# A HOMEOWNER'S GUIDE TO LANDSCAPING IN INDIANA'S DUNE COMMUNITIES



## Acknowledgments

This project would not have been possible without our Advisory Committee, staff, and funding partners. We greatly appreciate those who dedicated their time and knowledge to this project.

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We greatly appreciate all our funders for helping us to create this valuable resource.











"The dunes are to the Midwest what the Grand Canyon is to Arizona and the Yosemite is to California." They constitute a signature of time and eternity. Once lost, the loss would be irrevocable." - Carl Sandburg

> This guide aims to provide you with the tools to help protect these dunes, the landscape of Indiana's nearshore communities. As a resident, you have the ability to help protect the dunes at the most local level – your own yard.

The dune landscape represents at least four major successive stages of Lake Michigan shorelines. The landscape includes 15,000 acres of open beaches, grass- and forest-covered dunes, oak savannas, swamps, bogs, marshes, prairies, rivers, and forests. Its intricate biology is globally unique and is one of the only places where examples of every type of natural community in the Chicagoland region can be found. From arctic bearberry to prickly pear cactus and southern dogwoods, the dunes' biodiversity is extraordinary. Over 1,200 species of vascular plants and 400 species of wildlife can be found here.

Over the next millennia, the dunes will face a variety of challenges. Some of the major challenges include climate change, invasive plants, shoreline erosion, diminished water guality, and encroaching urbanization. If changes happen to our climate, the Indiana Dunes will be one of the first places to reflect these changes. These changes could include a shift in the migration patterns of mobile species, the possible extinction of some species, and change the timing of many natural processes from flower blooming to bird nesting. From a decline in wildlife habitat to suppression of native plants and wildlife, invasive species also have a significant impact on the dunes ecosystem.

ecosystem.

As one of the nation's premier recreational and scientific jewels, we hope that you use this guide to help preserve the priceless landscape that is the Indiana Dunes.

In this guide, you will find resources to help you protect this landscape. You'll be able to identify ten of the most problematic invasive species found in the region and understand which native plants to use instead. Template garden designs will help you landscape your own property and a list of best practices will provide you with other resources related to preserving this

## Your Place in the Indiana Dunes Landscape

Within which landscape does your home fall? The information provided below can help you determine which of the five different dune landscapes your home lies within. Depending on the size of your property you may have more than one landscape present within your yard.



## North Slope of Dune Woodland

#### **Conditions:**

- Moist soil conditions
- Shaded

### Interdunal Wetland

A landscape typically found in swales between dune ridges dominated by rushes, sedges, shrubs, and other plants like goldenrod, red osier dogwood, and jack pines. These shallow ponds or pools may also form in wind-formed depressions at the base of blowouts, in hollows of dune fields, and in abandoned river channels that once flowed behind foredunes. The interdunal wetland experiences seasonally-fluctuating water tables.

#### **Conditions:**

- Alkaline wetlands situated in depressions between dunes
- Seasonally-fluctuating water levels
- Moist soil conditions
- Sedges, rushes, and water-tolerant shrubs

This area is where the land meets the waters of Lake Michigan. Few plants or animals live along the beach, due to the constant movements of sand, storm waves, and winter ice and snow.

### Black Oak Savanna

Savannas are open, sunny areas dominated by grasses and forbs such as little bluestem grass, wild lupine, and rough blazing star. Savannas are sparsely treed, and include black and white oaks in silty soils.

#### **Conditions:**

- Sunny, dry conditions
- Dominated by grasses and forbs
- A few oak trees are present,
- but only provide sparse canopy cover

## Foredune

The first ridge behind the beach where Pioneer species like marram grass and sand reed grass help stabilize the sand with their extensive root systems. A stabilized foredune can also support wildflowers and shrubs like common milkweed, beach pea, bearberry, poison ivy, and wild grape. Cottonwood trees can also be found in this landscape.

#### **Conditions:**

- Low dune, parallel to the shoreline
- Sparse vegetation with primarily pioneer species (hardy species which are the first to colonize an area and begin ecological succession)
- Periods of drought
- Storm waves
- Alternating periods of sand burial and erosion

## Reac

Dune woodlands are found on stabilized dunes protected from intense wind erosion. In general, these areas are dominated by woody species such as oaks, hickories, basswoods, cottonwoods, and jack pines. The orientation of the dune slope affects the types of plants that will grow. North-facing slopes are shaded and more moist than south-facing slopes.

• Tall canopy trees with shade-tolerant understory plants

## South Slope of Dune Woodland

Similar to the north-facing slope of the dune woodland, the south slope is generally dominated by tall canopy plants like oaks and hickories. Unlike the north slope, the south-facing slope receives more sunlight and has drier soil conditions. This encourages the growth of spring wildflowers and other sun-loving plants, in addition to woody species like witch hazel, sassafrass, and dogwoods.

