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Chapter 5
Plant Selection
Chapter Discussion

“The Right Plant the Right Place”

Choosing plants and stock type

Recommended Native Plants

Where to find help
“Right Plant Right Place” Approach

Integrates

- Function
- Appearance
- Adaptability

Considers relationships

- Plants
- Wildlife (insects, mammals, birds etc.)
Plant Selection Considerations

- Ordinary High Water Mark
- Native vs. Non-Native
- Different shoreline zones
Plant Selection Considerations

**Ordinary High Water Mark**

- Usually where plants shift from mostly water-dependent to terrestrial plants
- Important to know - conditions vary greatly
- DEQ Permit requires native plants below the OHWM
Plant Selection Considerations: Native Status

**What is a native plant?**

- Occurs in a place (e.g. habitat and ecosystem) as a result of natural forces exclusive of human actions.

Species native to the U.S. and other parts of North America are generally recognized as those occurring on the continent prior to European settlement” (Plant Conservation Alliance).
Plant Selection Considerations

Should I Use Native Plants?

Consider that they:

- Have high ecological importance
- Are adapted to soil and climate in which they live
- Typically disease and pest resistant.
- Resist damage from freezing
- Have extensive root systems

**DEQ Permit requires their use below the OHWM**
Plant Selection Considerations

Should I Use Non-Native Plants?

Non-native plants are:

Plants not here before European settlement

Includes cultivars & varieties of natives.

Consider

• Overall goal of project
• Lower ecological value compared to natives
• Impacts of pest and disease control options
• Their ability to become invasive

Cornus sericea 'Kelseyi', Kelsey's Dwarf Red Twig Dogwood

Purple Loosestrife Photo:
MI Sea Grant: Dave Brenner
Native Plant Root Systems

Showing horizontal root structure

Showing vertical structure

Kentucky Blue Grass

10 ft.

8 ft.
Native Landscaping: A Continuum of Wildness

The first gardens were discovered, not planted...

- **Restoration**
  - Focus on historical vegetation and composition
  - Genotype becomes more important
  - Aesthetics are less important

- **Wildflower Meadows**
  - Wild look, but often with higher forb composition
  - May include species that are regionally, but not locally, native
  - Aesthetics become more of a concern

- **Traditional Landscaping**
  - Typically use loosest definition of “Native”
  - More plug and gallon-potted material
  - Consider native plants just like a cultivated plant

Courtesy of JFNEW
Plant Selection Considerations

**Know the Zones:** aquatic, wetland and upland

**Think about:**

- Water depth
- Frequency of flooding
- Length of inundation
- Soil moisture

Hydric Soil
Plant Zones

- A few inches of water can be the difference between survival and mortality

Drier ➔ Wetter
Species Selection

**Things to consider:**

- Soil Moisture and Type
- Sun vs. Shade
- Plant height and bloom color/timing
- Potential Competition
- Project Goals: What are you trying to accomplish?
  - Aesthetics
  - Wildlife
  - Erosion Control

“Begin with the end in mind” –Stephen Covey
MNSP Recommended Plant List Criteria

- Each native to MI
- None are threatened or endangered
- Generally broadly adapted (not very fussy)
- Broad natural distribution around the state
- Currently on the market (or could easily be brought on the market)
MNSP Recommended Plant List

Categories

3 categories: wet to moist areas

• Below the Water Level
• Between Water Level and Ordinary High Water Mark
• Above the Ordinary High Water Mark

1 category: dry areas away from the shoreline

• Upland
# MNSP Recommended Plant List

## Table Information

**Planting Zone: Below the Ordinary High Water Mark**

<table>
<thead>
<tr>
<th>Botanical Name</th>
<th>Common Name</th>
<th>Sun</th>
<th>Height</th>
<th>Bloom Time</th>
<th>Color</th>
<th>Siltation</th>
<th>Adaptive Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acorus calamus</td>
<td>Sweet flag</td>
<td>f/p</td>
<td>1’-4’</td>
<td>May-June</td>
<td>Green</td>
<td>Low</td>
<td>Clump forming, wildlife food and cover</td>
</tr>
<tr>
<td>Iris versicolor</td>
<td>Blue flag (wild iris)</td>
<td>f/p</td>
<td>2’-3’</td>
<td>May-July</td>
<td>Blue</td>
<td>Medium</td>
<td>Tuberous roots send out fibrous masses.</td>
</tr>
</tbody>
</table>
Below the Water Level Plants

