Shoreline Buffers - The Space Between

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ILM Environments

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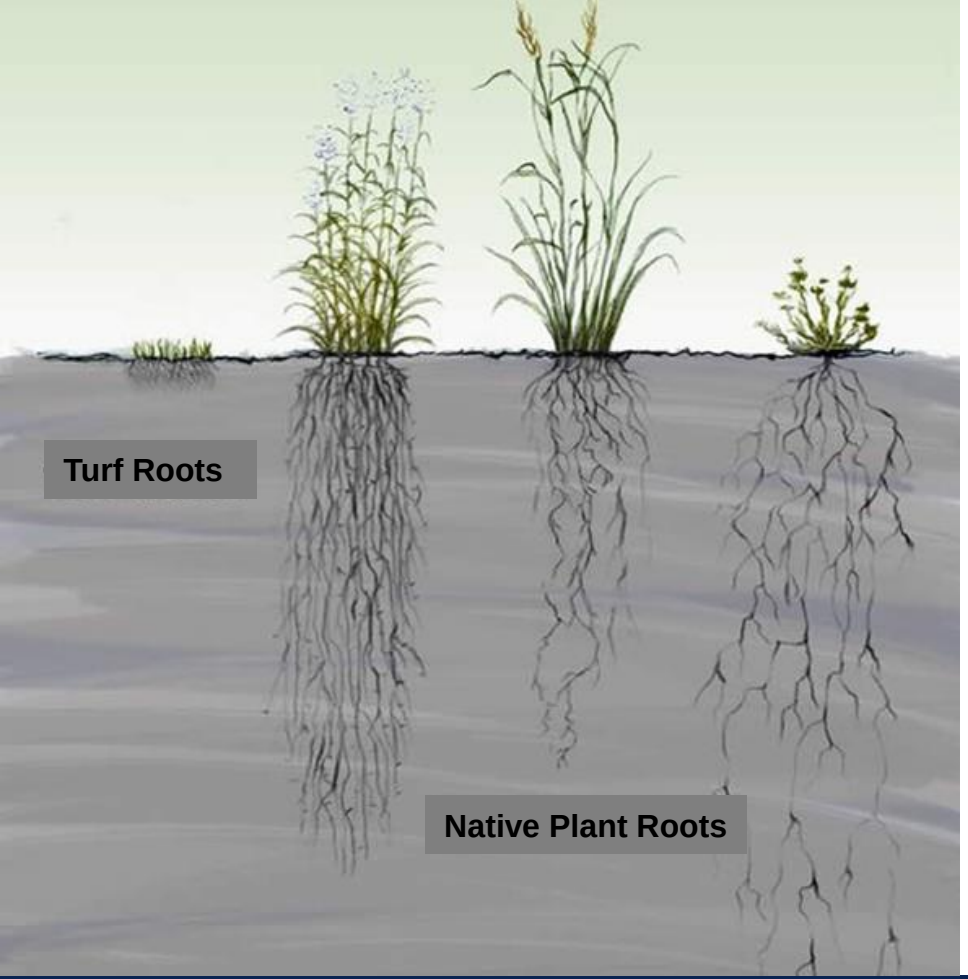
Shorelines