#### **Conditions:**

- Dry soil conditions
- Sun-loving tall canopy trees with both shade-tolerant and sun-tolerant understory plants

#### † Sources:

Michigan Department of Natural Resources, Michigan State University Extension, Indiana Department of Natural Resources, Lake Michigan Coastal Program.

## Invasive Species: The Terrible Ten

*An "invasive" plant is a non-native plant that infests natural areas and causes environmental or economic harm, or harm to human health.* 



#### Alliaria petiolata Garlic Mustard

Herbaceous, garlic-odored biennial

Ideal conditions: Rich, moist, shaded areas Height: up to 4' tall

#### Leaves

First year: Young leaves kidney-shaped and arranged in a circular manner around the base of plant. Scalloped margins and wrinkly appearance.





Seasonal Change Fruit turns tan in summer and persists through winter.

Fruits





#### Berberis thunbergii Japanese Barberry

Thorny shrub with grooved stems

Ideal conditions: Moist, shaded areas Height: up to 6' tall

#### Leaves Small, oval-shaped, clustered above a spine, alternate along stem. No teeth or lobes.



Flowers Clusters of one to four small six-parted cream / yellow flowers. Spring blooms.

> Seasonal Change Foliage often becomes orange to dark reddish-purple in fall / winter.





## *Celastrus orbiculatus* **Oriental Bittersweet**

Climbing vine that forms dense infestations

Ideal conditions: Grows in nearly all soil and light availability conditions, and in dry to moist soils Height: up to 60' tall

Leaves Glossy, round, toothed leaves with abruptly pointed tips that alternate along stem.

Flowers mall, five-petaled greenish-yellow flowers lustered along leaf axils where the leaf meets the stem).

> Fruits Round green fruit in leaf axils that turn yellow-orange in fall and split to reveal a red, fleshy coating around seeds.

Seasonal Change Young reddish-brown vines turn into gray, spotted or ridged woody vines and wrap tree trunks as they grow into the canopy.





#### Centaurea stoebe ssp. micranthos Spotted Knapweed

**Herbaceous perennial** 

Ideal conditions: Dry, sandy areas Height: up to 4' tall

Leaves Up to 4 years prior to producing flowers: Narrow, oval shaped unlobed to deeply lobed gray-green leaves arranged in a circular manner around the base. Leaves become smaller and more linear as they alternate up the stem.

Up to 6" long along base

Flowers Pink or purple thistle-like flower heads with many tubular flowers and five narrow lobes that fan out. Bloom persists from mid-summer into fall.



## Impacts to Natural Resources:\*

Invasive plants significantly impact our natural resources the following ways:

- Declining wildlife habitat
- Decreasing soil stabilization and interrupting forest succession
- Increasing management expense
- Hurting and suppressing native plants and wildlife
- Destroying habitats for rare wildflowers and animals
  Decreasing access to outdoor areas like forest floors and waterways



Euonymus alatus

**Burning Bush** 

**Deciduous shrub** 

that forms dense thickets



Leymus arenarius Lyme Grass

Coarse, clump and colony-forming grass

Ideal conditions:

**Height:** up to 5' tall

Ideal conditions: Open to shaded, moist to dry areas Height: up to 9' tall

Leaves & Stem Smooth, toothed, egg-shaped, dark green leaves that taper at the tip arranged opposite each other along the stem.



Flowers Small, four-parted greenish-yellow flowers form in leaf axils (where the leaves meet the stem).



Seasonal Change Leaves become bright red / crimson



#### Leaves Smooth, rigid, blue-green eaves up to 1' long.



Flowers Flowers and fruit form dense spike that grows taller than leaves.

Flower spike begins blue-green and becomes beige in summer.

Up to 1' long

## Why These Ten?

The following lists ten of the key invasive species dune community residents should look out for, not buy / plant, and remove.

- The selection criteria for these "terrible ten" were:
- Presence and abundance in Lakeshore communitiesPresence in landscaping species or in nursery trade
- Likelihood of the species to spread in Lakeshore habitat / soils
- Ability to alter ecosystem processes
- Aggressiveness in undisturbed communities
- Difficulty to control



#### "Early Detection" species are identified by a white outline of the circular photo.

Early Detection is a process by which volunteers keep a lookout for invasive species that are unknown or minimally known so they can be reported and potentially controlled before becoming problematic. You can report early detection species at **EDDmaps.org.** 

#### *Lonicera* spp. **Bush Honeysuckle**

#### Multi-stemmed shrub; develops leaves earlier in year than native species; forms dense thickets in spring

#### Ideal conditions:

Grows in nearly all soil, moisture, and light availability conditions **Height:** up to 12' tall

#### Leaves

Dark green to blue-green oblong / egg-shaped leaves without teeth along margins and abruptly pointed to rounded at tip. Arranged opposite each other along stem. Twigs are hollow.

