



Vegetation Removal Assurance in 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. As defined in part 353, "use" means "a developmental, silvicultural, or recreational activity done or caused to be done by a person that significantly alters the physical characteristic of a critical dune area or a contour change done or caused to be done by a person."

A Michigan Department of Environmental Quality permit is required for any use within a CDA. Regulated activities include construction of buildings, septic systems, water wells, driveways, all excavation and filling, and vegetation removal within the CDAs. These areas are identified in the "Atlas of Critical Dune Areas" dated February 1989, and adopted by the Michigan Legislature under Part 353. Section 35313(c) requires that all applications for permits for the use of a CDA include in writing: "assurances that the cutting and removing of trees and other vegetation will be performed according to the instructions or plans of the local soil conservation district. These instructions or plans may include all applicable silvicultural practices as described in the "voluntary forestry management guidelines for Michigan" prepared by the Society of American Foresters in 1987. The instructions or plans may include a program to provide mitigation for the removal of trees or vegetation by providing assurances that the applicant will plant on the site more trees and other vegetation than were removed by the proposed use."

As such, the Conservation District must be assured that the cutting and removing 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 the District. The Conservation District assigns a fee of not less than \$250.00 (two hundred and fifty dollars) for a site review of a CDA, including one follow-up visit at project completion. 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 the DEQ. Modifications that require an additional site visit and new report from the Conservation District will be assessed additional fees. Sites requiring reforestation of native trees and grasses, permit enforcement, and follow-up visits for a period of three years will be assessed additional fees based on a rate of \$50.00 (fifty dollars) per site visit.

Prior to site review the District office must receive:

- \$250 fee made payable to the **Muskegon Conservation District**
- Critical Dune Areas map identifying site
- Vicinity map and directions to site
- Copy of the Endangered Species Assessment preliminary letter that is immediately generated from the Michigan Department of Natural Resources website (available at <http://www.mcgi.state.mi.us/esa/>)
- 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.)

The District will schedule a site review within 5 business days of receiving your completed form, the previously described maps, site plan, and the full \$250 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 an Assurance, and if necessary, a site plan map with proposed revisions. All assurance materials will be mailed 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 the Michigan Department of Environmental Quality. Permits not having an assurance will be assumed to be in "non-compliance" and a letter stating such will be issued to the Michigan Department of Environmental Quality. A letter of non-compliance will also be issued should the property owner remove more trees and/or vegetation than agreed upon within the signed recommendation agreement.

***The property owner / agent must notify the Conservation District upon completion of the proposed construction activities.**

Muskegon Conservation District, 940 N. Van Eyck St., Muskegon, MI 49442; Phone: 231-773-0008

The Conservation District suggests the following general recommendations which the property owner / agent should take into account 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 for 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, delimits, 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 which 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 plugs:	1' X 1'
- Replacement of a native tree species with the same native tree species (hemlock for hemlock)
- 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 sommunis*), 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: 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

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:	Muskegon
Application Rec'd:	
Site Visit:	
Mailed:	
Follow Up:	

Vegetation Removal Assurance in Designated Critical Dune Areas

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:

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 modifications listed below.

<input type="checkbox"/> Vegetation Removal Assurance Waiver	<input type="checkbox"/> Vegetation Removal Assurance with Recommendations
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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: Muskegon	
Conservation District Representative Signature:	Printed Name:
Title:	Date: