Land Type Associations of the Hiawatha National Forest

The Stonington till plain LTA in the Hiawatha National Forest along County Road 513. ©TNC

Introduction:

The National Hierarchical Framework of Ecological Units (ECOMAP 1993) (Cleland et al. 1997) is used throughout the USFS and many other federal and state agencies. Ecological land classifications are used to identify, describe, and map progressively smaller areas of land with increasingly uniform ecological features. The system uses associations of biotic and environmental factors, including climate, geology, topography, soils, hydrology, and vegetation. This type of mapping allows resource managers to consider ecological patterns for areas as large as North America or as small as a single timber stand and identify areas with similar management opportunities or constraints relative to that scale. There are eight levels of Ecological Classification System (ECS) units in the United States (http://www.dnr.state.mn.us/ecs/index.html). These include:

- **Domains** are broad climatic zones or groups (e.g., dry, humid, tropical).
- **Divisions** are regional climatic types, vegetational affinities (e.g., prairie or forest), and soil order
- **Provinces** are units of land defined using major climate zones, native vegetation, and biomes such as prairies, deciduous forests, or boreal forests.
- **Sections** are units within Provinces that are defined by origin of glacial deposits, regional elevation, distribution of plants, and regional climate.
- **Subsections** are units within Sections that are defined using glacial deposition processes, surface bedrock formations, local climate, topographic relief, and the distribution of plants, especially trees.
- **Land Type Associations** are units within Subsections that are defined using glacial landforms, bedrock types, topographic roughness, lake and stream distributions, wetland patterns, depth to ground water table, soil parent material, and pre-European settlement vegetation.
- **Land Types** are units within Land Type Associations that are defined using pre-European settlement vegetation, historic disturbance regime, associations of native plant communities wetland distribution, and soil types.
- **Land Type Phases** are units within Land Types that are defined using a native plant community class, soil type, and topography.

The level of **Land Type Associations** (LTA) is often used by public agencies as a way to define landscapes. At this level, the interrelationships of the defining features are emphasized, allowing resource managers to analyze and communicate across several disciplines such as soils, geology, and botanic features. The LTA is a common unit both for evaluating and applying results from research as well as summarizing landscape characteristic and assessing the condition of resources such as the cumulative effects of managing small tracts of land (Almendinger, Hanson, and Jordan, 2000).

Current Project:

This project updated both the GIS layers and written descriptions of the **LTA's** within the Hiawatha National Forest in the Upper Peninsula of Michigan. Any LTA that overlapped with Hiawatha National Forest ownership was included in this report; even those with very small representation within the Forest.

Other LTA Projects in the Area:
Other past LTA projects in the Upper Peninsula include: 1. Detailed LTA descriptions of the Two Hearted Watershed including rare plant information from MNFI in 1997; 2. Ecological characterization of 15 LTA's in the eastern UP in 1997; and 3. LTA descriptions of the western Upper Peninsula (UP) done by the North Central Experiment Station in 2000.

Methods:

GIS Analysis:
Data was collected from Hiawatha National Forest, NRCS Soil Data Mart, Michigan Geographic Data Library, NRCS Geospatial Data Gateway, LandFire National Data, USGS, and the Michigan DNR (Table 1). All data was projected in NAD 1983 UTM Zone 16. The original data from these sources can be found in the accompanying Final_LTA_Analysis geodatabase.

Intersects were executed between shapefiles of LTAs within the Hiawatha National Forest proclamation boundaries (target LTAs) and various shapefiles. Then new acreages were calculated through the "Calculate Geometry" option in the attribute table. "Field Calculator" was used to generate percentages. A raster was created of the target LTAs, then combines were executed between the target LTA raster and various other rasters. Tables were joined to the new combined rasters to have access to additional (more descriptive) attributes. Percents were computed based on raster counts, and then acres were computed based on the percents. All analyses were performed in ESRI's ArcGIS 9.3 or 10.

Upon completion of the first round of analyses, it was discovered that there were some discrepancies with multipart polygon LTAs. To correct these, the original LTA layer was checked against multiple other LTA layers provided by Hiawatha National Forest. The corrected LTA layer is available in the Final_LTA_Analysis geodatabase.

All attribute tables were exported into excel, where pivot tables were used to summarize each category with acres and percents. Data from each excel table was then transferred to a standardized LTA datasheet with a brief description, acres, geology, landforms, soil complexes, vegetative communities, hydrography, local climate, LandFire, special area status, and other spatial and ownership summaries (Table 1).

LTA Datasheet:
All percentages listed on the datasheet are being reported from the pivot tables created from the attribute tables of GIS analysis.

The brief description section consists of the most dominant landforms along with the particle size class for the most dominant soils. Then a brief statement about what the most current vegetation consists of, from the 2001 IFMAP section.

Ecological landtypes can be found in Appendix A. This category uses only the top ten of both the Ecological Land Type groups (ELT) and Ecological Land Type Phases (ELTP) for each LTA. ELTs and ELTPs are Hiawatha National Forest mapping units, representing only those portions of the LTA that fall within the HNF proclamation boundary (i.e. If only 20% of an LTA is within the HNF, only 20% of the LTA will be accounted for in the ELT and ELTP pivot tables).

The dominant landform patterns were calculated through the GIS Analysis, and the descriptions for each were found in Landforms of the Upper Peninsula, Michigan (Jerome 2006).

In the LandFire section, the "Dominant Natural Disturbance Mechanism" was found in the LandFire database, and was correlated with the most dominant LandFire Biophysical Settings (BpS) listed under "Vegetative Communities" for each LTA. If no boxes were checked for "Non-Fire Disturbances", then fire was listed as the "Dominant Natural Disturbance Mechanism". Only the top three percentages were listed for the MFRI, Dep. and FRG sections.

Field Verification:
Twenty LTAs were visited in the field, including the seven LTAs with multipart polygons discrepancies identified in the GIS analysis. LTA datasheets were printed and taken into the field to verify that:

1) There was a noticeable distinction between LTAs at the boundaries
2) Dominant landforms were accurate
3) Dominant vegetative communities were accurate
4) Discrepancies with multipart polygon LTAs were corrected

We found that the LTA boundaries were distinct by vegetation and landforms alone. Often there was a topography or vegetation change at each boundary. The vegetation and landforms were accurate. The seven corrected multipart LTAs were much better suited with their corrected names and updated datasheets.

Table 1. Original data description and sources that was used in the GIS analysis.

Description	File Type	Source	Results in LTA datasheet:
LTA Boundaries	Polygon	Hiawatha National Forest	LTA Name, LTA #, Acres, Map
Ecological Landtype	Polygon	Hiawatha National Forest	Appendix A
Ecological Landtype Phases	Polygon	Hiawatha National Forest	Appendix A
Surficial Geology	Polygon	Hiawatha National Forest	Geology
Bedrock Geology	Polygon	Hiawatha National Forest	Geology
Landforms	Polygon	Hiawatha National Forest	Landforms
Hiawatha National Forest Proclamation Boundary	Polygon	Hiawatha National Forest	Other
Wild and Scenic Rivers	Polyline	Hiawatha National Forest	Special Area Status
General Soils Map	Polygon	NRCS Soil Data Mart	Soil Complexes
Land Cover circa 1800	Polygon	MI Geographic Data Library	Vegetative Communities
Upper Peninsula Land Cover 2001	Raster	MI Geographic Data Library	Vegetative Communities
MI Geographic Framework - Hydrography	Polygon	MI Geographic Data Library	Hydrography
National Wetlands Inventory	Polygon	MI Geographic Data Library	Hydrography
Annual Average Precipitation	Polygon	NRCS Geospatial Data Gateway	Local Climate
Annual Average Temperature	Polygon	NRCS Geospatial Data Gateway	Local Climate
Annual Maximum Temperature	Polygon	NRCS Geospatial Data Gateway	Local Climate
Annual Minimum Temperature	Polygon	NRCS Geospatial Data Gateway	Local Climate
Subwatershed Boundary Dataset	Polygon	NRCS Geospatial Data Gateway	Hydrography
Biophysical Settings (BpS)	Raster	LandFire National Data	Vegetative Communities
Mean Fire Return Interval (MFRI)	Raster	LandFire National Data	LandFire
Fire Regime Condition Class Departure Index (FRCC)	Raster	LandFire National Data	LandFire
Fire Regime Groups (FRG)	Raster	LandFire National Data	LandFire
Average Seasonal snowfall inches (1950 & 51/ 1979 & 80) - digitized using ArcScan	Polygon	Hiawatha National Forest	Local Climate
GAP Land Stewardship	Polygon	MI Geographic Data Library	Other
National Hydrography Dataset (NHD)	Polyline	USGS	Hydrography

