



## Great Lakes/Coastal: Alvar/rock

### Description

Alvar/rock Great Lakes features represent the various rocky shoreline areas along the Great Lakes. Alvar/rock includes a wide variety of distinct bedrock types including limestone, sandstone, basalt, volcanic conglomerate, and other igneous and metamorphic bedrock types. While all of the shoreline bedrock communities are considered rare in Michigan, alvar or limestone pavement lakeshores is an ecologically significant natural community that is considered globally rare. Alvar communities generally have a distinctive vegetative zonation from the non-vegetated wave-swept shoreline to the more densely vegetated herbaceous or shrubby areas inland that grade into the upland forest. Because of their stability and diversity of habitats, alvars generally possess very diverse plant communities.

### General Condition of Feature

Most of the alvar or bedrock lakeshore in the Northern Lower Peninsula is considered to be in fair or good condition (~80%) and about 10% is considered in excellent condition. Only about 10% is considered degraded or very degraded. Alvar or bedrock lakeshore contains several natural communities that are imperiled or critically imperiled in the State.

### Associated Natural Communities

Alvar [Alvar Grassland]	Limestone Bedrock Lakeshore [Alvar Pavement]
Limestone Bedrock Glade [Alvar Glade]	Sinkhole

### Associated Species of Greatest Conservation Need

#### *INSECTS*

red-legged spittlebug (*Prosapia ignipectus*)  
grizzled skipper (*Pyrgus wyandot*)

#### *INSECTS cont.*

tawny crescent (*Phyciodes batesii*)

### Associated Threats

#### *MODIFICATION OF NATURAL PROCESSES*

- Altered hydrologic regimes
- Climate change: Changes in climate may affect Great Lakes water levels.

#### *HABITAT CONVERSION*

- Industrial, residential, and recreational development: Housing developments threaten alvar.

#### *NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE*

- Non-consumptive recreation: ATV and ORV use can impact alvar.

#### *EDUCATION*

- Lack of scientific knowledge

### Conservation Actions Needed [Threats addressed]

#### *LAND & WATER PROTECTION*

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

#### *LAND, WATER & SPECIES MANAGEMENT*

- Manage to approximate natural disturbance regimes by restoring water flow patterns. [Altered hydrologic regimes]
- Where possible, motorized vehicle trails should be located a minimum of 100 feet (and preferably more than 500 feet) from rivers, streams, lakes and other wetlands except at designated crossings. [Non-consumptive recreation]
- Maintain, to the extent feasible, geologically unique areas and natural karst processes. [Industrial, residential, and recreational development; Non-consumptive recreation]
- Avoid modifying microclimate and microhabitat condition within caves, cliffs, talus slopes, and areas of exposed bedrock. [Industrial, residential, and recreational development; Non-consumptive recreation]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]

#### *LAW & POLICY*

- Work with municipalities to promote planning and zoning insuring adequate protection for alvar systems. [Industrial, residential, and recreational development]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

#### *RECREATION*

- Promote responsible ATV and ORV use. [Non-consumptive recreation]

**MICHIGAN'S WILDLIFE ACTION PLAN**  
**TERRESTRIAL SYSTEMS: NORTHERN LOWER PENINSULA**

Research and Survey Needs

- Identify and quantify sources of disturbance. How does recreational use impact alvar and coastal rock communities? What are the natural disturbance factors and what is their periodicity?
- Identify the characteristics of alvar systems that provide benefits to wildlife and which species may be affected by changes in these characteristics.
- Determine indicators of alvar/rock condition.

Monitoring

- Track alvar acreage and distribution across the landscape.
- Track damage and disturbance intensity and distribution.
- Track indicator species abundance and distribution. Associated plant species may provide the best indicators.