Crescent Beach Adaptive Management Plan City of Algoma, Wisconsin



Prepared for: Lakeshore Natural Resource Partnership P.O. Box 358 Cleveland, WI 53015

and

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November 23, 2020

1.0 INTRODUCTION

Lakeshore Natural Resource Partnership (LNRP), in cooperation with the Friends of Crescent Beach (Friends) and City of Algoma, are actively working to conduct beach enhancement activities including non-native invasive species control and installation of native beach vegetation along the southern portion of Crescent Beach, a Lake Michigan municipal beach in the City of Algoma, Wisconsin. This Adaptive Management Plan ("Plan") is part of a coordinated effort by the City of Algoma and several other state and local agencies to build upon previously completed actions to restore the beach and shoreline areas of Algoma. Restoration of native beach vegetation, initiated in 2017, was outlined in the Crescent Beach Restoration Plan (Stantec 2017). Complementary initiatives undertaken by partners to restore the beach include repairing old breakwater structures and improvements to storm water outflow areas. Repairs to the breakwater and storm water outflows are proposed for future work when funding is available; however, vegetation improvements have been initiated in advance of this work to improve the general aesthetics, habitat, and wildlife values of the shoreline. This Plan provides background information, restoration goals and objectives, restoration activities completed to date, and establishes an adaptive management approach to continue enhancement and restoration activities along the southern portion of Crescent Beach.

2.0 BACKGROUND

Crescent Beach is a municipal beach on Lake Michigan in the City of Algoma. The beach complements adjacent amenities along the shoreline, including a community center, marina, volleyball nets and an accessible boardwalk ending at the Algoma Visitor Center (Appendix A, Figure 1). The beach is adjacent to the historic central business district of Algoma, which offers a variety of shops, restaurants, lodging, galleries, charter fishing, and other attractions. Adjacent land uses are primarily commercial and residential. The sand beach attracts many visitors to the downtown area and is widely utilized for recreational activities such as walking, sunbathing, picnicking, swimming and birding. The beach hosts an annual kite festival, a popular kayak launch, and sweeping views of the Lake Michigan shoreline, and the Algoma pierhead lighthouse.

Initial efforts to establish a public park and beach began in 1911, and in 1938, with funding from the federal Works Progress Administration, the City installed a bath house, planted trees and shrubs, and built a staircase down to the beach (Algoma Chamber of Commerce 2020).

Crescent Beach is bounded to the north by a jetty, which separates it from the Marina Basin Beach; to the south by residential properties and to the west by State Highway 42 (Lake Street). The fully accessible boardwalk, made from recycled plastic, provides year-round strolling with views over the beach (Appendix A, Figure 1). The boardwalk follows the west edge of the beach, on a slope of mowed lawn and scattered shade trees. The beach is composed of sand with some pebbles and cobbles. Due to recent high lake levels, the sand beach has narrowed and waves scour the base of the slope.



The northern portion of the beach is groomed frequently during the summer months, resulting in a lack of vegetation establishment. Topographic relief slopes gradually to the water's edge, but is relatively flat throughout the groomed portion of the beach. In contrast, the southern, ungroomed portion of the beach was vegetated with a moderate density of weedy, early successional species prior to restoration. Vegetation management over the past several years has resulted in reduced weed pressure. The back of the beach slopes upward to a low bluff or terrace at the south end of the beach, rising approximately 20 feet from the shore to the Visitor's Center, where a ramp provides access from the boardwalk down to the beach.

Top priorities identified for Crescent Beach include addressing poor water quality and improving beach stability, habitat, vegetation, and aesthetics. Several potential water pollution sources and impairments were identified in a report prepared for the City of Algoma, entitled "Beach Health Assessment & Recommended Best Management Practices for Crescent Beach" (Kinzelman, et al. 2015). Impairments included stagnant algae mats (northern portion), extensive gull and geese populations, stormwater discharge (six outfalls), and associated surface runoff from urban impervious surfaces in conjunction with a low, flat, sand-starved beach. The report recommendations include protection of existing beach vegetation and restoration of natural vegetated strips. According to the report, habitat conservation is a key component of a healthy and well managed beach. Vegetation planted in the strip infiltrates and collects stormwater and urban runoff, and filters pollutants before it enters Lake Michigan and affects water quality. Vegetation also protects from storm surges by slowing coastal flooding, and the roots of planted vegetation stabilize sandy soils and slopes which prevents erosion. Vegetation not only stabilizes the beach but can also provide a stable habitat for wildlife and improve the overall aesthetics of the beach. Sensitive plant and wildlife habitats, with an emphasis on those planted with Beachgrass, should be protected from foot traffic, invasive species, and incompatible uses. These sensitive areas should be demarcated with adequate signage, and walkovers or walkthroughs should be established to prevent trampling (Kinzelman et al., 2015).

