



Vegetation Assurance Plans for Designated Critical Dune Areas

The Critical Dune Areas (CDA) program is administered under the authority of Part 353, Sand Dune Protection and Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The CDA program protects the extremely fragile areas of Michigan's dunes by promoting the use of design and construction techniques to minimize impacts of uses on the dunes. The coastal sand dunes are home to unique vegetation communities each with its own mix of trees, shrubs, herbs, and grasses. This vegetation gives the project site its own character. The removal or damage to existing vegetation during construction may increase erosion on the site and lead to a decrease in the stability of the land. If the site is not stabilized the characteristics that make the site so appealing may disappear. There may also be increased costs for ongoing sand plowing and invasive plant removal on unstable sites. Replacing the vegetation removed during construction will lessen erosion and maintain the stability of the dune. Property owners will continue to enjoy the unique character of their dune property after construction on a site stabilized with vegetation.

The law requires the property owner provide an assurance that the cutting and removal of trees and other vegetation for a proposed use in a critical dune area will be in accordance with the Forest Management Guidelines for Michigan (Guidelines) prepared by the Michigan Society of American Foresters and updated in 2010, MCL 324.35313 (1)(c). The law also requires restabilization of the dune with native vegetation for a structure proposed within 100 feet landward of the crest, MCL 324.35304 (4)(c). Projects that are likely to increase erosion or decrease stability cannot be approved, MCL 324.35316. The Joint Permit Application will ask you if vegetation will be removed. This question must be answered before submitting your application. Providing a thoughtful and meaningful vegetation assurance will help the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to evaluate the project for a timely permit decision.

As such, the Conservation District is able to develop a Vegetative Assurance Plan to assure that the cutting and removal of trees and other vegetation will be performed according to these instructions and that no more trees or vegetation are removed from a site than necessary, to be determined by a site review performed by a technician from the Conservation District. The Conservation District assigns a fee of not less than \$250.00 for a site review of the Critical Dunes Area and for the development of a Vegetative Assurance Plan. The District may reduce the fee if no vegetation is being removed. Refunds will not be issued for projects that are modified or denied by EGLE. Modifications that require an extra site visit and new report from the Conservation District will be assessed additional fees.

Prior to site review the Conservation District office must receive:

- \$250 fee made payable to the Conservation District. Assurances requiring time exceeding four hours will be billed at a rate of \$40.00 per hour in addition to the base \$250.00 fee.
- Critical Dune Areas map identifying site
- Vicinity map and directions to site
- Site plan (no larger than 11" X 17" please) including:
 - Physical footprint of the development (structural envelope)
 - Setbacks (as required by local zoning ordinances)
 - Extent of disruption of the site (area needed for construction activities, staging, etc.)
 - Location of trees greater than 3" DBH
- Site must be staked upon site visit including:
 - Property boundaries
 - Proposed structure corners
 - Septic field
 - Water well
 - Driveway location and other land alterations (pools, decks, etc.)

After reviewing your EGLE permit application, the Michigan Department of Natural Resources, under the authority of Section 365, Endangered Species Protection, Natural Resources and Environmental Protection Act, may require the completion of a threatened and endangered species review. Your local Conservation District may be able to provide this review along with the Vegetation Assurance (a fee may be assessed).

The Conservation District will schedule a site review within 5 business days of receiving your completed form, the previously described maps, site plan, and the \$250.00 base fee. By scheduling a site review, Conservation District staff will be allowed full access to the property. District staff will only visit the site after confirming the date and time with the property owner / agent.

During the site review, the property owner / agent is encouraged to be present to discuss options and assurance criteria. Upon completion of the site review, the Conservation District will provide the property owner / agent with a Vegetative Assurance Plan, and if necessary, a site plan map with proposed revisions. All assurance materials will be sent to the property owner / agent within 5 business days after completing the site review.

Assurances are considered complete and valid only after a site review has been completed and the owner / agent have signed the recommendation agreement. A District staff member must sign and date the agreement to validate an assurance and the associated site review. Assurances must be included with submittal of a permit application to EGLE.

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The Conservation District suggests the following general recommendations that the property owner / agent should consider prior to the site visit. The Conservation District will base site review comments and suggestions on the following recommendations.

