# Natural Community Surveys of Potential Landscape Units

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Cover photo: High-quality mesic northern forest within the McCormick - Rocking Chair NMF Potential Landscape Unit (all photographs by Joshua G. Cohen).

**IX.1**

**Rock Lake NMF**

Conducted surveys with assistance from Otto Jacob during one of the days. Surveys focused on dry-mesic northern forest and granitic features within the forested matrix. Documented high-quality dry-mesic northern forest, granite bedrock glade, granite cliff, poor fen, northern wet meadow, and submergent marsh. The juxtaposition of high-quality bedrock features adjacent to high-quality wetlands was notable. In addition, the following natural communities were identified as inclusions or zones within these communities or were noted in passing during the course of surveys: rich conifer swamp, muskeg, and northern shrub thicket.

Granite cliff, Rock Lake NMF

Submergent marsh, Rock Lake NMF

**Groveland Minds**

Conducted surveys with Otto Jacob. Surveys focused on dry-mesic northern forest and granitic features within the forested matrix. Documented high-quality dry-mesic northern forest, granite cliff, and northern wet meadow. The juxtaposition of high-quality bedrock features adjacent to high-quality wetlands was notable. In addition, pockets of granite bedrock glade and northern hardwood swamp were identified as inclusions within the dry-mesic northern forest matrix communities.

Dry-mesic northern forest, Groveland Minds

Granite cliff, Groveland Minds

**Pemene Falls**

Conducted surveys with Bob Doepker, Craig Albright, Bill Rollo, Eric MacDonald, and Joseph Durbin. Surveys focused on areas of open aspen forest over shallow bedrock just north of Pemene Falls Potential Landscape Unit. Documented high-quality granite bedrock glade to north of current Pemene Falls Potential Landscape Unit.

Granite bedrock glade, north of Pemene Falls

**Menominee Bedrock**

Surveys focused on areas to west of initial Landscape Unit polygon recommended for inclusion by West U.P. Core Design team. Documented high-quality volcanic cliff (the bedrock in this area is metadiorite, which is intermediate between volcanics and granitics but more closely related to volcanics). In addition, patches of restorable oak-pine barrens occur above the cliffs and volcanic bedrock glade. Noted high-quality dry-mesic northern forest in passing associated with the previously documented high-quality volcanic bedrock glade. Confirmed that the volcanic bedrock glade is accurately classified as volcanic bedrock glade. Portions of the volcanic bedrock glade include areas of horizontal bedrock exposure along the shore of the Menominee River. This could potentially be classified as a new natural community type, volcanic bedrock rivershore.

Volcanic bedrock rivershore, Menominee Bedrock

Volcanic cliff, Menominee Bedrock

**IX.2**

**McCormick – Rocking Chair MNF**

Surveys focused on state lands within the Rocking Chair Lakes area. Documented high-quality dry-mesic northern forest and extensive areas of high-quality old-growth mesic northern forest with hemlock-dominated areas as well as sugar maple–dominated forest. The newly documented mesic northern forest can be added to the existing mesic northern forest element occurrence. The larger matrix of old-growth mesic northern forest contains high-quality inclusions of rich conifer swamp with old-growth cedar (including areas with 2-3 ft dbh trees) and hardwood-conifer swamp. High-quality northern shrub thicket was also documented along Mulligan Creek at the base of the granite cliff element occurrence.

Mesic northern forest, Rocking Chair Lakes

**Pesheke Highlands**

Surveys focused on dry-mesic northern forest and granitic features within the forested matrix. Documented high-quality dry-mesic northern forest, granite bedrock glade, granite cliff, and northern wet meadow. The juxtaposition of high-quality bedrock features adjacent to high-quality wetlands was notable. In addition, the following natural communities were identified as inclusions or zones within these communities or were noted in passing during the course of surveys: poor conifer swamp, dry northern forest, and northern shrub thicket.

Granite bedrock glade, Pesheke Highlands

Northern wet meadow, Pesheke Highlands

**IX.3 and IX.5**
**Sylvania**
Surveys focused on documenting high-quality wetlands within matrix of old-growth mesic northern forest. Documented extensive high-quality muskeg within unique landscape context of old-growth hemlock forest. Also documented pockets of high-quality poor conifer swamp. Documented additional acreage of high-quality mesic northern forest and dry-mesic northern forest to incorporate into existing element occurrences.

