

Native plant selection process – wet detention pond

General site conditions to investigate during site analysis

- Texture, organic content and pH of the soil
- Adjacent plant communities
- Surrounding weedy vegetation
- Aspect (north-, south-, east- or west-facing slope)
- Anticipated water levels or soil moisture
- Slopes
- Amount of sun or shade

Environmental threats to investigate

- Flood depth and duration
- Turbidity
- Pollutants and toxins
- Nutrients
- Wave energy
- Herbivores
- Low water levels
- Erosion
- Salt
- Sediment loads
- Flood frequency
- Invasive plants

Plant considerations and species

- Root systems of species vary greatly in their depth and density/biomass
 - Vegetation is often grouped into the categories of trees and shrubs, grasses/ sedges/rushes and forbs/ferns.
- Each of these categories of vegetation has its own benefits and limitations for lakeshore projects.

Trees and Shrubs

Benefits

- Trees and shrubs have a significant influence on evapotranspiration and a capacity for nutrient uptake.
- Roots aid infiltration by acting as pathways for water flow.
- Fibrous roots absorb large amounts of water.
- Trees and shrubs are useful for bank stabilization and can often be planted as cuttings. Deep rooted species are particularly useful for anchoring soil to steep slopes.
- Trees provide vertical structure in the landscape.
- Trees provide important habitat for many wildlife species.
- Trees provide important habitat for many wildlife species.

Limitations

- Landowners concerned about maintaining view corridor.
- Trees can inhibit the growth of prairie species.

Grasses, Sedges and Rushes

Benefits

- Roots of prairie grasses and other native sedges and rushes can extend deep into the ground and aid in infiltration and evapotranspiration.
- Dense root networks stabilize soil and minimize erosion.
- Wetland species, particularly broad-leaved sedges and bulrushes, generally have shallow roots but aid in evapotranspiration.
- Grasses generally have many stems and produce thatch that slows water flow and facilitates filtration, making them well suited for filter strips.
- Many grasses, sedges and rushes are efficient at nutrient uptake; some effectively bioremediate pollutants as well.
- Native grasses, sedges and rushes add winter interest to the landscape and have high wildlife value.

Limitations

- Finding suitable plant material from local ecotypes can be a challenge sometimes.
- Warm season grasses in northern Wisconsin perform less well.

Forbs and Ferns

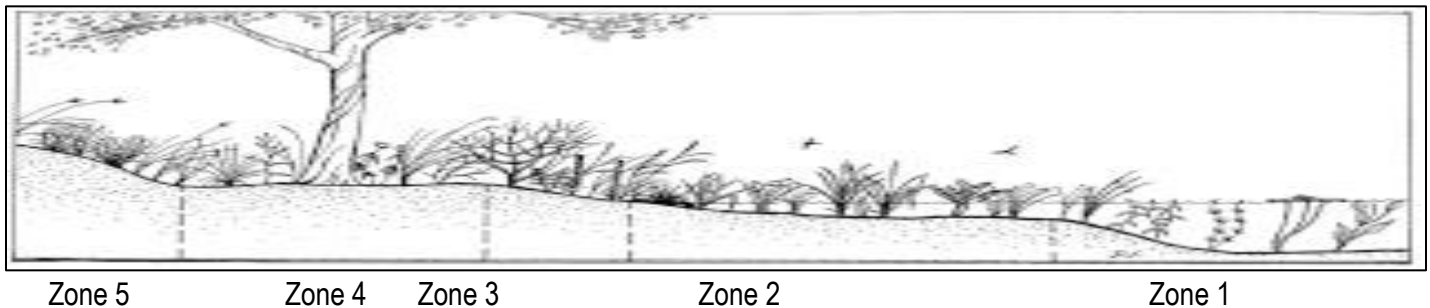
Benefits

- Roots of prairie forbs can extend deep into the ground and aid in infiltration and evapotranspiration.
- Wetland forbs, particularly broad-leaved species, generally have shallow roots but aid in evapotranspiration.
- Native forbs add aesthetic appeal to the landscape and have high wildlife value.

Limitations

- Forbs generally have fewer basal stems than grasses and may not filter stormwater as efficiently.

Plant species suitable for ponds can be grouped according to zones that change with elevation. These zones are often referred to as “plant communities.” It is useful to think about plantings in terms of plant communities because plant communities are composed of species adapted to growing together.



ZONE	PLANT COMMUNITY	HYDROLOGY
1	Submergent zone	1.5-6 feet of water
2	Emergent zone	0-18 inches of water
3	Wet meadow zone	Permanent moisture
4	Floodplain zone	Flooded during snowmelt and large storms
5	Upland zone	Seldom or never inundated (the upland zone includes prairie and forest plant communities)