Nuisance algae and aquatic plants are common occurrences along the beach, especially at the junction of the beach and the breakwater, where large amounts of decaying biomass create a foul odor. Large flocks of loafing gulls are often observed along with dead fish at the junction of the beach and the jetty.

In the southern portion of the beach, ecological conditions have been impacted by a variety of stressors, typical of urban Great Lakes shorelines. Heavy recreational use and trampling have disturbed fragile native vegetation and introduced weedy invasive species. Historic logging, agricultural or industrial uses may have disturbed natural communities. Attempts to stabilize dynamic shorelines, including construction of jetties, piers, and placement of rock revetment and rip-rap, have damaged beach and dune complexes and cut off the natural replenishment of sand from longshore currents (WDNR, 2017). Beach grooming results in destruction of native beach plant communities. Today, only a small section of relatively intact natural vegetation exists within the southern portion of Crescent Beach (Appendix A, Figure 2).



Initiatives to improve the condition of Crescent Beach are underway. This adaptive management plan addresses the on-going habitat improvements to vegetation and beach aesthetics within the southern portion of the beach.

3.0 GOALS, OBJECTIVES AND PARTNERSHIPS

The overall project goal is to stabilize the shoreline and restore a diverse natural beach habitat by controlling non-native invasive species and establishing native vegetative cover in the southern portion of Crescent Beach (the "Project Area," Appendix A, Figure 2). Restoration activities will restore ecosystem functions and values that have been lost as a result of historic land use changes. Restoration in the current phase was targeted specifically toward re-establishing native beach vegetation within the Project Area, excluding the areas immediately adjacent to stormwater outflows, which will be addressed in subsequent phases. Specific functional objectives will include water quality protection, shoreline stability and enhancement, improved aesthetics, recreational and educational opportunities, increased floristic diversity, and restoration of wildlife, pollinator, and migratory bird habitat.

Great Lakes Beach and Dune communities are highly dynamic systems, and in Wisconsin, are restricted to the shores of Lakes Michigan and Superior. These systems are home to a variety of plants and animals, including endemic plants, migratory birds, and specialized invertebrate species (WDNR, 2017). Great Lakes beach vegetation is characterized by a zone of lower beach, typically devoid of vegetation, except for a low density of specialized annuals. In contrast, the middle and upper beach is often dominated by dense stands of beach grass (Ammophila breviligulata), a long-lived, perennial, colony-forming species adapted to stabilizing the dynamic sands. Further from the shore, the upper beach or dune community often includes sand blowouts, interspersed with areas of low density of native forbs including field sagewort (Artemisia campestris) and lance-leaved coreopsis (Coreopsis lanceolata), as well as shrubs, particularly the evergreen common juniper (Juniperus communis) and creeping juniper (J. horizontalis). Native beach vegetation enhances soil stability, reduces nutrient and sediment inputs to surface and groundwater, and reduces stormwater velocity. Reducing erosion and loss of sand is especially critical on a dynamic coastal shoreline. Native plants are also naturally low maintenance, leading to time, cost and energy savings once established. Native plants are adapted to local conditions, which makes them hardy and resistant to pests and diseases. Native vegetation will also improve coastal habitat by providing food and shelter for pollinators, migratory birds, and other desirable wildlife along the Lake Michigan coastline.