#### Flowers

Tubular, paired flowers with flaring petals. Flowers form in the spring at the points where leaves meet the stem. Color ranges from white to yellow to pink to rose.

#### Fruits

Paired red, orange, or yellow fleshy berries.

#### **†** Source:

Impacts to Natural Resources: Indiana Invasive Species Council

#### Photo credits:

#### **Garlic Mustard**

Main (circle): Paul McAfee Leaves: Scott Namestnik Flowers: Scott Namestnik Fruits: Ohio State Weed Lab, The Ohio State University

#### Japanese Barberry

Main (circle): R. A. Nonenmacher Other Photos: Scott Namestnik

#### **Oriental Bittersweet**

Main (circle): James H. Miller, USDA Forest Service Leaves: Paul McAfee Flowers: Paul McAfee Fruits: Public domain Seasonal Ieft: Scott Namestnik Seasonal right: Sten Porse

#### Spotted Knapweed

Main (circle): H. Zell Leaves: Arthur Haines New England Wild Flower Society Flowers: Scott Namestnik

#### **Burning Bush**

Main (circle): Matt Lavin Leaves & Stem: Scott Namestnik Flowers: Scott Namestnik Fruits: Steven J. Baskauf http://bioimages.vanderbilt.edu Seasonal: Jeffrey Belth

#### Lyme Grass

All photos: Scott Namestnik

#### Bush Honeysuckle

Main (circle): Leonora Ellie Enking Leaves: Paul McAfee Flowers: Hitchcock Design Group Fruits: Paul McAfee



## Invasive Species: The Terrible Ten, continued...

An "invasive" plant is a non-native plant that infests natural areas and causes environmental or economic harm, or harm to human health.





Clump-forming coarse grass that forms dense colonies

> Ideal conditions: Moist to dry open areas Height: up to 10' tall

Leaves Drooping leaves with a distinct silver midvein that form at the base of

Flowers & Fruits

Pinkish fan-shaped

clusters held

above leaves.

ong hairs form from





#### Pyrus calleryana **Callery Pear**

Tree with spine-like tips on young stems, hairy buds

Ideal conditions: Open areas with moist to dry soils Height: up to 50' tall

Leaves Leathery, smooth, glossy, dark green leaves that alternate along the stem.

> and abruptly pointed tips Become various bright colors in fal

Flowers Nearly flat-topped clusters of white five-petaled flowers that form in the spring

Fruits Hard, smooth, brown, round fruit develop in summer and persist through winter.



#### Rosa multiflora Multiflora Rose

Arching shrub with curved thorns that forms dense thickets

Ideal conditions: Full sun or shade, moist to dry soils Height: up to 15' tall

Leaves Divided into 5 to 11 oval, toothed eaflets and alternately arranged along the stem. aired fringed wing-like tructures (stipules) form at he base of the leafstalk.



Fruits Hard, smooth, red, round fruit develop in summer and persists through winter.



#### "Early Detection" species are identified by a white outline of the circular photo.

Early Detection is a process by which volunteers keep a lookout for invasive species that are unknown or minimally known so they can be reported and potentially controlled before becoming problematic. You can report early detection species at EDDmaps.org.

#### **Photo credits:**

**Chinese Silvergrass** Main (circle): Norbert Nagle

Leaves: Evan Raskin Flowers (fan shaped): Miya.m Fruits (long hairs): Kenpei

**Callery Pear** Main (circle): Jeffrey Belth Leaves: Scott Namestnik Flowers & Fruits: Jeffrey Belth

**Multiflora Rose** Main (circle): Jeffrey Belth Leaves: Scott Namestnik Flowers: Paul McAfee Fruits: Barry Rice 2009



## What to plant instead:

Serviceberry, Hawthorns, Eastern Red Cedar, Nannyberry, Swamp Rose.

## Where Do I Start with my Native Landscape?

## 1. Evaluate your site

After invasive plants have been controlled in your yard, you'll need to understand which Indiana Dunes landscape your home lies within. Use the information on pages 2 and 3 to help you determine this. Next, use a map or aerial image of your property to evaluate the existing site conditions. This will help you determine the appropriate plant species and locations to plant them. Consider the following:

- North, south, east and west orientation
- **Soil types** (fertility, texture, structure, and moisture)
- Vegetation
- Patterns of shade and sunlight
- Natural drainage patterns and topography
- Location of structures, utilities, and pedestrian / vehicular circulation patterns.

