

We are often asked: when should maintenance on a restoration project start???

The answer... The day you decide to do a project!

Every step you take in planning, designing and installing your restoration project should be taking into account the long term maintenance of the project. By properly completing the preparation and design of your project you will significantly reduce the maintenance of your project in the future. Don't be fooled, restoration projects need maintenance but they can be low-maintenance if you properly design, install and care for it and not allow weeds to get to strong of a foothold.

So what are the steps to have a successful restoration that will not become a maintenance nightmare?

1. Proper Site Design

- a. Understand Site Conditions (slope of the land, shade vs. sun, Soil type, wave/wind action, current plant community, any erosion issues, size of project, presence of invasive species)
- b. Look at natural reference sites on the lake or in the same ecoregion
- c. Start with getting rid of the mower! Do any natives regrow? What are they?
- d. Incorporate biodegradable erosion control materials (biologs, erosion control fabric, brush bundles)
- e. Decide on seeds, plugs or both for restoration
- f. Use Mulch if using only plugs, trees and shrubs
- g. Plant in clumps so you know what the natives look like and any non natives that appear in the clumps can be removed
- h. Determine if there will be potential issues with geese, squirrels, muskrats, deer or other species that should be managed with fencing or other options from the start.

For more information on this subject please go to the design section of Restore Your shore at:

<http://www.dnr.state.mn.us/restoreyourshore/st/designprocess.html>

2. Proper Plant Selection

- a. Choose hardy plants for conditions, and select plants that grow in the project ecoregion
- b. Decide which areas will be seeded, plugged, dormant staked or planted with trees and shrubs
- c. Simplify plant list to start, do not choose too many different species to start
- d. Incorporate woody vegetation (trees and shrubs) where appropriate
- e. Learn what the plants you plant look like from seedling to adult
- f. Do not seed the transitional area if the area is dominant with non-natives, use plugs instead
- g. Limit planting of grasses along shorelines with Reed Canary Grass (RCG) and only plant sedges/rushes until the RCG is under control or until you feel comfortable enough in identifying RCG to start to incorporate native grasses. Choose only easily identifiable native grasses and those known to compete with RCG such as some Carex or Juncus species and native shrubs.

For more information on this subject please go to the plant section of Restore Your shore at:

<http://www.dnr.state.mn.us/restoreyourshore/st/liveplants.html>

3. Proper Site Preparation

- a. Allow adequate time for site to be prepped, one month to an entire growing season may be needed
- b. If seeding, be sure turf is adequately killed off by herbicide or smothering
- c. If site is tilled prior to seeding, be sure to allow weed seeds to germinate, kill them off then proceed with seeding. Do not seed immediately after tiling.
- d. Do not be afraid to do multiple applications of herbicide or other weed control tools if site had large invasive populations
- e. Do not bring in fill for project as it is a source of weed seed
- f. Be sure mulch is clean as you do not want to bring in weed seed

For more information on this subject please go to the site preparation section of Restore Your shore at:

<http://www.dnr.state.mn.us/restoreyourshore/st/preparation.html>

4. Proper Installation

- a. Make sure plants are planted correctly in right areas (aquatic, transitional and upland)
- b. Make sure erosion control materials are installed correctly
- c. Rules for seed projects, follow recommendations for seeding from native plant vendor
- d. Make sure plant stock is weed free. Remove any unknown plants from pots or rootstock prior to planting.

5. Proper Post Planting Care

- a. Identify weeds on site prior to planting and learn these so you know what will be coming up after planting, obtain a good weed identification handbook.
- b. Watering - New plantings need 1 inch of water per week so if there is a lack of rain, watering your project site will be necessary. Consider adding a water absorbing polymer in the planting hole during planting for sites where watering regularly is not possible
- c. Weeding - Check for weeds at least once every 2 weeks. Remove weeds by hand pulling or spot treat them with herbicide if necessary. Watch for weeds especially along the edge of projects or paths.
- d. Mowing - On sites where seeding was the primary planting method, the site will need mowing to control weeds. Mowing should occur when weed growth reaches 10 inches and most importantly before the weeds begin to set seed, likely 2-3 times that first growing season. The cutting height should be set at 4 to 5 inches.
- e. Wave Breaks - If an aquatic planting has been done in conjunction with your project make sure you maintain your wave break and fence to keep out predators to help your new aquatic plants become established.

For more information on this subject please go to the planting tips section of Restore Your shore at:
<http://www.dnr.state.mn.us/restoreyourshore/st/plantingt看ps.html>

6. Second Summer Care and Maintenance

- a. Dead Vegetation – In the spring if desired, the dead vegetation may be cut back or raked. This is only necessary if the appearance of the project is a concern. Leave dead vegetation standing in the fall to act as a buffer to keep leaves from blowing in the lake. The standing dried vegetation also provides winter interest, food and cover for birds and other wildlife.
- b. Weeding - Conduct a thorough weeding of the site after green-up and check for weed growth at least once every three weeks. Hand pull or spot treat any weeds with herbicide if necessary.
- c. Mowing - If mowing is your primary weed control option raise the cutting height to 6 to 12 inches during the second year and again mow prior to any weeds setting seed.
- d. Water - as needed during periods of drought, making sure to provide the plants 1 inch of water per week.
- e. Supplemental planting can be conducted in areas with low native plant survival.

7. Long Term Care and Maintenance (Leave this as pdf on this page:

<http://www.dnr.state.mn.us/restoreyourshore/st/maintenance.html>)

- a. Spring Weeding and Standing Vegetation - Again and every spring following, conduct a thorough weeding and cut back or rake the vegetation as desired.
- b. Weeding - Once every month you should check for weed growth and hand pull or spot treat weeds.
- c. Conduct Supplemental planting as necessary, continuous vegetation cover is the goal.
- d. Project Expansion - Consider expanding the project into new areas of the shoreline, this can be done by using seed from you existing native plants in the restored area
- e. Prescribed Burn - After approximately 3 years or when the vegetation becomes thick enough to carry a fire you may consider burning the project. Prescribed burning is a tool that can be used for weed control, it will also help to increase flowering, seed production and germination of native plants and can reduce invasion by potentially unwanted woody vegetation. Prescribed burns may be conducted on a 3 or 4-year rotation. Please obtain the necessary permits before conducting a prescribed burn.
- f. Monitoring - The project site should be monitored every year after planting. Monitoring is recommended one hour per month through the growing season. Site monitoring should include noting successful species, introductions of new native species, weed problems, animal and human disturbances, erosion problems or issues and management needs. Site monitoring would ideally include written notes and photos of the site.
- g. Repair – Repair any bare areas before they become a major erosion problem. Use erosion control materials and re-seed or re-plant these bare areas.