LTA #: 212Sc14

LTA NAME: Au Train Bedrock-Controlled Moraines

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of coarse-loamy soils. Northern hardwood forests dominant.

ACRES: 11,447 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Medium-textured glacial till (65%); peat and muck (19%)
Bedrock: Munising Formation (73%); Jacobsville Sandstone (27%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (92%)
Landforms: Rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Onota-Munising-Deerton (69%); Markey-Dawson-Carbondale (19%)
Surface Texture: Sandy loam (71%); peat (19%)
Particle Size Class: Coarse-loamy (69%); sandy or sandy-skeletal (27%)
Drainage Class: Moderately well drained (69%); very poorly drained (27%)
Infiltration Rate: Moderate (69%); high/very slow (27%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (73%); Mixed Conifer Swamp (18%)
2001 Dominant (IFMAP): Northern Hardwood Association (60%); Lowland Coniferous Forest (11%); Aspen Association (9%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (60%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (13%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (12%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)
Wetlands (NWI): 18%
Dominant Classes: Forested (17%); scrub-shrub (2%)
Rivers and streams (total mileage): 10.7 mi.
Dominant: Hanson Creek (2.9 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Gongeau Creek-Frontal Lake Superior	40202010201	9,103	80
Au Train River	40202010112	2,027	18

LOCAL CLIMATE:

Avg. Temperature: 41°F (76%); 43°F (24%); range (7° - 77°F)
Annual Precipitation: 35 in. (50%); 33 in. (50%)
Average Seasonal Snowfall Depth: 150 in. (100%)
Average Frost-Free Days: 115 (71%); 100 (19%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (53%)
501-1000 yrs. (16%)
301-500 yrs. (8%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (5%)
Class II – Medium Departure (34%)
Class III – High Departure (60%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (83%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (15%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 21%
Private/Other Land: 79%

LTA #: 212Sc10

LTA NAME: Au Train Lake/ Christmas/Shot Point/Munising

BRIEF DESCRIPTION: Beach ridges and dunes of sandy soils. Lowland coniferous and pine forests dominant.

ACRES: 26,890 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (54%); glacial outwash sand and gravel (19%); thin to discontinuous glacial till over bedrock (9%)

Bedrock: Jacobsville Sandstone (90%)

LANDFORMS:

Dominant Landform Pattern(s): Beach ridges and dunes (39%); till-floored lake plain (27%); bedrock-controlled ground moraine (15%)

Landforms: Ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits; reworked sand, silt and till deposits; rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Kalkaska (19%); Wallace-Shelldrake-Roscommon (16%); Onota-Munising-Deerton (14%); Tawas-Lupton-Carbondale-Au Gres (13%); Tawas-Kalkaska-Carbondale (12%); Karlin-Kalkaska-Blue Lake (11%)

Surface Texture: Sand (47%); sandy loam (28%); muck (25%)

Particle Size Class: Sandy (41%); undefined (29%); coarse-loamy (17%)

Drainage Class: Somewhat excessively drained (29%); excessively drained (28%); very poorly drained (25%)

Infiltration Rate: High (57%); high/very slow (25%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (25%); Hemlock-White Pine Forest (20%); Jack Pine-Red Pine Forest (13%); White Pine-Red Pine Forest (10%); Beech-Sugar Maple-Hemlock Forest (8%); Sugar Maple-Hemlock Forest (7%)

2001 Dominant (IFMAP): Lowland Coniferous Forest (19%); Pines (11%); Upland Mixed Forest (10%); Herbaceous Openland (8%); Northern Hardwood Association (8%); Water (7%); Lowland Deciduous Forest (7%); Roads/Paved (6%); Other Upland Conifers (5%)

Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (25%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (23%); Open Water (10%); Laurentian-Acadian Northern Hardwoods Forest (9%); Great Lakes Pine Barrens (9%); Boreal Acid Peatland Systems (8%)

HYDROGRAPHY:

Lakes: 6% (LTA in open water)

Wetlands (NWI): 30%

Dominant Classes: Forested (24%); scrub-shrub (5%)

Rivers and streams (total mileage): 75.4 mi.

Dominant: Au Train River (10.6 mi.); Chocolay River (7.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Chocolay River	40202010104	5,549	21
Deer Lake-Frontal Lake Superior	40202010113	5,200	19
Au Train River	40202010112	3,535	13
Gongeau Creek-Frontal Lake Superior	40202010201	3,503	13
Levasseur Creek-Chocolay River	40202010102	3,164	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (56%); 43°F (41%); range (7° - 77°F)

Annual Precipitation: 31 in. (62%); 33 in. (19%)

Average Seasonal Snowfall Depth: 130 in. (59%); 150 in. (38%)

Average Frost-Free Days: 110 (30%); 140 (16%); 115 (14%); 125 (14%); 100 (13%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

501-1000 yrs. (14%)

>1000 yrs. (14%)

301-500 YRS. (12%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (9%)

Class II – Medium Departure (58%)

Class III – High Departure (9%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (45%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (30%)

FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (9%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 34%

LTA Ownership:

State Land: 13%

Federal Land: 10%

Private/Other Land: 77%

LTA #: 212Rb01

LTA NAME: Beaton Lake Outwash

BRIEF DESCRIPTION: Outwash plains and moraines of sandy soils. Pine and Aspen forests dominant.

ACRES: 6,874 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (94%)
Bedrock: Utica Shale Member (45%); Trenton Group (37%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (57%); disintegration moraine (34%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers; randomly oriented chaotic mounds and pits

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (90%)
Surface Texture: Sand (98%)
Particle Size Class: Sandy (98%)
Drainage Class: Excessively drained (90%)
Infiltration Rate: High (98%)

VEGETATIVE COMMUNITIES:

1800 Dominant: White Pine-Red Pine Forest (34%); Hemlock-White Pine Forest (24%); Beech-Sugar Maple-Hemlock Forest (21%); Mixed Conifer Swamp (8%)
2001 Dominant (IFMAP): Pines (22%); Aspen Association (18%); Northern Hardwood Association (14%); Lowland Coniferous Forest (13%); Herbaceous Openland (11%)
Landfire BPS: Great Lakes Pine Barrens (30%); Laurentian-Acadian Northern Pine(-Oak) Forest (13%); Boreal Acid Peatland Systems (11%); Laurentian Pine-Oak Barrens (11%); Laurentian-Acadian Northern Hardwoods Forest (10%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (7%)

HYDROGRAPHY:

Lakes: 5% (LTA in open water)
Wetlands (NWI): 16%
Dominant Classes: Forested (11%); scrub-shrub (3%)
Rivers and streams (total mileage): 9.8 mi.
Dominant: Indian River (6.7 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Little Murphy Creek-Indian River	40601060504	3,724	54
Delias Run-Indian River	40601060503	1,430	21
Dead Creek	40601060507	1,406	20

LOCAL CLIMATE:

Avg. Temperature: 43°F (60%); 41°F (40%); range (5° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (67%); 90 in. (33%)
Average Frost-Free Days: 110 (98%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Fire
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (34%)
16-20 yrs. (15%)
11-15 yrs. (13%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (31%)
Class III – High Departure (60%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (60%)
FRG V (>200 Year Fire Return Interval, Any Severity) (17%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (11%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Indian River
Recreational: 7.2 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 94%
Private/Other Land: 6%

LTA #: 212Rb27

LTA NAME: Betchler Marsh

BRIEF DESCRIPTION: Lowland outwash plains of sandy or sandy-skeletal soils. Lowland shrubs and mixed non-forest wetlands dominant.