Muskeg, Sylvania

**Bond Falls Scenic Site**
Survey focused on volcanic bedrock community types. Small patches of volcanic cliff occur adjacent to the falls on either side of the river. In addition, several small patches of volcanic bedrock glade were documented along either side of the river.

Volcanic bedrock glade, Bond Falls

**Agate Falls Scenic Site**

Survey focused on sandstone bedrock community types. Small patches of sandstone cliff occur along the river south of the falls and also adjacent to the falls.

Sandstone cliff, Agate Falls

**IX.6**

**Point Abbaye**

Surveys focused on bedrock features along the Lake Superior shoreline and interior boreal forest. Documented high-quality sandstone bedrock lakeshore, sandstone lakeshore cliff, and sandstone cobble shore and inclusions of sand and gravel beach. Boreal forest also documented in near shore areas.

Sandstone lakeshore cliff and sandstone bedrock lakeshore, Pointe Abbaye

**IX.7**
**Keweenaw Point**

Conducted three days of surveys focused on extensive boreal forest and large peatland complexes. Documented extensive high-quality boreal forest that includes a large area that recently burned during a wildfire as well as numerous blocks of old-growth. Documented high-quality patterned fen, northern fen, poor conifer swamp, rich conifer swamp, and volcanic cobble shore. Muskeg was noted as an inclusion within the poor conifer swamp and high-quality northern shrub thicket and sand and gravel beach was noted in passing along the shoreline. A small area of volcanic bedrock glade was also documented and it may be incorporated into the existing element occurrence.

Patterned fen, Keweenaw Point

Poor conifer swamp, Keweenaw Point

Boreal forest, Keweenaw Point

Boreal forest, Keweenaw Point

**IX.8**

**Sleeping Misery Forest**

Conducted two days of surveys focused on mesic northern forest and primary shoreline communities. Documented two polygons of high-quality mesic northern forest as well as high-quality sandstone bedrock lakeshore, sandstone cobble shore, sandstone lakeshore cliff (inclusion), and sand and gravel beach. Additional inclusions within mesic northern forest include high-quality hardwood-conifer swamp and poor conifer swamp. Noted potential high-quality northern hardwood swamp in near shore areas. This constitutes a unique variant growing on shallow clay soils over sandstone bedrock in near shore areas. Much of the near shore forest has been harvested, including areas of old-growth hemlock forest.

Sand and gravel beach, Sleeping Misery

Mesic northern forest, Sleeping Misery

Sandstone bedrock lakeshore, Sleeping Misery

Sandstone cobble shore, Sleeping Misery

**IX.9**
**Black River Gorge**
Surveys focused on forest along Black River as well as primary communities along the Black River. Documented several large blocks of high-quality mesic northern forest on bluffs, ravines, and plateaus above the Black River. Documented high-quality sandstone cliff on either side of the Black River. Sandstone cliffs include areas with sandstone, conglomerate, and sandstone and conglomerate. Surveyed areas along the river that included horizontal bedrock exposure along the shore of the Black River. These areas could potentially be classified as a new natural community type, sandstone bedrock rivershore.


Mesic northern forest, Black River Gorge


Sandstone cliff, Black River Gorge

**VIII.1**
**Moss Lake Complex**
Brief survey focused on large peatland. Documented high-quality patterned fen. In passing, noted high-quality northern shrub thicket, northern wet meadow, dry-mesic northern forest, and dry northern forest. Unique pine forests with significant component of black spruce along low upland sand ridges.


Patterned fen, Moss Lake Complex

**Manistique River Floodplain**
Brief survey focused on large floodplain of Manistique River. Documented high-quality floodplain forest. Additional surveys with boat needed.


Floodplain forest, Manistique River Floodplain


Poor fen, Nahma

**Nahma**
Survey focused on open peatland and conifer swamp. Documented high-quality poor fen and rich conifer swamp with inclusions of dry-mesic northern forest. In passing, noted high-quality northern shrub thicket.

**Pine River Complex**
Survey focused on large peatland and adjacent dune ridges. Documented high-quality muskeg (slightly minerotrophic) that extends into adjacent VIII.2. Pine ridges have been harvested. Noted high-quality northern shrub thicket in passing.


Patterned fen, Pine River Complex VIII.1


Muskeg, Pine River Complex VIII.1 and VIII.2

**VIII.2**
**Pine River Complex**
Survey focused on large open peatland. Documented high-quality patterned fen, poor fen, northern shrub thicket, and muskeg (slightly minerotrophic) that extends into adjacent VIII.1.

**Two-Hearted Peatland**
Survey focused on open peatland and dune ridges. Documented extensive area of high-quality muskeg (could be incorporated into existing muskeg element occurrence to the south) and pockets of high-quality dry northern forest within the muskeg.


Muskeg, Two-Hearted Peatland


Muskeg, Tahquamenon Falls State Park

**Tahquamenon Falls State Park**
Brief survey to evaluate open peatland. Documented high-quality muskeg which could be incorporated into existing muskeg element occurrence to the west.

**Bill's Creek Forested Wetland – USFS Old Growth**
Conducted two days of surveys focused on expanding existing muskeg and dry northern forest element occurrences and documenting additional forested communities. Documented additional acreage of both muskeg and dry northern forest and documented high-quality dry-mesic northern forest, rich conifer swamp, and bog.


Dry-mesic northern forest, Bill's Creek Forested


Bog, Bill's Creek Forested Wetland

**VII.2**

**Hartwick Pines**

Surveys were conducted to re-evaluate the dry-mesic northern forest and dry northern forest as part of a contract with PRD. During the course of these surveys, high-quality northern shrub thicket and an additional high-quality dry-mesic northern forest were documented and high-quality poor conifer swamp was noted in passing.

Dry-mesic northern forest, Hartwick Pines

Northern shrub thicket, Hartwick Pines

**Frost Pockets Restoration Complex**

Survey to evaluate potential pine barrens and restoration efforts. Documented high-quality pine barrens.

Pine barrens, Frost Pockets Restoration Complex

Northern fen, Benzie Shoreline Complex

**VII.4**

**Benzie Shoreline Complex**

Focused surveys on wetlands within state forest land east of Little Platte Lake. Documented high-quality northern fen and rich conifer swamp (heavily influenced by beaver flooding).

**Sleeping Bear Complex**
Focused surveys on mesic northern forest on interior dunes. Documented high-quality mesic northern forest, additional open dunes that can be added to existing element occurrence, and noted high-quality sand and gravel beach in passing.


Mesic northern forest, Sleeping Bear Dunes


Northern fen, Skegemog NFW

**VII.5**
**Skegemog NFW**
Brief survey to evaluate conifer swamp and adjacent open wetlands along Skegemog Lake margin. Documented high-quality rich conifer swamp and small pockets of lake-margin northern fen.

**Cedar NFW**
Focused survey to evaluate conifer swamp and adjacent open peatland. Documented high-quality rich conifer swamp and high-quality northern fen.


Rich conifer swamp, Cedar NFW


Northern fen, Cedar NFW

**VII.6**

**Wilderness SP Complex**

Conducted surveys to evaluate classification of Great Lakes marsh element occurrence along Waugoshance Point and survey for interior open wetlands. Documented high-quality northern fen and northern shrub thicket. Also documented high-quality coastal fen, limestone cobble shore, and Great Lakes marsh within existing Great Lakes marsh element occurrence.

Coastal fen, Wilderness SP Complex

**Maple River**

Survey to evaluate wetlands associated with Bullhead Bay. Documented high-quality northern wet meadow with inclusions of high-quality northern shrub thicket.

Northern wet meadow, Maple River

**Thompson's Harbor Complex**

Surveys were conducted to re-evaluate the coastal fen, limestone bedrock glades (two separate element occurrences), limestone cobble shore, and rich conifer swamp as part of a contract with PRD. Documented high-quality northern fen and northern shrub thicket. Determined that portions of coastal fen should be re-classified as northern fen and emergent marsh. Great lakes marsh inclusion documented within coastal fen occurrence. Determined that portions of rich conifer swamp should be re-classified as northern shrub thicket. Documented limestone bedrock lakeshore inclusions within limestone cobble shore element occurrence.

Coastal fen, Thompson's Harbor Complex

Northern fen, Thompson's Harbor Complex

**VI.6**

**Tobico Marsh**

Surveys were conducted to re-evaluate the lakeplain oak openings, lakeplain wet prairie, and southern hardwood swamp element occurrences as part of a contract with PRD. During the course of these surveys, high-quality southern wet meadow and lakeplain wet-mesic prairie inclusions were noted. The Great Lakes marsh within the site is degraded.

Lakeplain oak openings, Tobico Marsh

Lakeplain wet-mesic prairie, Tobico Marsh