## 2. Determine your plant selection criteria

Your site evaluation will determine which plants to choose and where those selected plants will thrive on your property. You'll want to develop an outline of the criteria from which you'll be selecting your plants, paying close attention to:

- Sun / shade requirements
- Soil moisture and type
- Height and width / spread • Seasonality (blooming, winter interest)

## 3. Determine where to purchase native plants

You can purchase many of the native plants shown in this guide, and more, at local home and garden centers. This guide recommends the following resources for purchasing native plants:

- **Cardno Native Plant Nursery in Walkerton, Indiana** (\$100 minimum purchase)
- Chesterton Feed & Garden Center in Chesterton, Indiana
- Friends of the Dunes Annual Native Plant Sales in Beverly Shores. Indiana (early April)
- Naturally Native Nursery in South Bend, Indiana
- **Possibility Place in Monee, Illinois** (by appointment only) Spence Restoration Nursery in Muncie, Indiana
- (\$500 minimum purchase, wholesale only)
- Wild Ones Native Plant Sale at Gibson Woods in Hammond, Indiana (early May)

## Cedar Waxwing Impact

Cedar Waxwings are medium-sized brown and gray birds, named for their wax-like yellow tail bands. While these birds enjoy devouring the berries of native plants like the Serviceberry and Eastern Red Cedar, an invasive species known as Morrow's Honeysuckle (Lonicera morrowii) has begun to dominate much of the Waxwings' habitat. The honeysuckle's berries cause the Waxwings' yellow tail bands to take on an unusual orange hue, and this color change affects the birds' abilities to select prime mates and resolve territorial disputes.

Photo Credit: © Ben Thomas/GBBC

## 1. Ask Questions

When buying natives, consider asking your nursery the following questions to evaluate their native plant selection. The correct answer that the nursery should provide is noted in parenthesis.

- What is the source of this plant? Are your plants locally sourced from local stock? (answer: yes)
- Is the plant native to this region? (answer: yes)
- Are these plants treated with neonicotinoids? (answer: no)
- Does the plant information list the scientific name? (answer: yes)
- Is the plant a nativar (nearly native) or cultivar? Is there an additional description behind the name (e.g. Acer rubrum 'Brandywine'') (answer: no)

## 5. Plant

This is the part where all your hard work finally comes to fruition. Once you've designed your landscape and purchased your plants you're ready to plant your native landscape. Keep the following considerations in mind as your plant your landscape:

- Utilities: Before digging, mark all utilities and avoid planting in those areas.
- **Planting seasons:** Spring and fall are the best times to plant. During these seasons, plants establish quickly because soil is cooler and moister.
- Layout of your plants: Arrange your plants per spacing requirements while they are still in their containers. The sizes of the initial plants you install are small, but they grow! Pay close attention to the layout recommendations for each plant to avoid overcrowding.
- Top Soil and Mulching: To install your plant, insert it into the ground so that potting soil is level or just below the top of the ground and fill in with topsoil. The exact amount will vary based on the type of plant, so check the plant tag for direction or check with your local nursery.
- Watering: Always water newly installed plants immediately after planting.

## Use Natives Instead: The Top 20

A native plant is one that occurs naturally in a particular region, ecosystem, or habitat without direct or indirect human intervention. Indiana Native Plant and Wildflower Society (INPAWS) defines a native plant species as one that has occurred naturally in the area since European settlement.



Ammophila breviligulata Marram Grass

Clump and colony forming coarse grass

**Ideal conditions:** Dry sand, especially on the foredune Height: up to 5' tall





Flowers )ense, spike-like lusters up to 10" long ind held above leaves



Fruits Pale green clusters form in summer and become beige in fruit, persisting into winter





#### Aquilegia canadensis Wild Columbine

Herbaceous perennial

**Ideal conditions:** Tolerant of various soil, light, and moisture (except wet) conditions Height: up to 3' tall

> .eaves Compound and Itimately divided into nree lobed gray-green eaflets to 3" long; eaves in basal osettes and stem aves alternate.



Fruits Five erect, tan, dry, papery follicles with long beaks.





#### Asclepias incarnata Swamp Milkweed

Herbaceous single stemmed perennial that forms ascending branches near the top

> Ideal conditions: Saturated sunny areas, but tolerates moist soils **Height:** up to 6' tall





n late summer.

Fruits Smooth, lance-shaped, green follicle up to 4" ong. Turns tan and papery and splits to expose brown seeds with long silky white tufts of hair.





#### Asclepias tuberosa **Butterfly Weed**

**Herbaceous multi-stemmed** perennial that becomes branched at the flowers

> **Ideal conditions:** Dry to moist soil in full sun to partial shade Height: up to 6' tall







Clusters are up to 2 ½" cross at top of stem.

Fruits Lance-shaped, greenish follicle up to 6" long. urns tan and papery and splits to expose browr seeds with long silky white tufts of hair.



## Benefits:

Native plants are adapted to the climate and soil in which they live and also provide food and habitats necessary for a healthy wildlife population. Other benefits include:

- Providing seed, nuts, nectar, and fruits for wildlife
- Providing habitats and cover for wildlife
- Serving as larval host plants for butterfly caterpillars
- Requiring less fertilizer, fewer pesticides, and less water
- Storing carbon dioxide effectively





<u>Coreopsis lanceolata</u> Sand Coreopsis

Herbaceous perennial prairie and savanna plant

Ideal conditions: Dry sandy soil, but tolerates loamy or clayey soil and medium moisture Height: up to 1-2' tall





Fruits 1/2" dia. fruiting head turns dark brown.



### *Elymus hystrix* Bottlebrush Grass

Perennial grass that lacks dense conspicuous clump at base

> Ideal conditions: Moist or dry soils in shade **Height:** up to 5' tall

> > Leaves Gray-green, up to 1' long by 1/2" wide alternate along stem Sometimes hairy on one side. Whitish waxy-coated sheaths Purplish auricles (ear

base of blade. Flowers n summer, sten erminates in

vhitish-green, nflorescence (flower cluster) up to 8" long. Clusters have florets (small flowers) priented early perper

Seasonal Change Inflorescence becomes straw-colored at maturity and florets fall off, leaving small



















#### For more information visit:

savedunes.org/dunes-residential-guide



#### Eryngium yuccifolium Rattlesnake Master

Unbranched hairless, waxy, herbaceous perennial

Ideal conditions: Full sun and dry to saturated soil Height: up to 5' tall



.eaves ff strap-like, blue reen, sharp-tipped 1⁄2' long by 2 1⁄2" vide, with parallel pins and scattered ristles on margins. orm in circular ttern at base of



#### Flowers

Tiny white 5 parted flowers form in mid-summer in many densely packed 1 <sup>1</sup>/<sub>2</sub> diameter prickly ball-shaped clusters at top of plant.

Fruits Flower heads become reddish brown at maturity



#### Photo credits:

#### Marram Grass

Main (circle): Scott Namestnik Leaves: Tony Troche Flowers: Scott Namestnik Fruits: Scott Namestnik

#### Wild Columbine

Main Photo: Joshua Mave Leaves: Scott Namestnik Flowers: Christopher David Benda Fruits: Scott Namestnik

#### Swamp Milkweed

Main (circle): Paul McAfee Leaves: Jenny Allison Flowers 1: Paul McAfee Flowers 2: Scott Namestnik Fruits: Paul McAfee

#### Butterfly Weed

Main (circle): Scott Namestnik Leaves: Bob Barber Flowers: Bob Barber Fruits: Paul McAfee

#### Sand Coreopsis

Main (circle): Scott Namestnik Leaves 1: Arthur Haines New England Wild Flower Society Leaves 2: Forest and Kim Starr\_httpcreativecommons. orglicensesby3.0legalcode Flowers: Scott Namestni Fruits: Steven J. Baskauf, 2003, http://bioimages.vanderbilt.

#### Bottlebrush Grass

Main (circle): Scott Namestnik Leaves: Scott Namestnik Flowers: Jeffrey Belth Seasonal: Scott Namestnik

#### **Rattlesnake Master**

Main (circle): Tony Troche Leaves: Scott Namestnik Flowers: Tony Troche Fruit: Scott Namestnik

## Use Natives Instead: The Top 20, continued...

According to the Indiana Wildlife Federation, native Indiana plants are best suited for the soil and weather conditions in our area. As a result, native plants require less fertilizer, fewer pesticides, and less water. Native plants are necessary for healthy wildlife populations and help prevent the spread of invasive exotic species.



Eurybia macrophylla **Big-leaved Aster** 

#### **Herbaceous** perennial

**Ideal conditions:** Tolerates moist to dry soils in shade or partial shade **Height:** up to 3' tall



Mature: Less heartaped, alternate g upright stems branch into the prescence (flower

owers

' wide heads

m a flat-topped

prescence (flower

ster) up to 8" across



Heads comprised of white to lavender petal-like ray flowers and yellow disk flowers that become red / brown with age. Tiny glandular hairs cover the branches.





Geranium macul<u>atum</u> Wild Geranium

**Herbaceous** perennial

Ideal conditions: Thrives in moist to dry soils in shade or partial shade **Height:** up to 2 <sup>1</sup>/<sub>2</sub>' tall

> .eaves At base: opposite deeply-veined, up to long with 5-7 lobes adiating from a single point; lobes narrow it base

Opposite along stem, smaller than those at base, with 3-5 deep

owers 5 pink to lavende etailed flowers to " across form in ing atop each stem

Fruits Narrow fruit to 1 <sup>1</sup>/<sub>2</sub>" long that becomes dark brown and unfurls from the base to the tip.





#### Hamamelis virginiana Witch Hazel

Multi-branched shrub or small tree with smooth gray-brown bark

> Ideal conditions: Dry to moist shaded to partially-shaded areas Height: up to 25' tall







Seasonal Change Leaves turn yellow to orangish brown before ng while flowers are present; flowers mature





Juniperus communis Common Juniper

**Evergreen spreading shrub** or small tree

> **Ideal conditions:** Dry sand in sunny to partially shaded areas Height: up to 10' tall



eaves -like leaves en with single ite band, to  $^{2/3}$ ig in whorls of 3 n drooping branches

lowers

Fruits Berry-like cones to 1/4" diameter that begin green and mature to blue with a waxy coating



## Types of Native Plants:

Wildflowers are typically the first plants to come to mind when someone mentions "native plant." In reality, there is actually a large range of plant types that make up the native plant pallette, including:

- Trees
- Shrubs
- Sedges
- Grasses

- Ferns Mosses and Liverworts
- Fungi



Liatris aspera

**Rough Blazing Star** 

Herbaceous unbranched perennial

Ideal conditions:

Tolerates dry to moist open to

partially-shaded conditions

**Height:** up to 5' tall

eaves

Young: Short-stalked,

nple unlobed

ip, up to 16" long by

" wide with strong

rcular pattern at the

hidrib Form in

Mature: alternate

bugh, hairy stem.

eaves at base.

lowers

erminal spikes with

umerous pink to purplish disk flowers

uster together in 1

utton-like heads.

from top of inflorescence to bottom.

along green to reddish,

lecome smaller up the

tem, similar shape to

oothless, tapered



#### Lobelia siphilitica Great Blue Lobelia

#### Herbaceous unbranched, short-lived perennial

Ideal conditions:

Saturated open to shaded conditions, Can tolerate moist soils Height: up to 4' tall

#### .eaves

Young: Up to 5" ng, ellipse-shaped h shallow irregula eeth and pale margir form at base of plant; ellowish-green sap present when broken

#### Mature: Ellipse-shaped, longer than wide, alternate



Flowers form in late summer, are up to Late summer blooms, with flowering sequence 1 1⁄2" long, face upward, and have two lobes lip and three lobes on lower lip





























#### Monarda fistulosa Wild Bergamot

#### **Branched herbaceous perennial**

Ideal conditions: Moist to dry sunny areas **Height:** up to 5' tall



#### eaves

Young: Opposite, urplish green, triangular to egg-shaped with toothed margins and short stalks on quare stem; fragrant ften oregano-like smell, when crushed

Mature: Similar in all respects to young eaves, up to 4" long by 2" wide, with stro



Flowers

wender flowers form tight 3" dia. heads i nid-summer at ends

#### Seasonal Change Button-shaped remains of flower heads turn brown after flowers fall, persist through winter

#### † Source:

Types of Native Plants: Indiana Native Plant and Wildflower Society

#### Photo credits:

#### **Big-leaved Aster**

Main (circle): Tony Troche Leaves: Scott Namestnik Flowers: Tony Troche Fruit: Scott Namestnik

#### Wild Geranium

Main (circle): Paul McAfee Leaves 1: Scott Namestnik Leaves 1: Paul McAfee Flowers: Pete Grube Fruit: Scott Namestnik

#### Witch Hazel

Main (circle): NetPS Plant Finder Leaves 1: Christopher Tracy, PNHP Leaves 2: Paul McAfee Flowers: Scott Namestnik Seasonal: Paul McAfee

#### Common Juniper

Main (circle): Scott Namestnik Leaves: Scott Namestnik Flowers: John Seiler Fruit: Chris Cant

#### **Rough Blazing Star**

Main (circle): Scott Namestnik Leaves: Scott Namestnik Flowers 1: Pete Grube Flowers 2: Scott Namestnik

#### Great Blue Lobelia

Main (circle): Scott Namestnik Leaves 1: Jenny Allison Leaves 2: Jeff Hansen Flowers 1: Christopher David Benda Flowers 2: Paul McAfee

#### Wild Bergamot

Main (circle): Jeffrey Belth Leaves: Scott Namestnik Flowers: Tony Troche Seasonal: Marlo Perdicas

## Use Natives Instead: The Top 20, continued...

Native plants are not only important for wildlife, biodiversity, and sustainability, but they are part of what makes the Indiana Dune landscape the "Indiana Dunes." As Lady Bird Johnson said, "Native plants give us a sense of where we are in the great land of ours."



#### Nyssa sylvatica Black Gum

Tree with pyramidal shaped crown and nearly horizontal branches

Ideal conditions: Sandy soil at the intersection of upland and wetland areas Height: up to 80' tall



.eaves Young: Alternate, orled, coarse teeth on upper half. Mature: Leathery, pointed-tip, 5" long oy 3" wide, no lobes, Íternate on short stalks



Seasonal Change Leaves become brightly colored yellow orange, red, or purple in fall.





#### Pinus strobus White Pine

**Conical tree with whorled** and horizontal branching

Ideal conditions: Moist to dry sand and loam in open or partially-shaded conditions Height: up to 120' tall

Bark Dark gray and fissured.