With the limited space available due to high lake levels, establishing a historic beach ecosystem is not practical across the entire Project Area. Where space allows, the partners are focusing efforts to restore beach grass and other native species. To continue project momentum and implement a successful long-term adaptive management plan, building and maintaining partnerships is essential. The Friends are partnering with Kewaunee County and the City of Algoma to create a web of staff and volunteers to participate in management and restoration efforts. Tasks will be distributed amongst partners, allowing restoration and management goals to be accomplished. Each partner will share tools, resources, and expertise. The Friends plan to continue



to mobilize their dedicated volunteers and direct them to assist in the hand-pulling of invasive species. With target species identified, this task is more likely to attract new volunteers of all ages, thereby growing community support for Crescent Beach. Some invasive species require other treatment methods such as herbicide spot treatments. The City of Algoma plans to take on the task of herbicide treatments as this requires certified staff to complete. The City will also perform corrective actions such as removing heavy debris from the beach, fixing boardwalks and walkways, and stabilizing shorelines. Additionally, Kewaunee County will assist the Friends with education and outreach activities and provide support such as training and species identification.

4.0 PLAN IMPLEMENTATION

The Crescent Beach Restoration Plan (Stantec 2017), outlined management activities to accomplish the stated goals and objectives. These activities included invasive plant control through targeted herbicide applications, installation of native plants and seed, and monitoring and management to ensure continued success. The plan was implemented in phases over two years by relying on volunteer support and professional restoration services. Table 1 provides an overview of the management activities completed to date.

Table 1. Management Activities Completed

| Management Tasks Completed | Timeline | |
|--|----------------|--|
| Non-native Phragmites control | September 2017 | |
| Developed Restoration Plan | December 2017 | |
| Non-native woody removal and herbicide treatment | June 2018 | |
| Non-native woody removal and herbicide treatment | October 2018 | |
| Native beach grass and shrub installation | | |
| 3,000 beach grass plugs | | |
| 6 common juniper shrubs | October 2018 | |
| 10 creeping juniper shrubs | | |
| 6 bush cinquefoil shrubs (Dasiphora fruticosa) | | |
| Native seed installation | | |
| Common Milkweed (Asclepias syriaca) | | |
| Canada Wild Rye (Elymus canadensis) | | |
| Round Headed Bush Clover (Lespedeza capitata) | Fall 2018 | |
| Spotted Bee Balm (Monarda punctata) | | |
| Switch Grass (Panicum virgatum) | T GII 2016 | |
| Black Eyed Susan (Rudbeckia hirta) | | |
| Little Bluestem (Schizachyrium scoparium) | | |
| Old Field Goldenrod (Solidago nemoralis) | | |
| Heath Aster (Symphyotrichum ericoides) | | |
| Non-native woody removal and herbicide treatment | May 2019 | |
| Native beach grass installation | May 2019 | |



| Management Tasks Completed | Timeline | |
|---|---------------------|--|
| 4,000 beach grass plugs | | |
| Herbicide treatment and hand pulling | September 2019 | |
| Native beach grass and shrub installation | | |
| 8,000 beach grass plugs | October 2010 | |
| 3 sand cherry shrubs (Prunus pumila) | | |
| 12 creeping juniper shrubs | - October 2019 - | |
| 6 bush cinquefoil shrubs | | |
| 12 common juniper shrubs | | |
| Hand pulling and herbicide treatment of non-native herbaceous and woody species (volunteers and City of Algoma) | 2020 Growing Season | |
| Native woody installation | October 2020 | |
| 8 common juniper shrubs | October 2020 | |
| Native beach grass installation | October 2020 | |
| 600 beach grass plugs | October 2020 | |

A non-selective herbicide application was applied during the growing season prior to native seed and plug installation in 2017 and 2018, to areas dominated by invasive or undesirable plant species. Adequate control of invasive species within the Project Area was achieved prior to installation of native plant material.

Native plant material selected for the site consisted of container-grown shrubs, herbaceous plant plugs, and seed. Plant materials were obtained from reputable native plant nurseries and consisted of hardy native species that are adapted to the dynamic conditions of Lake Michigan coastal beach and dune systems. Species and quantities are listed above, with installation occurring in phases from 2018 to 2020. Targeted invasive control continued after native plant material installation by volunteers and City of Algoma staff.

5.0 ADAPTIVE MANAGEMENT AND MONITORING

The monitoring and management period began after initial installation of native plant material was complete in 2019. The purpose of monitoring is to adequately evaluate the status of the restoration efforts, and to determine the need for maintenance or remedial action. Restored plant communities should be monitored several times during the growing season until the desired cover of native vegetation has been achieved, by using a pedestrian survey to evaluate the developing native plant cover and the distribution and coverage of invasive species. This is especially important for newly establishing sites to inform remedial site management.

Site management will focus on implementing an adaptive management approach. Potential corrective measures may include grade modifications (especially after reconfiguring storm water outflows), additional plantings or invasive control, revisions to maintenance requirements, and revised monitoring requirements. The adaptive measures will be implemented to ensure the site is meeting the goals and objectives of establishing native vegetative cover.



5.1 INVASIVE CONTROL

In general, spot applications of herbicide or hand pulling should be used to control persistent weeds and invasive species. Selective herbicides (i.e., grass-specific or broadleaf-specific) shall be used where possible to minimize damage to nontarget species and avoid creating bare areas that may facilitate future invasions of weeds. The appropriate herbicide, application methodology, and timing should be selected to achieve the most effective control of the target species. Guidance is provided below in Table 2. Aquatic approved herbicides should be applied to areas with standing water or in areas where the herbicide may come in contact with surface water. Hand pulling is an effective way to control target species for small sites.

Invasive species can be detrimental to the beach ecosystem, impacting native flora, erosion, sand movement, and hydrology. Annual beach assessments and site surveys should be used to identify the presence and extent of invasive species. Monitoring protocols and early detection is extremely important because invasive species can quickly establish themselves in coastal areas, becoming difficult and costly to eradicate. A quick guide to some of the invasive species listed below is provided in Appendix B.

Table 2. Proposed Treatment Methods for Target Species

| Common/Species Name | Treatment Method | Timing | | |
|---|---|---|--|--|
| Non-native Woody Species | | | | |
| Bush honeysuckles (Lonicera spp.) | Cut-stump treatment | Any time (dormant season preferred) | | |
| | Spot herbicide application (seedlings, small saplings, and resprouts) | Plant actively growing and fully leafed out | | |
| Undesirable Native Woody Species | | | | |
| Ash species (Fraxinus spp.), Box elder (Acer negundo) | Spot herbicide application (seedlings, small saplings, and resprouts) | Plant actively growing and fully leafed out | | |
| Non-native Forb Species | | | | |
| Dame's rocket (Hesperis matronalis), Garlic mustard (Alliaria petiolate) | Spot herbicide application | Treat rosettes in spring or fall, or treat flowering plants | | |
| | Hand pull (for small or scattered populations) | Bolting or flowering plants – flowering plants should be bagged and removed from site (recommended only for small populations) | | |
| Spotted knapweed (Centaurea stoebe), | Spot herbicide application | Treat rosettes in spring or fall, or treat bolting plants in summer | | |
| Bouncing-bet (Saponaria officinalis) (hard to handpull) | Hand pull (for small or scattered populations) | Pull any time of the year, with the most success if repeated in spring, summer, and late summer. Bolting or flowering plants – flowering plants should be bagged and removed from site. Remove entire plant, including taproot. | | |
| White and yellow sweet clover | Mow (near ground surface) | June-July, just after flower | | |
| (Melilotus alba, M. officinalis) | | emergence | | |



5.6

| Common/Species Name | Treatment Method | Timing |
|---------------------|--|---|
| | Hand pull (for small or scattered populations) | When visible, bag plants if flowers have opened or plant has produced seed. Remove entire plant, including tap root |
| | Spot herbicide application | When plant is actively growing and fully leafed out |

5.2 ACCESS POINTS

Defined public access paths should be established and marked with adequate signage to route foot traffic along paths and limit trampling in the restored habitat areas. Access points to the beach should be clearly designated with signage, leading from nearby roadways and parking areas. These pathways will include rope barriers and ground stabilizing matting. Designated foot paths will allow native vegetation to establish and grow, and rope barriers will provide protection from foot traffic.