- Turf grass to the edge doesn’t cut it anymore
- Native shorelines vs. rip rap

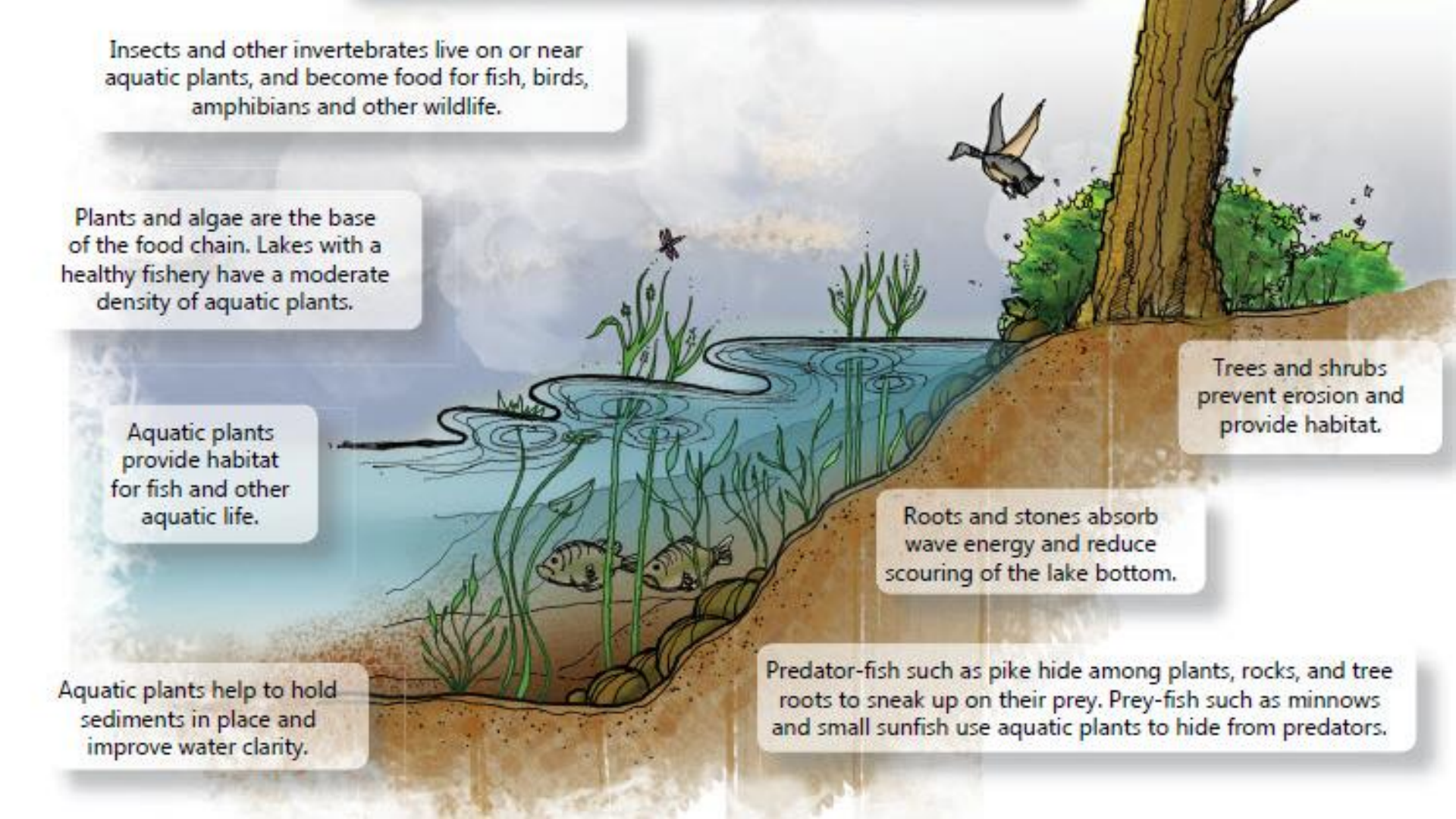
What is a Native Shoreline Buffer?

- Strip of natural vegetation along the bank of a stream, pond or lake.
- “Buffers” the waterbody from more developed areas, especially roads, driveways and lawns.
- Optimal width of 30 feet but take what you can get!



How to Build a Shoreline Buffer?

Native Plants!


Insects and other invertebrates live on or near aquatic plants, and become food for fish, birds, amphibians and other wildlife.
Plants and algae are the base of the food chain. Lakes with a healthy fishery have a moderate density of aquatic plants.
Aquatic plants provide habitat for fish and other aquatic life.
Aquatic plants help to hold sediments in place and improve water clarity.
Trees and shrubs prevent erosion and provide habitat.
Roots and stones absorb wave energy and reduce scouring of the lake bottom.
Predator-fish such as pike hide among plants, rocks, and tree roots to sneak up on their prey. Prey-fish such as minnows and small sunfish use aquatic plants to hide from predators.

Native Buffer Installation

- Site Preparation
- Planting or Seeding
- Maintenance

Site Preparation

- Herbicide turf and plant into it.