Leaves consist of yellow-green to dark green needles up to " long.

isters of <sup>a</sup>

Fruit Separate male and female cones on the same tree; seed cones to 8" long at maturity, cylindrical, reddish to gravish brown, without prickles.





#### Quercus alba White Oak

Tree with rounded crown (when grown in the open)

Ideal conditions: Dry to moist open to partially-shaded conditions Height: up to 100' tall



Leaves eaves alternate, to 1⁄2" long and 4 1⁄2" vide, smooth, with eep, rounded, evenly

Fruit

Acorns develop in fall,

o 1" long with a

hallow cap that



nprises <sup>1</sup>/4 the total gth of the acorn. Seasonal Change

Leaves become reddish, purplish, or brown in





Schizachvrium scoparium Little Bluestem Grass

**Clump forming grass** 

Ideal conditions: Moist to dry soils in open to partially-shaded conditions **Height:** up to 4' tall

> Leaves Seedlings are clumped with very flat stems and short ligules and are often bluish purple at base.

Soft pale green leaves to ¼'' wide and 4' long are flat and often hairy at base.



Seasonal Change Foliage becomes coppery-orange in fall and tan in winter.





Solidago speciosa Showy Goldenrod

Herbaceous unbranched perennial

Ideal conditions: Dry to moist open to partially-shaded conditions Height: up to 4' tall



Flowers Up to 1' long dense terminal flower head cluster with ray and disk flowers (up to ½" across) forms in late mmer

Seasonal Change Seeds have white pappus (hairs) that aid in dispersal and persist into winter.





Tradescantia ohiensis Common Spiderwort

> Herbaceous, sometimes branched, perennial

#### Ideal conditions:

Dry to moist soils in open to partially-shaded conditions **Height:** up to 4' tall

#### Gray-green waxy

grass-like leaves to 15" ong and 1" wide are somewhat succulent with clear sap and clasp stem at base; ometimes long and airy when young, cóming smooth ernate along stem

### Flowers

Clusters of numerous flowers with smooth gray-green sepals form at top of plant in late spring.

3-parted blue-violet flowers to 1 1/2" wide open for only one day, but blooming period lasts several months.



The INPAWS-recommended reading guide provides nearly a dozen books and other guides to landscaping with native plants. To learn more visit:

inpaws.org/landscaping/580-2

#### Photo credits:

#### **Black Gum**

Main (circle): Chicago Botanic Garden Bark: Scott Namestnik Leaves: Scott Namestnik Fruit: Pauline Singleton Seasonal: Berean Hunter

#### White Pine

Main (circle): Paul McAfee Bark: Paul McAfee Leaves: Paul McAfee Fruit: Keith Kanoti

#### White Oak

Main (circle): John A. Knouse Bark: Scott Namestnik Leaves 1: Paul McAfee Leaves 2: Jeffrey Belth Fruit: Paul McAfee Seasonal: Scott Namestnik

#### Little Bluestem Grass

Main (circle): Scott Namestnik Leaves 1: Scott Namestnik Leaves 2: Jeffrey Belth Fruit: Scott Namestnik Seasonal: Paul McAfee

#### Showy Goldenrod

Main (circle): Scott Namestnik Leaves 1: Kenneth Robertson Leaves 2: Arthur Haines Fruit: Scott Namestnik Seasonal: Kenneth Robertson

#### **Common Spiderwort**

Main (circle): Paul McAfee Leaves: Scott Namestnik Flowers: Paul McAfee

## Template Garden Designs

As you use these garden designs to help you arrange your native plantings make sure to review each native plant's ideal conditions, height, and bloom season to help you choose the best plant for your landscape.



## Understanding the Guide:

This guide aims to help you, as a homeowner, understand how to arrange native plants to provide a functional, aesthetically-pleasing landscape design. The following diagrams provide an easy-to-use kit-of-parts for five different typical residential planting types. Each diagram has a plant list specific to one of the five dune landscapes described on pages 2 and 3, including:

#### A. Buffer, Foredune

B. Garden, Interdunal WetlandC. Tree Grove, North Slope Dune WoodlandD. Foundation Planting, Oak SavannaE. Corner Planting, South Slope Dune Woodland



#### A: Buffer Example plant list for Foredune

1: Common Juniper, Juniperus communis 2: Marram Grass, Ammophila breviligulata 3: Little Bluestem Grass, Schizachyrium scoparium 4: Butterfly Weed, Asclepias tuberosa 5: Showy Goldenrod, Solidago speciosa

### C: Tree Grove

#### Example plant list for North Slope Dune Woodland

White Oak, Quercus alba (canopy)
 White Pine, Pinus strobus
 Black Gum, Nyssa sylvatica
 Witch Hazel, Hamamelis virginiana
 Bottlebrush Grass, Elymus hystrix
 Big-leaved Aster, Eurybia macrophylla

## D: Foundation Planting

#### Example plant list for Oak Savanna

Wild Bergamot, Monarda fistulosa
 White Pine, Pinus strobus
 Little Bluestem Grass, Schizachyrium scoparium
 Butterfly Weed, Asclepias tuberosa
 Wild Columbine, Aquilegia canadensis
 Sand Coreposis, Coreopsis laceolata
 Rough Blazing Star, Liatris aspera
 Common Spiderwort, Tradescantia ohiensis



### B: Garden Example plant list for Interdunal Wetland

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1: Swamp Milkweed, Asclepias incarnata 2: Rattlesnake Master, Eryngium yuccifolium 3: Great Blue Lobelia, Lobelia siphilitica





## E: Comer Planting

#### Example plant list for South Slope Dune Woodland

- 1: White Oak, Quercus alba (canopy)
- 2: White Pine, Pinus strobus
- 3: Witch Hazel, Hamamelis virginiana
- 4: Big-leaved Aster, Eurybia macrophylla
- 5: Wild Columbine, Aquilegia canadensis
- 6: Wild Geranium, Geranium maculatum



## What to plant instead:

## What else can I do?

## Monarch Butterfly Impact

Female Monarchs lay their eggs on milkweed plants (Asclepias) to ensure the best chance of survival for their larvae. However, an invasive species known as Black Swallow-wort (Cynanchum louisea), threatens the survival of Monarch caterpillars. Even though Black Swallow-wort is a member of the Milkweed family, when caterpillars eat these plants they cannot survive. Monarch females have been known to prefer laying their eggs on the plants, even when it's growing in the same field as common milkweed. Swallow-wort plants are not only toxic to Monarch butterfly larvae, but also to livestock and deer.

Photo Credit: ©Teune at the English language Wikipedia

**Milkweed.** Native plants also help restore Monarch Butterfly habitats. To learn more visit: **monarchwatch.org** 



#### **Bioswale / Vegetated Swales**

Shallow trenches or road shoulders planted with native plants and used to slow the speed of surface stormwater runoff.

#### **Benefits:**

- Allows stormwater to infiltrate back into the soil
- Filters silt, pollutants, and debris
- Recharges ground water
- Reduces impact to storm sewer piping and structures
- Provides locations for wildlife habitats



#### Green Roof

A roof partially- or completely-covered with plants. A green roof system includes soil, plants, waterproofing, and a drainage system.

#### **Benefits:**

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- Reduces impact to storm sewer piping and structures
- Reduces heat island effects
- Reduces energy costs for heating and cooling



**Rain Garden** 

Landscaped areas planted with native perennial plants that slow stormwater runoff from surrounding impervious surfaces such as roofs, sidewalks, and parking lots.

#### **Benefits**:

- Allows stormwater to infiltrate back into the soil
- Filters silt, pollutants, and debris
  - Reduces the rate of runoff
  - Recharges groundwater
  - Provides habitat for birds and wildlife



#### Composting

The process of placing yard waste, organic waste, and some paper products into a bin to decompose.

#### **Benefits**:

- Reduces waste hauled to landfills
- Provides a natural fertilizer to plants



#### **Permeable Paving**

Paving that allows stormwater to penetrate through surface and stone base materials and eventually infiltrate the soil below. Types of permeable paving include reinforced gravel and grass paving, permeable concrete, permeable asphalt, and modular unit pavers.

#### **Benefits**:

- Reduces impact to storm sewer piping and structures
- Recharges ground water
- Reduces urban heat island effects



#### **Rain Barrel / Cistern**

Containers used to collect and store rain water from impervious surfaces for reuse in irrigating plants.

#### **Benefits:**

- Recycles rainwater
- Reduces impact to storm sewer piping and structures

## Do You Have a Spectacular Native Landscape?

Shirley Heinze Land Trust works to protect and restore natural areas within Northwest Indiana. Each year, **Friends of Shirley Heinze** offers the "Bringing Nature Home Native Landscaping Award," recognizing outstanding examples of native heinzetrust.org/bringing-nature-home



## How Do I Maintain My Native Landscape?

## 1 Weed Control

During the first few years, control weeds by hand pulling or spot spraying with a glyphosate herbicide such as Roundup™. As the plants become more established, they are able to crowd out weeds, reducing the need for additional weed control.

## 2. Fertilization:

needed by native plants.

Fertilization is not necessary with most native landscapes; however, adding oneto two-inches of compost each fall helps maintain the fertility and organic matter

## 3. Mulching:

Mulching prevents the loss of soil moisture, controls soil temperature, and suppresses weeds. Once shrubs and grasses are established, mulching isn't necessary; however, many people prefer to mulch around large woody plants such as trees and large shrubs.



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