- Blue Flag Iris
- Buttonbush
- Arrowhead
- Pickerel Weed
Between Water Level and Ordinary High Water Mark

Smooth Rose Mallow

Joe-pye Weed

Cardinal Flower

Great Blue Lobelia

Swamp Milkweed
Above the Ordinary High Water Mark

New England Aster

Sensitive Fern

Turtlehead

Dense blazing star

Meadowsweet

Obedient Plant

Canada blue joint grass
Upland Plants

Harebell

Foxglove Beardtongue

Black-eyed Susan

Tall Bell flower

Bee Balm, Bergamot
Additional Plant Information

Sweet Flag graph of water depth and duration. (Plants for Stormwater Design)
Planting Stock: Options

- Seed
- Plugs
- Bare Root
- Balled and burlapped
- Live Stakes
- Large Container plants

Photo: J.F. New
Plants or Seed?

Seed works better when:

- managing larger areas
- Random planting is ok
- budgets are tighter
- Maintenance ability is high

Live plants work better when:

- a more formal look is desired
- Weed competition is more likely
- There is standing water
- Smaller projects

Courtesy JFNEW
### What type of Plant?

<table>
<thead>
<tr>
<th>Live Stakes</th>
<th>Bare Root</th>
<th>Plugs</th>
<th>Large Container Plants</th>
<th>Balled and Burlapped</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inexpensive</strong></td>
<td><strong>Inexpensive</strong></td>
<td><strong>Low -Medium cost (1.50-$3/plug)</strong></td>
<td><strong>Medium to high cost</strong></td>
<td><strong>Medium to high cost</strong></td>
</tr>
<tr>
<td><strong>Best used where access and viewing aren’t issues</strong></td>
<td><strong>Use of depends on the plant and project</strong></td>
<td><strong>High availability of plant species</strong></td>
<td><strong>Great to use for an initial fuller landscape</strong></td>
<td><strong>Typically trees and shrubs</strong></td>
</tr>
<tr>
<td><strong>Excellent for erosion control</strong></td>
<td><strong>Must be harvested while dormant</strong></td>
<td><strong>Excellent growth within the first year</strong></td>
<td><strong>Excellent for a fuller landscape</strong></td>
<td><strong>Excellent for a fuller landscape</strong></td>
</tr>
<tr>
<td><strong>Can have high mortality if not done correctly</strong></td>
<td><strong>Can have high mortality if not cared for properly</strong></td>
<td><strong>Site will take about 1-2 years to completely fill in.</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Timing

Optimal Timing Depends on

- Type of material
- How wet an area is (flooding/inundation issues)
- Accessibility
- Availability of supplemental water during first year of establishment

Photo: J.F. New
Plugs: General Rule

- After threat of frost in the spring and prior to June 15th
- Can be extended if:
  - irrigation is available
  - Water levels are acceptable (standing in water)
- Prior to August 15th – to allow enough time for root establishment

Seed

- Best: late fall (frost seeding) to early/late spring
- Best: flat ground with low flood risk
- Slopes or flood risk high: spring is best
Site Preparation

Remove unwanted vegetation to minimize competition

- Mechanically
- Chemically (allow at least 2 weeks before planting natives)

Caution

- Exposing dormant weeds seeds – allow to germinate then kill off
- Destabilizes soil

Bare soil unwise at water’s edge
Finding Sources of Plants

- Michigan Native Plant Producers Association
  www.mnppa.org

- The Wildflower Association of Michigan
  www.wildflowersmich.org

- Michigan Association of Conservation Districts – check with local conservation district
  www.macd.org

- MI Nursery and Landscape Association:
  www.PlantMichiganGreen.com
Finding Professional Help

Certified Natural Shoreline Professionals List
http://www.mishorelinepartnership.org/

MNSP Certification Criteria includes:

• Classroom instruction, field training & passing grade on exam.
• Demonstrated competency in shoreline soils, plant communities, aquatic habitats, water law and permitting, wave energy assessment.
• Demonstrated competency in methods & techniques for designing natural shoreline landscaping and bioengineered erosion control on inland lakes.
• Updated every three years
Questions?