ACRES: 6,716 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (62%); peat and muck (36%)
Bedrock: Utica Shale Member (42%); Stonington Formation (40%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (57%); outwash plain (43%)
Landforms: Outwash deposits found over old lake plains; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (97%)
Surface Texture: Peat (97%)
Particle Size Class: Sandy or sandy-skeletal (97%)
Drainage Class: Very poorly drained (97%)
Infiltration Rate: High/very slow (97%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (77%); Jack Pine-Red Pine Forest (16%)
2001 Dominant (IFMAP): Lowland Shrub (44%); Mixed Non-Forest Wetland (25%); Lowland Coniferous Forest (18%)
Landfire BPS: Boreal Acid Peatland Systems (84%)

HYDROGRAPHY:

Lakes: 1.7% (LTA in open water)
Wetlands (NWI): 49%
Dominant Classes: Scrub-shrub (27%); forested (20%)
Rivers and streams (total mileage): 0.3 mi.
Dominant: Pine River (0.1 mi.)
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Lumpson Creek-Pine River	40700020201	6,384	95

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (100%)
Average Frost-Free Days: 100 (97%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
61-70 yrs. (31%)
51-60 yrs. (16%)
71-80 yrs. (11%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (90%)
Class III – High Departure (8%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (83%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (11%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 99%
Private/Other Land: 1%

LTA #: 212Sc08

LTA NAME: Big Hole Moraines

BRIEF DESCRIPTION: Dissected moraines and till-floored lake plains of coarse-loamy soils. Northern hardwood forests dominant.

ACRES: 47,350 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: End moraines of coarse-textured till (75%); glacial outwash sand and gravel (10%)
Bedrock: Jacobsville Sandstone (63%); Granitic & Gneissic (16%); Munising Formation (14%)

LANDFORMS:

Dominant Landform Pattern(s): Dissected moraine (53%); till-floored lake plain (34%)
Landforms: Broad lake-modified till plain dissected by numerous parallel drainages; reworked sand, silt and till deposits

SOIL COMPLEXES:

Map Units: Munising-Liminga-Alcona (77%); Rubicon-Grayling (9%)
Surface Texture: Loamy fine sand (77%); sand (14%)
Particle Size Class: Coarse-loamy (83%)
Drainage Class: Well drained (80%)
Infiltration Rate: Moderate (85%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Sugar Maple-Hemlock Forest (76%); Hemlock-White Pine Forest (7%)
2001 Dominant (IFMAP): Northern Hardwood Association (56%); Upland Mixed Forest (11%); Aspen Association (7%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest – Hemlock (71%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (10%)

HYDROGRAPHY:

Lakes: 0.6% (LTA in open water)
Wetlands (NWI): 9%
Dominant Classes: Forested (8%); scrub-shrub (1%)
Rivers and streams (total mileage): 78.7 mi.
Dominant: Big Creek (7.9 mi.); East Branch Chocolay River (7.6 mi.); Silver Lead Creek (6.3 mi.); Foster Creek (6.2 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Nelson Creek-Chocolay River	40202010101	20,290	43
Big Creek	40202010103	10,157	21
Levasseur Creek-Chocolay River	40202010102	8,010	17
Chocolay River	40202010104	5,594	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (98%); range (5° - 79°F)
Annual Precipitation: 33 in. (64%); 31 in. (36%)
Average Seasonal Snowfall Depth: 130 in. (72%); 110 in. (28%)
Average Frost-Free Days: 115 (77%); 110 (15%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (68%)
501-1000 yrs. (9%)
301-500 yrs. (5%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (72%)
Class II – Medium Departure (21%)
Class III – High Departure (4%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (84%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (9%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 5%
LTA Ownership:
State Land: 9%
Federal Land: 2%
Private/Other Land: 89%

LTA #: 212Rb20

LTA NAME: Boot Lake Plain

BRIEF DESCRIPTION: Outwash and perched outwash plains of sandy soils. Northern hardwood forests dominant.

ACRES: 11,343 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (84%)
Bedrock: Trenton Group (71%); Black River Group (29%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (44%); perched outwash plain (36%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers; outwash plains which stand several meters or more above the surrounding lowlands

SOIL COMPLEXES:

Map Units: Kalkaska (85%)
Surface Texture: Sand (86%)
Particle Size Class: Sandy (86%)
Drainage Class: Somewhat excessively drained (85%)
Infiltration Rate: High (86%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (45%); Hemlock-White Pine Forest (27%); Hemlock-Yellow Birch Forest (9%)
2001 Dominant (IFMAP): Northern Hardwood Association (44%); Pines (23%); Aspen Association (9%); Lowland Shrub (8%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (38%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (30%); Boreal Acid Peatland Systems (11%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (6%)

HYDROGRAPHY:

Lakes: 6% (LTA in open water)
Wetlands (NWI): 14%
    Dominant Classes: Forested (11%); scrub-shrub (3%)
Rivers and streams (total mileage): 5.2 mi.
    Dominant: South Branch Stutts Creek (2.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
North Branch Stutts Creek	40601060403	5,306	47
Middle Branch Stutts Creek	40601060402	3,313	29
South Branch Stutts Creek	40601060404	1,854	16

LOCAL CLIMATE:

Avg. Temperature: 41°F (99%); range (5° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 130 in. (54%); 110 in. (36%)
Average Frost-Free Days: 110 (86%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (29%)
101-125 yrs. (11%)
501-1000 yrs. (11%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (53%)
Class III – High Departure (40%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (47%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (43%)
Indeterminate Fire Regime Characteristics (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 89%
Private/Other Land: 11%

LTA #: 212Re09

LTA NAME: Brevoort-Pte. Au Chenes

BRIEF DESCRIPTION: Beach ridges and dunes. Lowland coniferous and pine forests dominant.

ACRES: 15,301 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (71%); thin to discontinuous glacial till over bedrock (21%)
Bedrock: Point Aux Chenes Shale (97%)

LANDFORMS:

Dominant Landform Pattern(s): Beach ridges and dunes (77%); outwash plain (lowlands) (15%)
Landforms: Ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits; outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Roscommon-Eastport (48%); Wallace-Roscommon-Finch (38%)
Surface Texture: Sand (86%)
Particle Size Class: Undefined (97%); sandy over loamy (2%)
Drainage Class: Excessively drained (48%); poorly drained (40%)
Infiltration Rate: High/very slow (50%); high (48%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Cedar Swamp (26%); Hemlock-White Pine Forest (25%); Mixed Conifer Swamp (19%); Shrub Swamp/Emergent Marsh (8%); Beech-Sugar Maple-Hemlock Forest (8%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (28%); Pines (23%); Mixed Non-Forest Wetland (11%); Lowland Shrub (10%); Aspen Association (5%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (54%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (22%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (10%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)
Wetlands (NWI): 48%
Dominant Classes: Forested (30%); scrub-shrub (10%)
Rivers and streams (total mileage): 26.6 mi.
Dominant: Brevoort River (8.6 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Bervoort River	40601070104	4,368	29
Point Aux Chenes River	40601070102	3,686	24
Cut River-Frontal Lake Michigan	40601070101	3,626	24
Rabbit Back Creek-Frontal Lake Huron	40700020307	3,545	23

LOCAL CLIMATE:

Avg. Temperature: 43°F (85%); range (9° - 77°F)
Annual Precipitation: 29 in. (91%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 100 (50%); 140 (48%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (31%)
301-500 yrs. (16%)
>1000 yrs. (15%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (93%)
Class III – High Departure (1%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (68%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (26%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 95%
LTA Ownership:
State Land: 3%
Federal Land: 86%
Private/Other Land: 11%

LTA #: 212Re16

LTA NAME: Caffey Wetlands

BRIEF DESCRIPTION: Lowland outwash plains. Lowland coniferous forests and non-forested wetlands dominant.