5.3 NATIVE SPECIES ESTABLISHMENT

Supplemental planting of beach grass, native shrubs and/or native seed should be completed as needed to achieve the desired density of native species. Since beach grass is now establishing within the Project Area, stems can be harvested locally in the fall and replanted in bare areas as needed to increase density or stabilize eroding areas. The attached Dune Planting Guide (Appendix C), provides guidance on harvesting and planting beach grass stems. Native shrubs and seed can be purchased from reputable nurseries who specialize in growing species native to Wisconsin. The Wisconsin Department of Natural Resource maintains a list of native plant nurseries: https://dnr.wi.gov/files/PDF/pubs/er/er0698.pdf

5.4 LAKE MICHIGAN WATER LEVEL CONCERNS

Lake Michigan has seen an increase in water levels over the past few years, with June and July 2020 seeing the highest averages (582.19 feet) since October 1986 (582.35 feet). The increase in water levels has been attributed to an increase in precipitation in the Great Lakes region. High water levels have impacted public beaches, businesses, private and public property, and coastal habitats by inundating low lying areas near the shoreline and inland tributaries, and through related effects including erosion and flooding. Coastal bluffs have washed away after strong winter storms and it is predicted that this trend will continue. Natural vegetation present on shorelines and beaches serves a protective function against erosion. Loss of natural vegetation due to wave scour, exacerbated by high lake levels, makes Crescent Beach more vulnerable to further erosion. It is critical to supplement native vegetation and enhance the protective barrier against erosion, and the capacity to capture and retain sand, provided by vegetated shoreline habitats. Reducing erosion by installing additional native beach grasses and forbs, shrubs, and trees, to supplement the existing seedbank, will resist the invasion of weeds and non-native invasive species. Long-lived species native to Great Lakes beaches are capable of thriving in the challenging environment of a dynamic shoreline, while providing



aesthetics and supporting wildlife habitat. Installing native beach/dune plants will protect beaches from sand loss and contribute to the resiliency of coastal habitats.

6.0 REFERENCES

- Algoma Chamber of Commerce. 2020. Crescent Beach [Website]. https://visitalgomawi.com/beach/
- Kinzelman, J., K. Busse and A. Pierce. 2015. Beach Health Assessment & Recommended Best Management Practices for Crescent Beach (Algoma, WI). A report prepared for City of Algoma, WI. Available online at http://friendsofcrescentbeach.com/wp-content/uploads/2015/05/BMP_Crescent_Algoma_Assessment.pdf
- Stantec. 2017. Crescent Beach Restoration Plan. Prepared for Lakeshore Natural Resource Partnership and City of Algoma, WI.
- Wisconsin Department of Natural Resources (WDNR) 2017. The ecological landscapes of Wisconsin: an assessment of ecological resources and a guide to planning sustainable management. PUB-SS-1131 2015, Madison.



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Appendix A November 23, 2020

Appendix A

FIGURES







Legend

Beach Restoration Area DNR 24k Hydrography

Perennial Stream

Intermittent Stream

- Coordinate System: NAD 1983 StatePlane Wisconsin Central FIPS 4802 Feet
- Data Sources Include: Stantec, WisDOT, WDNR
 Orthophotography: 2015 NAIP

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Figure No. 1

Title

Overview

Client/Project
Lakeshore Natural Resource Partnership Crescent Beach Restoration Plan

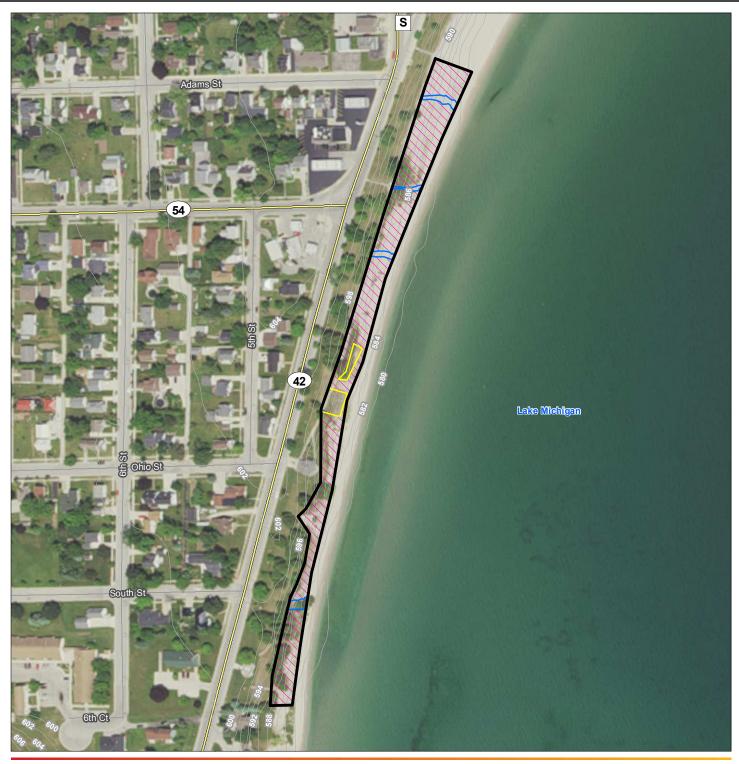
Project Location C. of Algoma, Kewaunne Co., WI Prepared by JD on 2017-11-07 Technical Review by JH on 2017-11-07 Independent Review by MC on 2017-11-08

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193705408





<u>Legend</u>

Beach Restoration Area

2ft Elevation Contour

Stormwater Outfalls (0.09 acres)

Existing Beach Vegetation (0.12 acres)

Proposed Beach Vegetation Planting (2.16 acres)

- Coordinate System: NAD 1983 StatePlane Wisconsin Central FIPS 4802 Feet
- Data Sources Include: Stantec, WisDOT, WDNR
 Orthophotography: 2015 NAIP

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Figure No.

Title

Restoration Area

Client/Project
Lakeshore Natural Resource Partnership Crescent Beach Restoration Plan

Project Location C. of Algoma, Kewaunne Co., WI

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Appendix B November 23, 2020

Appendix B

INVASIVE SPECIES SUMMARY







GARLIC MUSTARD

(Alliaria petiolata)

Herbaceous biennial. First-year plants form basal rosettes with heart-shaped leaves (photo 1). Second-year plants grow up to 4-feet tall and produce flowers with many seeds (photo 2). Visible in early spring to summer in full sun or shaded habitats.



<u>Leaves:</u> Alternate; heart-shaped; smell like garlic when crushed

Flowers: Small, white, **4 petals**

<u>Seed:</u> Found in long, skinny siliques (photo 3)

Control: Hand pull first and second-year plants before seed set by removing entire plant/roots; if not flowering, leave in pile to dry, and if gone to seed, pull, bag, and send to landfill.





DAME'S ROCKET

(Hesperis matronalis)

Herbaceous perennial or biennial that grows 3 to 4 feet tall. Colony forming species that is found in full sun or shade habitats. Very similar to Phlox species but note 4 petals in Dame's rocket and 5 petals in Phlox. Blooms late spring through summer.



<u>Leaves:</u> Alternate; lance-shaped and finely toothed; fine hairs cover leaves (photo 1).

Flowers: White, pink, or purple with 4 petals (photo 2).

<u>Seeds:</u> Found in long, skinny siliques (photo 3).

Control: Hand pull small populations of plants when bolting or flowering. Bag plants and send to landfill.





BOUNCING BET (Soapwort)

(Saponaria officinalis)

Herbaceous perennial that grows about 1 to 3 feet tall. Generally found in full sun habitats. Flowers are very similar to that of Phlox. Blooms late spring through summer. Stems, leaves, and roots contain a juice that produces a soap-like lather when mixed with water.



<u>Leaves:</u> **Opposite**; oval to lance-shaped with smaller leaves sometimes growing from leaf axils (photo 1).

<u>Stem</u>: Dark red-purple and swollen at leaf nodes.

Flowers: White to pink with **5 petals** (photo 2), some petals are toothed; tube-like sepals.

Control: Hand pull small populations of plants when bolting or flowering. Bag plants and send to landfill.



SWEET CLOVER

White (Meliotus albus), Yellow (M. officinalis)

Herbaceous, biennial legume. Grows 3 to 5 feet tall and bush-like, with white being taller than yellow. Generally found in full sun in dry or sandy soils. Blooms late spring through summer. Seeds can remain viable in soil for up to 30 years, so removal prior to seed set is essential.





<u>Leaves:</u> **Alternate**; long, thin, and finely toothed; in **threes**.

Flowers: White or yellow flowers in dense racemes.

Control: Hand pull small populations of plants when bolting or flowering. Bag plants and send to landfill.



Spotted knapweed

(Centurea stoebe)

Herbaceous perennial. Remains as a rosette from 1 to 4 years before producing flowers (photo 1). Frequently found in dry or sandy soils. Resemble thistles at first glance. Grow from 2 to 4 feet tall with. All *Centurea* species are aggressive in Wisconsin.





<u>Leaves:</u> Soft graygreen color, covered in rough hairs.

Flowers: Pink-purple in color, bloom in June to September. Note black-tipped bracts (photo 3).

Control: Hand pull small populations. Ensure removal of entire plant—do not forget the roots. Wear gloves and long sleeves when removing plants due to the potential for irritation.

Appendix C November 23, 2020

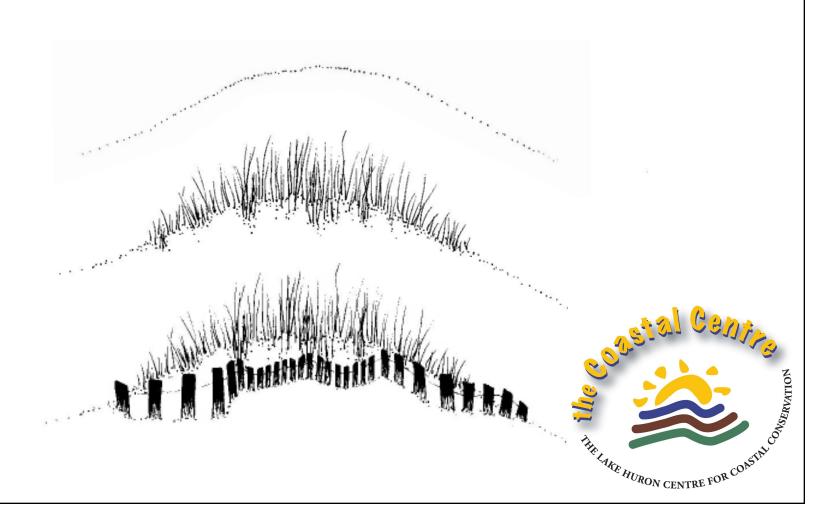
Appendix C

DUNE PLANTING GUIDE



Dune Planting Guide:

Wise Stewardship of Lake Huron Coastal Dunes



Copyright, Lake Huron Centre for Coastal Conservation 2010

ISBN: 978-0-9865619-1-7

Funding for this guide was made possible through Environment Canada's Habitat Stewardship Program for Species at Risk. This project was done in partnership with the University of Guelph, the Pitcher's Thistle-Dune Grasslands Recovery Team and the Bruce Resource Stewardship Network. This document is an Action element of the Pitcher's Thistle-Dune Grasslands Recovery Strategy.

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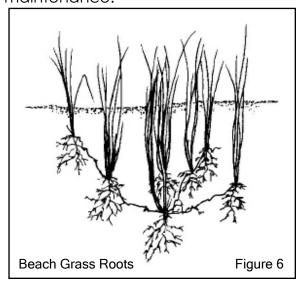




Planting Dune Vegetation

Like sand fencing, the role of vegetation is to slow onshore winds and trap sand, allowing it to gather and build up. Used together, sand fencing and dune vegetation is an extremely effective way to restore dunes.

Plant stems and leaves help protect the sand surface from wind erosion. The plant's root structure knits the dunes together to stabilize them. Dune vegetation renews itself naturally, providing permanent cover, and needs no ongoing maintenance.



Beach grass facts:

Beach grass will grow as more sand gathers around it, making it suited for the ever-changing dune system to which it has adapted itself.

Planting should occur in late autumn when plants are dormant. Autumn weather provides a cool and moist environment that reduces stress on new plantings. Fall planting also gives the grass a head start for growth in spring.

It is possible to plant beach grass in the spring, but the success rate drops by 25%. It takes about 3-4 years for beach grass to fully establish.

Beach grass, as it is referred to here, also goes by the name Marram or American Beachgrass (Ammophilia breviligulata). It is perhaps the most successfully used species in dune restoration along the Lake Huron coastline. Other important beach grasses like Long-Leaved Reedgrass and Great Lakes Wheatgrass are also important stabilizers.

Beach grass should be harvested locally. The closer to your property the better. Avoid plants from other dune systems in order to prevent the transfer of diseases and different plant genetics. Beach grass should be used in areas where sand drifting is a problem. (See Contact Information for specific suppliers)

Planting spacing varies, and grasses should be planted no less than 6" and no more than 18" apart in an irregular pattern to slow wind speeds and prevent erosion. This will also help to achieve a more natural look.

Beach grass is different from the grass we associate with our lawn. Beach grass is a special coastal plant that

capture wind blown sand – keeping it from continually blowing inland.

dune planting guide

dune basics



Planting Tips

The goal when planting is to achieve a naturalized landscape that will help the dunes.

Native dune vegetation is easy to maintain and a **cheaper alternative** since the plants live for a long time and are lower maintenance. Native dune plants are also your ally in protection from sand drifting and erosion.

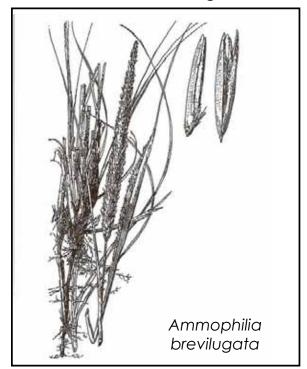
Healthy vegetated dunes makes the

beach more **resilient** to the effects of storms and high lake levels. Plant dune grasses in a **natural random order** for a natural look.

Plant different species of native plants to maximize biodiversity. If you wish to have a more formalized garden using ornamental plants, limit this type of gardening to areas around the cottage building, away from the delicate dune system.

Do not use **armour stone** (quarry stone or rocks) as it interrupts the changing nature of the dune land-scape.

marram grass or American Beachgrass



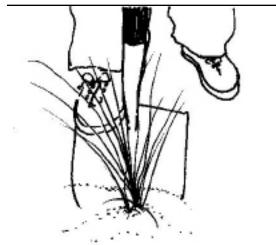
dune planting guide

plant information

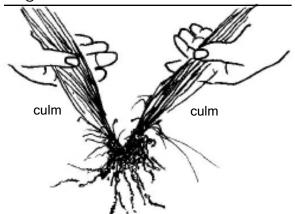


The Nitty Gritty: Beach Grass Harvesting Basics

Step 1: Cut plants with a spade and make sure to cut the underground roots, in order to get the whole plant.



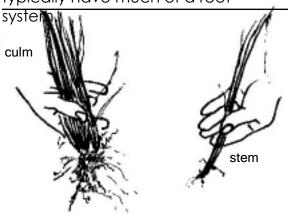
<u>Step 3</u>: Separate the plant into single culms.



Step 2: Grab leaves of the plant and pull, shaking off sand.

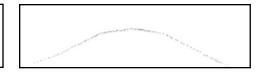


Step 4: Each stem will not typically have much of a root



dune planting guide

plant information

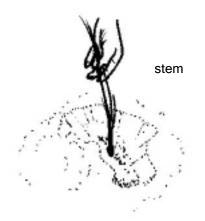


Basics for Transplanting Beach Grass

<u>Step 5:</u> To plant the grass, push the spade's blade (or rebar) 20-30 cm into the sand.



Step 7: Place the grass stem into the hole. The grass should be planted 15-20 cm into the sand. The stem tolerates being buried.

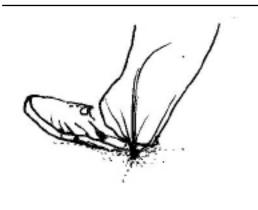


Grasses should be planted no less than 6" and no more than 18" apart in an irregular pattern to slow wind speeds and prevent erosion. This will also help to achieve a more natural look.

Step 6: Move the spade's handle (rebar) forward, creating a hole in the sand.



Step 8: Take the heel of your foot and pack the sand around the plant to eliminate any air pockets around the roots. Do not water.



dune planting guide

plant information