REMOVAL

- No removal of vegetation more than 10 feet from proposed building; and no more than 5 feet from proposed decks, along driveways, septic systems, water wells. (This does not apply to non-native invasive or exotic species)
- Shortwood harvesting methods should be used (conversion of trees into desired length products at the stump, either by hand with chain saws or by using a mechanized processor which fells, delimbs, and bucks the tree into saw logs, pulpwood sticks, or other products)
- Maintain large diameter trees (greater than 16" DBH)
- Maintain mature trees (seed / mast producing), especially cedar and hemlock
- Maintain trees and shrubs that would improve diversity of the site
- Minimize the amount of edge created
- Maintain tree communities that provide necessary niches within bigger landscape
- Avoid removal of trees / shrubs that may impact unique natural features in the area including: ponds, streams, seeps, springs, parabolic dunes (blow-outs), foredunes, dune ridges, or areas with high densities of wildflowers
- Avoid removal of trees / shrubs in areas that contain endangered or threatened plants (*i.e.*, pitchers thistle); <http://web4.msue.msu.edu/mnfi/>
- Trees that are removed should be cut off at ground level and stumps left in place.

...recommendations continued on next page

PLANTING / STABILIZING

- All areas cleared of vegetation and not impacted by structure (building, driveway, etc.) must be replanted with native vegetation. Species should reflect dune zone (*i.e.*, foredune, secondary / transition dune, stable dune / backdune).

Foredune

<i>Ammophila breviligulata</i>	Marram grass
<i>Calamovilfa longifolia</i>	Sand reed grass
<i>Populus deltoids</i>	Cottonwood
<i>Prunus pumila</i>	Sand cherry
<i>Salix glaucophylloides</i>	Blue willow
<i>Salix myricoides</i>	Blueleaf willow
<i>Vitis aestivalis</i>	Summer grape
<i>Vitis riparia</i>	Riverbank grape

Backdune

<i>Abies balsamea</i>	Balsam fir
<i>Acer rubrum</i>	Red maple
<i>Acer saccharum</i>	Sugar maple
<i>Amelanchier interior</i>	Inland serviceberry
<i>Amelanchier laevis</i>	Smooth serviceberry
<i>Amelanchier sanguinea</i>	Red serviceberry
<i>Amelanchier spicata</i>	Serviceberry
<i>Fagus grandifolia</i>	American beech
<i>Pinus banksiana</i>	Jack pine
<i>Pinus resinosa</i>	Red pine
<i>Pinus strobus</i>	Eastern white pine
<i>Lithospermum croceum</i>	Hairy puccoon
<i>Quercus velutina</i>	Black oak
<i>Monarda punctata</i>	Horsemint, spotted bee-balm
<i>Thuja occidentalis</i>	Northern white cedar
<i>Tilia americana</i>	American basswood
<i>Tsuga canadensis</i>	Eastern hemlock

Transition Dune

<i>Andropogon scoparius</i>	Little bluestem
<i>Arabis lyrata</i>	Sand cress
<i>Arctostaphylos uva-ursi</i>	Bearberry
<i>Artemisia campestris</i>	Wormwood
<i>Asclepias syriaca</i>	Common milkweed
<i>Cakile edentula</i>	American sea-rocket
<i>Campanula rotundifolia</i>	Harebell, Scottish bellflower
<i>Cirsium pitcheri</i>	Pitcher's thistle
<i>Corispermum hyssopifolium</i>	Bug-seed, tick-seed
<i>Cornus stolonifera (sericea)</i>	Red-osier dogwood
<i>Elymus canadensis</i>	Canada wild rye
<i>Euphorbia corollata</i>	Flowering spurge
<i>Euphorbia polygonifolia</i>	Seaside spurge
<i>Hudsonia tomentosa</i>	False heather
<i>Hypericum kalmianum</i>	St. John's wort
<i>Juniperus communis</i>	Ground juniper
<i>Juniperus horizontalis</i>	Creeping juniper
<i>Juniperus virginiana</i>	Easter red cedar
<i>Lathyrus maritimus</i>	Beach pea
<i>Lathyrus japonicus</i>	Beach peavine
<i>Quercus rubra</i>	Northern red oak
<i>Lithospermum carolinense</i>	Plains puccoon
<i>Taxus canadensis</i>	American yew
<i>Oenothera biennis</i>	Common evening primrose

- Species should be suited for local soil and climate (temperature, rainfall, hardiness zone)
- Vegetation should be planted with the following spacing / density:

Hardwoods:	10' X 10'
Conifers:	8' X 8'
Shrubs:	6' X 6'
Grass/wildflower plugs:	1' X 1'
- Replacement of a native tree species with the same native tree species or a recommended native species present in surrounding area.
- 50% of replacement trees must have a 2" caliper. Other 50% may be seedlings.
- Open areas should be stabilized at the very minimum with the following native grasses: marram grass, little bluestem, sand reed grass, and switch grass (*Panicum virgatum*). Other native grasses and wildflowers should be added to maintain diversity previously present. "Turf grass" is not an appropriate substitute. Species unacceptable for slope stabilization include periwinkle (*Vinca* spp.), myrtle (*Myrtus communis*), bugleweed (*Ajuga reptans*), English ivy (*Hedera helix*), sedum (*Sedum* spp.), pachysandra (*Pachysandra* spp.), and other ornamental groundcovers or vines.
- Forested areas should have forest litter (organic debris) continually added to soil surface and wetted to diminish soil movement during construction.
- Replacement vegetation should be maintained for minimum of 5 (five) years. Vegetation that dies through natural or man-made causes should be replaced.

Individuals are encouraged to contact the Conservation District for assistance and species recommendations if species are not identified within the assurance agreement.

GLOSSARY OF TERMS

Backdune: behind the transition dune, usually forested, provides shade, cool temperatures and moist soil for its inhabitants

Caliper: diameter of the stem 6 inches above the nursery planting line

Contour: an imaginary line on the land surface that connects points of equal elevation

Corridor: a connection between two patches of habitat that allows for the safe travel of individuals between the patches.

Critical dune area (CDA): dunes composed of wind deposited sand that are at least 20 feet in height, contain dune-associated plant communities, extend no farther than 2 miles inland of a Great Lake

DBH: diameter at breast height; diameter of the trunk at 4.5 feet off the ground

Edge effect: a condition in which otherwise suitable habitat becomes less suitable for a species because it is adjacent to non-habitat land. This degradation of habitat may occur due to predation from species that live outside of the patch, or increased competition with species that live outside the habitat patch.

Endangered species: a species that is in danger of extinction throughout all or a significant portion of its range

Foredune: area directly behind the beach, stabilized by grasses such as marram grass and sand reed grass, sand is subjected to shifting by water and wind

Fragmentation: the process whereby a large patch of habitat is broken down into many smaller patches of habitat, resulting in a loss in the amount and quality of habitat.

Hardiness zone: a geographic area, established by the U.S. Department of Agriculture, that contains a range of average minimum winter temperatures

MDEQ: Michigan Department of Environmental Quality; state agency that administers the Michigan Critical Dune Law (Part 353) and has the authority to issue permits under this law

Mitigation: measures taken to reduce adverse effects on the environment

Niche: a unique ecological role of an organism in a community

Pulpwood sticks: wood suitable for use in paper manufacturing, typically 4-10" DBH, usually cut into 8 foot sections

Saw logs: a log large enough to be cut into lumber, typically at least 10-12" DBH, usually cut into 8 or 16 foot sections

Silviculture: the art and science of controlling the establishment, composition and growth of vegetation in a forest

Threatened species: a species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range

Transition dune: also called the trough, a depression formed between the foredune and backdune by the action of wind, often fills with groundwater forming interdunal ponds



For Office Use Only:

District office:	
Application Rec'd:	
Site visit:	
VA Plan sent:	
Permit approved:	
Follow up:	

Application for Vegetation Assurance Plan for Designated Critical Dune Area

Project Location:

Address:	County:	Subdivision/Plot:	Lot Number:
Township:	Town/Range:	Section:	

Applicant Information:

Applicant or Agent:	Company Name:		
Mailing Address:			
City:	State:	Zip Code:	
Daytime Phone Number:	Fax Number:	E-mail Address:	

Property Owner (if different from Applicant)			
Mailing Address:			
City:	State:	Zip Code:	
Daytime Phone Number:	Fax Number:	E-mail Address:	

Contractor:	Address:		
City:	State:	Zip:	Phone:
Excavator:	Address:		
City:	State:	Zip:	Phone:

Project Description

<i>Please provide a brief description of proposed activities including impacts to vegetation:</i>	Estimated Project Time Frame
	Start Date:
	End Date:

Driving directions from District office:

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Assurance: (section to be completed by the Conservation District staff)

The Conservation District must have assurances that the cutting and removal of trees and other vegetation, as well as planting/stabilizing, will be performed according to District recommendations and site plan included with this application upon completion.

See attached for vegetation assurance plan.

Assurance Agreement: DO NOT SIGN PRIOR TO CONSERVATION DISTRICT SITE REVIEW

Your signature indicates that you have reviewed and understand the assurance guidelines provided and agree to follow the best management practices and any additional recommendations provided by the Conservation District.

Property Owner / Agent Signature:	Printed Name:
Title:	Date:

Conservation District:	
Conservation District Representative Signature:	Printed Name:
Title:	Date: