



Source: IFMAP Michigan Land Cover dataset. Upland shrub includes areas in excess of 60% non-water/shrub cover.

## Shrubland: Upland shrub

### Description

Upland shrub areas have relatively dry soils and are dominated by woody shrub vegetation. These areas are often spatially and temporally dynamic across the landscape since they are an intermediate successional stage between early successional herbaceous vegetation and forest.

### General Condition of Feature

Most of the upland shrub in the Western Upper Peninsula is considered to be in fair to good condition (~80%). Much of the remaining area is considered degraded (~20%) due to lack of fire, deer browse and invasive species.

### Associated Natural Communities

N/A – No defined natural communities

### Associated Species of Greatest Conservation Need

#### INSECTS

Henry's elfin (*Callophrys henrici*)  
hoary comma (*Polygonia gracilis*)  
Macoun's arctic (*Oeneis macounii*)

#### REPTILES

blue racer (*Coluber constrictor foxii*)  
western fox snake (*Elaphe vulpina*)  
Blanding's turtle (*Emydoidea blandingii*)  
wood turtle (*Glyptemys insculpta*)

#### BIRDS

Sharp-tailed Grouse (*Tympanuchus phasianellus*)  
Northern Bobwhite (*Colinus virginianus*)  
Cooper's Hawk (*Accipiter cooperii*)  
American Woodcock (*Scolopax minor*)  
Black-billed Cuckoo (*Coccyzus erythrophthalmus*)

#### BIRDS cont.

Long-eared Owl (*Asio otus*)  
Least Flycatcher (*Empidonax minimus*)  
Brown Thrasher (*Toxostoma rufum*)  
Eastern Towhee (*Pipilo erythrophthalmus*)  
Field Sparrow (*Spizella pusilla*)

#### MAMMALS

northern bat or northern myotis (*Myotis septentrionalis*)  
eastern pipistrelle (*Pipistrellus subflavus*)  
southern red-backed vole (*Clethrionomys gapperi*)  
southern bog lemming (*Synaptomys cooperi*)  
deer mouse (*Peromyscus maniculatus gracilis*)  
lynx (*Lynx canadensis*)

### Associated Threats

#### MODIFICATION OF NATURAL PROCESSES

- Altered fire regime: Lack of fire results in succession to forested landscape features.
- Fragmentation

#### HABITAT CONVERSION

- Industrial, residential and recreational development: Shrubby uplands are attractive to developers for conversion to other uses.
- Incompatible natural resource management: Management which does not include disturbance allows succession to forest feature types.

#### NON-CONSUMPTIVE BIOLOGICAL RESOURCE USE

- Non-consumptive recreation: Uncontrolled ATV and ORV use may degrade upland shrub areas.

#### BIOLOGICAL INTERACTIONS

- Invasive plants and animals: Invasive plant species such as glossy buckthorn (*Rhamnus frangula*) and tartarian honeysuckle (*Lonicera tatarica*) may impact species composition.
- Other biological interactions: White-tailed deer (*Odocoileus virginianus*) browse may prevent some systems from transitioning to shrubland from grassland. In other systems, white-tailed deer (*Odocoileus virginianus*) browse may prevent conversion from shrubland to forested cover.

#### EDUCATION

- Lack of scientific knowledge: Identification of the optimal amount of upland shrub and who will provide it are vital before designing a strategy to address deficits.

### Conservation Actions Needed [Threats addressed]

#### LAND, WATER, & SPECIES MANAGEMENT

- Manage to approximate natural disturbance regimes using prescribed fire. [Altered fire regime]
- Develop and implement plans for invasive species control and prevention. [Invasive plants and animals]
- Manage deer densities to allow for natural regeneration within shrublands. [Other biological interactions]
- Consider wildlife values, timber values, and natural landcover and conditions when selecting vegetative species composition as part of management of these areas [Incompatible natural resource management]

**MICHIGAN'S WILDLIFE ACTION PLAN**  
**TERRESTRIAL SYSTEMS: WESTERN UPPER PENINSULA**

*LAW & POLICY*

- Work with municipalities to promote planning and zoning insuring adequate protection for upland shrub. Develop ordinances to retain larger parcel sizes in shrublands. [Industrial, residential, and recreational development; Fragmentation]
- Ensure that local setback ordinances are enforced. [Fragmentation; Industrial, residential, and recreational development]
- Develop and enforce regulations to curtail recreational activities that cause significant damage. [Non-consumptive recreation]

*EDUCATION & AWARENESS*

- Educate private landowners on the value of lowland shrublands to wildlife. [Industrial, residential, and recreational development]

*RECREATION*

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

Research and Survey Needs

- Evaluate optimal deer densities to prevent the transition of shrubland to grassland or forest. Quantify optimal characteristics of upland shrublands in terms of amount and location.
- An inventory needs to be conducted to determine the location, condition, and classification of remnants and of the opportunities for restoration.
- Test the assumption that remnants are widely dispersed and becoming more fragmented resulting in a loss of species diversity.
- A better understanding is needed of the management needs and appropriate management techniques to maintain and improve upland shrub features.
- A better understanding is needed of the temporal distribution of fire and its influence.
- A better understanding is needed of the history of upland shrub sites. Many sites have been retained through cultural activities that foster maintenance of upland shrub features.
- Techniques need to be developed using remote sensing and physical inventorying to create digital data sources for use in research and planning.
- Determine the impacts of nutrient inflow on upland shrub systems. Many of these systems are adjacent to agricultural land and tend to accumulate nutrients.
- Identify sources of disturbance and their impacts.
- Determine the value of pasturing livestock for creating, maintaining, and degrading upland shrub sites. Pasturing may prevent succession to more forested feature types or it may prevent the establishment of shrubs in upland grasslands.
- Identify the characteristics of upland shrub systems that contribute to their value to wildlife and which species may be affected by changes in these characteristics.
- Identify invasive species that may degrade the value of upland shrub sites for wildlife. Develop techniques to control invasive species. Common invasive species include autumn olive (*Elaeagnus umbellata*) and glossy buckthorn (*Rhamnus frangula*).
- Determine whether restoration to pre-settlement or pre-logging feature types is feasible. Many of these sites may have consisted of upland shrub communities for 100 years or more and may no longer be suitable for some historic cover types.
- Determine whether regenerating northern forest carries similar value to wildlife as upland shrub. Are early successional stages a good surrogate for upland shrub communities?
- Determine whether site characteristics exist that favor the establishment and retention of upland shrub communities over forested or grassland communities.

Monitoring

- Identify and track the acreage and distribution of shrub communities in multiple successional stages.