



# The Michigan Dune Alliance Strategic Plan

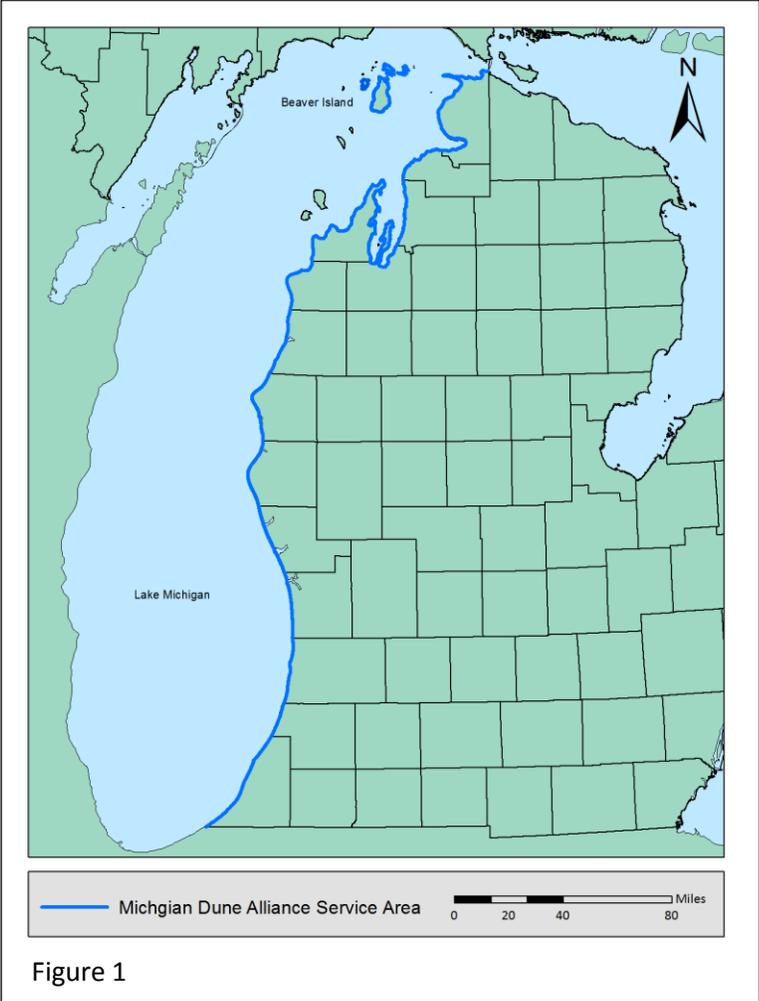
## I. Goal

The Michigan Dune Alliance (MDA) leads collaborative conservation of Eastern Lake Michigan coastal ecosystems. Successful efforts in this landscape will result in the creation and maintenance of healthy, resilient, and connected dune and shoreline areas benefitting both globally-rare native biodiversity and vibrant regional economies. The MDA will achieve this goal by (1) restoring and protecting coastal habitat, (2) facilitating continued dialogue amongst all shoreline stakeholders and policy makers, and (3) educating and engaging the public to support long-term coastal conservation.

## II. Scope

The Great Lakes are home to the world’s largest freshwater dune system, totaling 275,000 acres, with the largest concentration found throughout the Eastern Lake Michigan (ELM) shoreline. ELM is defined as the coastal ecosystems along over 500 miles from the Michigan/Indiana border to the Mackinac Bridge, extending inland to include lands and waters directly influenced by the Lake, and also incorporating coastal features of targeted Lake Michigan islands within the state of Michigan (Figure 1).

Many unique ecosystem types are found within this geography; parabolic, perched, and linear dunes, interdunal wetlands, coastal plain, and Great Lakes marshes, as well as associated systems including coastal clay bluffs and boreal forests. These communities provide habitat for federally and state listed species such as Great Lakes endangered piping plover (*Charadrius melodus*), threatened Pitcher’s thistle (*Cirsium pitcheri*), threatened Blanchard’s cricket frog (*Acris crepitans blanchardi*), threatened dunewort (*Botrychium campestre*), endangered prairie warbler (*Dendroica discolor*), threatened dwarf lake iris (*Iris lacustris*), threatened broomrape (*Orobanche fasciculata*), and threatened Lake Huron locust (*Trimerotropis huroniana*).



Eastern Lake Michigan is also a significant component of Michigan's economy, most prominently through eco-tourism and recreation opportunities. Sites ranging from local preserves to state and federal parks draw yearly visitation from across the country, and almost entirely support the survival of many coastal towns. Additionally, properly maintained natural shoreline areas provide ecosystem services such as storm surge buffering, flood control, and water filtration at a fraction of the cost necessary to implement artificial alternatives.

As with most natural systems, habitat alteration, degradation, and destruction are the major threats to native biodiversity and ecosystem function<sup>1</sup>. Invasive species, both terrestrial and aquatic, negatively impact native plants, animals, and insects by outcompeting them for resources as well as altering the landscape to greatly reduce the amount of suitable habitat. Incompatible development for residential, recreational, and industrial purposes alters the dynamic dunal processes that are necessary for native species' survival, as well as impacting water cycling and permanently altering shoreline. This area will also continue to feel the immediate impacts of climate change, through both lake level fluctuation and major storm events. Finally, while the majority of the public may value some or all of the unique qualities this landscape possesses, they are often miss-informed or undereducated regarding what impacts they can have, both positive and negative, towards lasting coastal conservation.

### III. Outcomes

Collaborative conservation of the ELM landscape through the Michigan Dune Alliance partnership framework will improve the diversity of natural systems, increase resiliency and adaptability toward coping with future threats, and enhance the associated economic benefits of eco-tourism, recreation, and ecosystem services. These coastal habitats will be considered successfully conserved when the following outcomes result from sustainable actions, implemented at a landscape scale, over a long-term timeframe.

#### 1. *Restoration and Protection Outcomes*

- a. Habitat Restoration: A prioritized set of coastal sites will be effectively restored and managed, ensuring populations of native biodiversity are no longer limited by invasive species and overall habitat quality.
- b. Land Protection: A network of protected lands will be expanded in a targeted and cooperative fashion, providing a more efficient pathway to implement habitat restoration and ultimately the long term maintenance of habitat quality.

#### 2. *Organizational Outcomes*

- a. Formalization: The Michigan Dune Alliance exists as a self-sufficient, sustainable organization capable of meeting defined goals of restoration, protection, communication, policy engagement, and funding.
- b. Coastal Information Network: All Michigan Dune Alliance members and relevant stakeholders will be engaged in a communication network that is beneficial to each participant and increases the efficiency of overall habitat restoration and protection goals.

#### 3. *Policy Outcomes*

- a. Policy Engagement: Strategic engagement on relevant policy issues will directly support the Michigan Dune Alliance's efforts to reduce the number of future invasives species introductions, as well as limit development and degradation of coastal areas for more successful future protection and restoration.

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<sup>1</sup> For additional context, see the Lake Michigan Biodiversity Conservation Plan: Pearsall, D., P. Carton de Grammont, C. Cavalieri, P. Doran., L. Elbing, D. Ewert, K. Hall, M. Herbert, M. Khoury., S. Mysorekar., S. Neville., J. Paskus., and A. Sasson. 2012. *Michigami: Great Water. Lake Michigan Biodiversity Conservation Strategy*. Technical Report. A joint publication of The Nature Conservancy and Michigan Natural Features Inventory. Lansing, Michigan. 313 pp. with Appendices.

#### 4. Public Engagement Outcomes

- a. Education: Coastal constituents are informed on both the actions of the MDA as well as their options for participation and support of MDA goals.
- b. Philanthropy: Building on the efforts to engage and educate the public, individuals and foundations are willing to financially-back MDA efforts.

Intermediate Outcomes	Completion By	Support Ultimate Outcomes
A. High-threat invasive plant species that are not widespread or well-established will be effectively eradicated (90+% removal) at sites supporting landscape-scale health.	2016	1a
B. Widespread OR well-established invasive plants will be controlled, ensuring that their populations do not spread.	Ongoing	1a
C. Sites with the highest ecological quality will have protections in place to suppress the introduction of widespread AND well-established invasive plants.	2016	1a
D. Any necessary follow-up restoration needed after invasive species removal is implemented, and will have prioritized and begun additional restoration at sites to support overall health.	2017	1a
E. An ongoing, sustainable invasive species survey, control, and monitoring program through the Michigan Dune Alliance will be in place to identify and respond to future threats as described in A. through D. above.	2017	1a
F. An MDA subcommittee to define priority coastal sites for acquisition/protection will be functional, and will collaborate to identify resource opportunities to take action.	2017	1b
G. The MDA identifies a path to formalization and agrees on participation levels, organizational inclusion, and medium-term planning.	2016	1, 2, 3
H. Bi-annual MDA meetings will be scheduled and held to ensure all members are providing input and direction to guide decision making.	Ongoing	2b
I. An MDA subcommittee to identify opportunities for strategic policy engagement, based on greatest need and/or leverage, is in place.	2017	3a
J. An MDA subcommittee to develop a coastal citizen outreach and education plan is formed and priority strategies for engagement are identified and implemented.	2016	4a
K. An MDA subcommittee to explore public and private funding opportunities is developed.	2017	4b

## IV. Strategies

To best protect and preserve the coastal and near-shore habitats of Eastern Lake Michigan, the Michigan Dune Alliance will employ the following strategies:

### 1. Restoration

- a. Use the MDA partnership framework to continue efforts towards the eradication, control, and suppression of a variety of terrestrial invasive plant species which pose the highest threat to coastal ecosystems, specifically dunes, wetlands, and coastal forests.
- b. Explore opportunities for the MDA to engage and support in other invasive species efforts in the region (forest pest, aquatic).
- c. Consolidate and disseminate lessons learned regarding landscape-scale conservation to other areas in need of similar efforts.

### 2. Protection

- a. Utilizing science-based methods provided by MDA partner organizations, define the highest priority lands for targeted acquisition.
- b. By working cooperatively, increase efficiencies of protection by utilizing available public and private funding most effectively.
- c. Identify partner needs in securing protection, and facilitate necessary aspects of the process.

### 3. Organization

- a. Formalize the MDA as a largely self-funded and managed, cooperative organization, capable of driving long-term, sustainable coastal restoration.<sup>2</sup>
- b. Identify additional stakeholders that would benefit from inclusion in the MDA, as well as what organizational assets would strengthen MDA work.
- c. Develop new or utilize existing methods for productive, engaged conversation and information transfer between the MDA and other conservation efforts state and region wide.

### 4. Policy

- a. Administrative policy: Engage in and support efforts to reduce the number of future invasives species introductions.
- b. Legal policy: Respond to opportunities for improving policy maker engagement on issues critical to shoreline and dunal coastal ecosystem protection as well as state- and region-wide invasive species issues.

### 5. Public Engagement

- a. Drawing on MDA partner experience, identify the most beneficial engagement vehicles to build 'conservation-mindedness' and awareness of coastal conservation by linking MDA conservation actions to the publicly-held ethos of the Lake Michigan shoreline (recreation activities, aesthetic beauty)
- b. Explore opportunities for public engagement to support MDA restoration goals (citizen science, volunteerism).
- c. Use this rare ecosystem as a way to cultivate resource support. Many of the wealthy landowners/foundations in this area have long-held, emotional ties to the ELM dune and shoreline ecosystems.

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<sup>2</sup> This strategy is cross-cutting, and supports all other goals, outcomes, and strategies, specifically in ensuring lasting effects from past and current actions.