Site Preparation

- Smother existing unwanted plant material.

Site Preparation

- Mechanically remove existing material.
- Removing woody vegetation takes muscle!

When to amend?

When to amend?

Rule of thumb—Compost is everything! Food scraps, manures or green waste all have their fair share of nutrients. Apply it as an amendment to any soil for nutrient benefits and rich improvements.

Soil-specific recommendations:

- **SANDY SOIL:** If the sand is too sandy, then amend with manure or compost (including grass clippings, humus and leaf mold) will help to improve the soil the fastest. Be cautious not to add too much as the salt levels with rise.

- **CLAY SOIL:** If the soil is clay, be sure not to add sand, as clay already holds in water. The mix will likely produce a concrete-like soil structure and will be harder to work with. Bark, sawdust, manure, leaf mold, compost and peat moss are among the organic amendments commonly used to improve clay soil.

- **SATURATED SOIL:** If the soil is very wet, add air! Excessive soils moisture is a result of poor drainage and lack of oxygen. Be sure follow proper planting procedures such as using a Bioswale, or other drainage methods to help with storm-water management. Do not over-hydrate soils with irrigation systems.

- **HYDROPHOBIC SOIL:** When the soil doesn't absorb water and repels it, repeatedly sprinkle the surface lightly with water, making sure there is no run off. Covering the surface with a mulch such as straw, leaves, wood chips, or compost are great additives before and after watering. Adding amendments just before a good rain will also help break up and rejuvenate the soil.

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Soil

- Know where your soil is coming from.
- Soil filled with weed seeds will set you back!

Installation

Installation

Seeding

- More cost effective.
- Germination takes time, can even taken several years to establish.
- Some native seeds require a freeze thaw cycle in order to germinate.
- Often require erosion control matting, which some clients find unattractive.

