



# Understanding Sand Dunes

West Michigan's sand dunes started forming during the Pleistocene Epoch Era, 1,800,000 years ago. Glaciers transported sand and other material to an area called a glacier drift. Slowly overtime through process of advancing and retreating, glaciers created large cuts in the land, forming the Great Lakes. Once the sediment dried out along the lakeshore, these materials became susceptible of being wind blown. The materials were eventually deposited where they are today. Dunes are continuing to change by not only human impact, but by natural occurrences through wind and cyclical water level changes. Today we are seeing historical high water levels, so it is more important than ever to protect our dunes.

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## **How MCD can assist you:**

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Dune Grass Plantings  
Bank Stabilization  
Supplier for plant materials  
Invasive Species Treatments

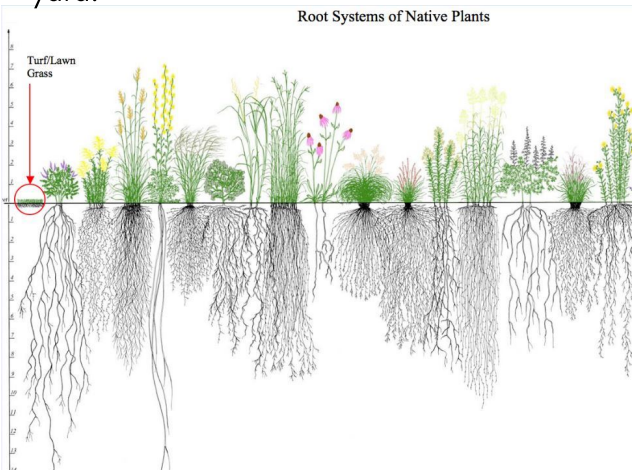
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A GUIDE TO HELP PROTECT  
YOUR WATER FRONT PROPERTY

## Best Management Practices

- Wanting a view of the lake? Often times trees get cut down for a view. The tree roots is supporting more than just property value of your lake front, it's stabilizing your dune. Consider cutting off the limbs of the tree that is obstructing your lake view.
- Do not mow all the way up to the edge of your dune. If you can plant native plants on the dune edge, this will stabilize your front yard.



- Do not irrigate your lawn near the crest of the dune. The pressure/weight of the water will slowly erode the soil underneath your yard, causing a section of your property to collapse.
- Treat invasive species on your property. Invasives out compete and choke out your native plants that stabilize your property.
- Is your dune bare? Consider native species with deep roots that have evolved to survive on sand dunes.
- Do you live on a critical dune and are planning on making landscaping/ construction changes? Make sure to get the proper permits to complete this work. These permits are required to protect our natural resources and your property. Check out [Michigan.gov/CriticalDunes](http://Michigan.gov/CriticalDunes) for more information.

## Plants Suited for Dunes:

Different species of plants have adapted to survive on sand dunes. The location of where you plant these species will determine their planting success. First thing you need to know is where are you located on a dune.

### Fore Dune Plant Species

Beach Grass (*Ammophila breviligulata*)  
 Sand Reed Grass (*Calamovilfa longifolia*)  
 Common Milkweed (*Asclepias syriaca*)  
 Sea-rocket (*Cakile edentula*)  
 Harebell/Bluebell (*Campanula rotundifolia*)  
 River-bank Grape (*Vitis riparia*)  
 Sand Cherry (*Prunus pumila*)  
 Cottonwood (*Populus deltoides*)

### Mid Dune Plant Species

Little Bluestem (*Schizachyrium scoparium*)  
 Sand Cress (*Arabidopsis lyrata*)  
 Wild Wormwood (*Artemisia campestris*)  
 Bugseed (*Corispermum sp.*)  
 Pitcher's Thistle (*Cirsium pitcheri*)  
 Summer Grape (*Vitis aestivalis*)  
 Bearberry/Kinnikinnick (*Arctostaphylos uva-ursi*)  
 Blueleaf Willow (*Salix myricoides*)

### Back Dune Plant Species

Canada Wild Rye (*Elymus canadensis*)  
 Flowering Spurge (*Euphorbia corollata*)  
 Seaside Spurge (*Euphorbia polygonifolia*)

## Back Dune Plant Species Continued

Plains Puccoon (*Lithospermum carolinense*)  
 Horse Mint (*Monarda punctata*)  
 Common Evening Primrose (*Oenothera biennis*)  
 Beach Pea (*Lathyrus japonicus*)  
 Ground Juniper (*Juniperus communis*)  
 Creeping Juniper (*Juniperus horizontalis*)  
 Yew (*Taxus canadensis*)  
 Kalm's St. John's-wort (*Hypericum kalmianum*)  
 False Heather (*Hudsonia tomentosa*)  
 Red-osier (*Cornus sericea*)  
 Alternate-leaved Dogwood (*Cornus alternifolia*)  
 Serviceberry (*Amelanchier interior*)  
 Smooth Shadbush (*Amelanchier laevis*)  
 Round-leaved Serviceberry (*Amelanchier sanguinea*)  
 Shadbush Serviceberry Amelanchier spicata Shrub  
 Hop-hornbeam (*Ostrya virginiana*)  
 Basswood (*Tilia americana*)  
 American Beech (*Fagus grandifolia*)  
 Red Oak (*Quercus rubra*)  
 Black Oak (*Quercus velutina*)  
 Sugar Maple (*Acer saccharum*)  
 Red Maple (*Acer rubrum*)  
 Red-cedar (*Juniperus virginiana*)  
 White Cedar (*Thuja occidentalis*)  
 White Pine (*Pinus strobus*)  
 Jack Pine (*Pinus banksiana*)  
 Red Pine (*Pinus resinosa*)  
 Hemlock (*Tsuga canadensis*)  
 Balsam Fir (*Abies balsamea*)

