

Adjacent land use: Row crops need a wider buffer than hay or pasture.

Purpose of Buffer: Water quality maintenance, wildlife habitat, disturbance reduction etc...

Wetland size and function: Large wetlands (>10 hectares/25 acres) with high wildlife values require wide buffers (>200 metres/600 feet). Small, deep, excavated (dug) ponds with little wildlife or hydrological value may only require a 3 metre (10 foot) buffer.

A conservative rule of thumb is to have a 4:1 ratio of buffer area to wetland area (one acre of wetland=4 acres of buffer), however, **ANY BUFFER IS BETTER THAN NO BUFFER!**



Source: Andy Graham (OSCIA)

Slope is an important factor when determining proper buffer width. This wetland buffer is over 50 metres wide because of the steep slope between the wetland and cultivated field. A buffer this wide improves water quality and reduces the impacts of predation on ground-nesting birds.

Buffer Management



Use a "flushing bar" to reduce wildlife mortality when mowing your buffer. Contact Ducks Unlimited Canada for flushing bar plans. (1-705-721-4444)

Established grassed buffers should be monitored and maintained to ensure they sustain their maximum benefit for wildlife and water quality. After the first five years the buffer should be hayed on an annual or biannual basis. Periodic removal of the grass will rejuvenate the buffer and produce denser plant and root growth. Remember to mow the buffer between July 15th and August 15th to reduce damage to nests of waterfowl and other ground-nesting birds. Trees or shrubs require little management, however, if thinning is required then cuttings can be placed in piles throughout the buffer to provide wildlife habitat. Limit use of fertilizers or pesticides in your buffer and exercise caution when applying these chemicals to prevent contamination of the wetland

The "Habitats for Healthy Waters" program is a three-year (2005-2007) initiative to raise the awareness of wetland values among residents of Elgin, Oxford and Middlesex Counties. This project will also help landowners implement wetland stewardship practices that provide benefits to agriculture and the rural community through a series of demonstration sites, workshops and educational material.

Other sources of buffer information:

- OMNR Extension Note: "Buffers Protect the Environment"
- OMAF Info sheet #22: "Wetlands and Wildlife Ponds"
- Environment Canada: "Considerations When Working Around Wetlands"
- Ag Canada and OMAF Best Management Practices Series: "Fish and Wildlife Habitat Management" "Farm Forestry and Habitat Management", "Water Management" and "Buffer Strips"

For more information on wetlands or "Habitats for Healthy Waters", please contact:

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