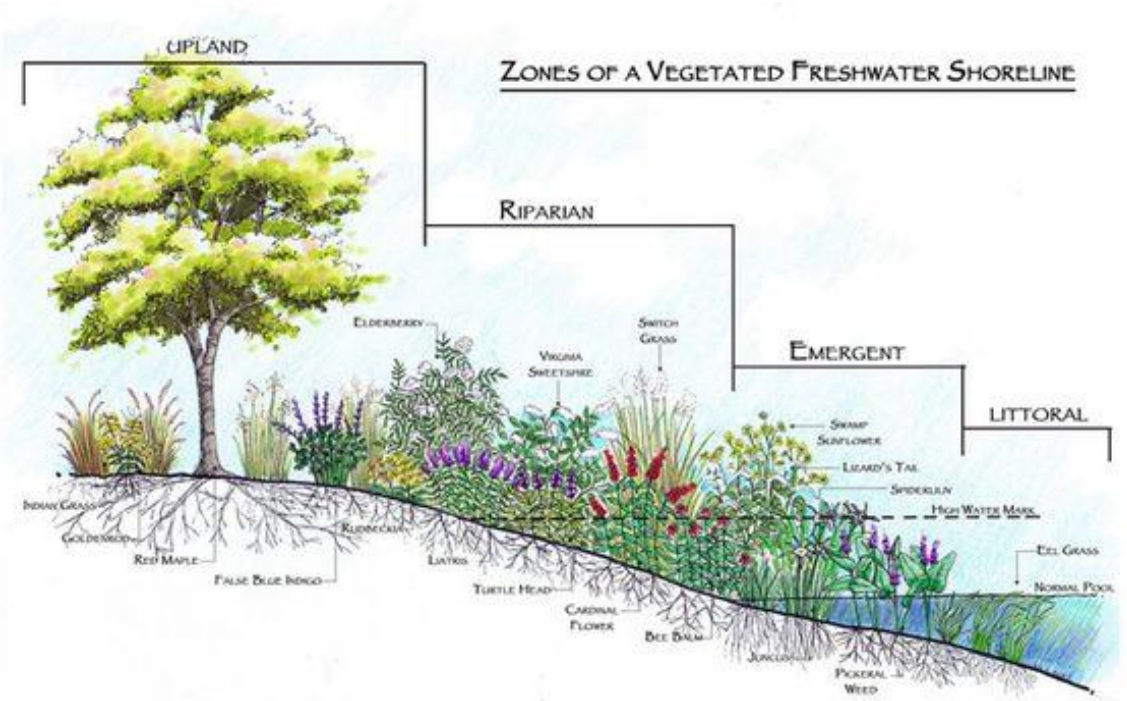
Installation

Planting

- Plugs are generally the more expensive option but provide a more immediate result.
- If planted correctly, and in the appropriate season (Spring/Fall), some plugs can flower the same year that they are installed.
- Erosion control is achieved quicker with plugs vs seed because plugs already have robust root systems.
- In areas with high potential for predation by geese, deer, muskrats etc. fencing may need to be installed.

Native Plants

- Emergents
- Riparian (saturated soils)
- Upland



Favorite Native Plants

Emergents

- Pickerel Weed
- Burr Reed
- River Bulrush
- Blue Flag Iris
- Sweet Flag Iris
- Wool Grass
- Arrowhead
- American Water Plantain
- Swamp Rose Mallow
- Hard Stem Bulrush

Favorite Native Plants

Riparian (saturated soils)

- Swamp Milkweed
- Fox Sedge
- Bottlebrush sedge
- Great Blue Lobelia
- Cardinal Flower
- Obedient Plant
- Marsh Blazing Star
- Sneezeweed
- Mountain Mint
- Switchgrass

Favorite Native Plants

Upland

- Pale Purple Coneflower
- Purple Coneflower
- Foxglove Beardtongue
- Prairie Blazing Star
- Butterfly Milkweed
- Wild Quinine
- Purple Prairie Clover
- White Prairie Clover
- Round Headed Bush Clover
- Stiff Goldenrod
- Little Bluestem
- Side Oats Grama
- Prairie Dropseed

Maintenance

YEAR 1-

- Selective herbicide visits to control invasive/weedy species.
- Selective mowing or hand pulling (determined by size of natural area and densities) to remove biennial weedy species such as *Queen Annes Lace, Evening Primrose, Giant Ragweed, lettuces, mustards* before they set seed. Timing varies by species. Generally, plan for 4 stewardship visits.
- Water in periods of drought.

YEAR 2-

- Selective herbicide visits to control invasive species/weedy species.
- Selective mowing or hand pulling (determined by size of natural area and densities) to remove biennial weedy species such as *Queen Annes Lace, Evening Primrose, Giant Ragweed, lettuces, mustards* before they set seed. Timing varies by species which is why we generally have 4 stewardship visits for natural areas.
- Supplemental seeding and plugging as necessary.

YEAR 3-

- Selective herbicide visits to control invasive species/weedy species.
- Selective mowing or hand pulling (determined by size of natural area and densities) to remove biennial weedy species such as *Queen Annes Lace, Evening Primrose, Giant Ragweed, lettuces, mustards* before they set seed. Timing varies by species which is why we generally have 4 stewardship visits for natural areas.
- Supplemental seeding and plugging as necessary.
- Prescribed burn (if desired by client/site conditions allow).

Hybernia

- 32 ponds
- Entering year six of buffer installation and management
- 13,000 linear feet of shoreline (out of 21,000 linear feet available) have been naturalized.
- Goal to naturalize all shorelines by end of 2023.

Hybernia

- Typical “before”

Hybernia

- Original rip rap from the 90’s has washed into the ponds.
- Result is undercut shoreline with erosion concerns.
- HOA has opted to install native buffers instead of replacing rip rap
- So many benefits!

Hybernia

- Shoreline buffer of five feet.
- Aesthetics is key to residents accepting this ongoing project.
- Plants are low-profile to keep views open.
- Strive to achieve a more “landscaped” look.

Hybernia

- Resident swans keep geese away.
- Need wildlife fencing to protect new plugs.

Hybernia

- Wildlife fencing to protect new plantings.

Hybernia

- Beautiful Results!
- Plants slow and absorb water
- Habitat for pollinators
- Deters geese
- Less mowing

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Thank you

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