ACRES: 21,620 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Peat and muck (71%); lacustrine sand and gravel (17%)
Bedrock: Manistique Group (58%); Burnt Bluff Group (25%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (92%)
Landforms: Outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Tawas-Lupton-Carbondale-Au Gres (89%)
Surface Texture: Muck (94%)
Particle Size Class: Undefined (93%); sandy (7%)
Drainage Class: Very poorly drained (89%)
Infiltration Rate: High/very slow (93%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (81%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (53%); Mixed Non-Forest Wetland (21%); Lowland Shrub (12%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (53%); Boreal Acid Peatland Systems (36%)

HYDROGRAPHY:

Lakes: 0.5% (LTA in open water)
Wetlands (NWI): 83%
Dominant Classes: Forested (60%); scrub-shrub (22%)
Rivers and streams (total mileage): 2.8 mi.
Dominant: West Branch Hendrie River (1.3 mi.)
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
South Branch Hendrie River	40202020302	6,182	29
West Branch Hendrie River	40202020303	5,688	26
South Branch Carp River	40700020102	4,464	21

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 33 in. (98%)
Average Seasonal Snowfall Depth: 90 in. (97%)
Average Frost-Free Days: 100 (93%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (21%)
>1000 yrs. (20%)
61-70 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (2%)
Class II – Medium Departure (92%)
Class III – High Departure (5%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (56%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (35%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (9%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 11%
LTA Ownership:
State Land: 93%
Federal Land: 3%
Private/Other Land: 4%

LTA #: 212Rb19

LTA NAME: Camp Eleven Ridge-Swale

BRIEF DESCRIPTION: Dune-capped lake plains of sandy or sandy-skeletal soils. Lowland coniferous and pine forests dominant.

ACRES: 37,850 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (79%); glacial outwash sand and gravel (20%)
Bedrock: Manitoulin Dolomite (62%); Cabot Head Shale (17%); Queenston Shale (17%)

LANDFORMS:

Dominant Landform Pattern(s): Dune-capped lake plain (51%); outwash plain (38%)
Landforms: Sandy lake-bed deposits interspersed with wind-worked sand bars or dunes; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (74%); Kalkaska (20%)
Surface Texture: Peat (74%); sand (25%)
Particle Size Class: Sandy or sandy-skeletal (74%); sandy (25%)
Drainage Class: Very poorly drained (74%); somewhat excessively drained (21%)
Infiltration Rate: High/very slow (74%); high (25%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (36%); Muskeg/Bog (22%); Hemlock-White Pine Forest (16%); Spruce-Fir-Cedar Forest (8%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (29%); Pines (24%); Lowland Shrub (14%); Mixed Non-Forest Wetland (11%); Aspen Association (8%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (37%); Boreal Acid Peatland Systems (21%); Boreal White Spruce-Fir-Hardwood Forest – Inland (13%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)
Wetlands (NWI): 60%
Dominant Classes: Forested (48%); scrub-shrub (12%)
Rivers and streams (total mileage): 48.2 mi.
Dominant: Fishdam River (8.8 mi.); Indian River (7.3 mi.); Iron Creek (6.7 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Iron Creek-Indian River	40601060506	14,946	39
Archambeau Creek-Fishdam River	40301120107	11,195	30
Fishdam River	40301120108	5,385	14
Big Murphy Creek	40601060505	4,699	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 33 in. (58%); 31 in. (42%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 100 (74%); 110 (25%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (15%)
301-500 yrs. (13%)
201-300 yrs. (9%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (83%)
Class III – High Departure (14%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (45%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (39%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (11%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Indian River
Recreational: 13.6 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 97%
LTA Ownership:
State Land: 4%
Federal Land: 93%
Private/Other Land: 3%

LTA #: 212Re23

LTA NAME: Carp/Ozark Creek Wetlands

BRIEF DESCRIPTION: Outwash plains of sandy soils. Pine and lowland coniferous forests dominant.

ACRES: 19,011 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (86%)

Bedrock: Engadine Group (55%); Burnt Bluff Group (19%); Manistique Group (13%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (77%); outwash plain (17%)

Landforms: Outwash deposits found over old lake plains; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (40%); Wallace-Roscommon-Finch (23%); Rubicon-Croswell-Au Gres (16%); Markey-Dawson-Carbondale (13%)

Surface Texture: Sand (80%)

Particle Size Class: Sandy (58%); undefined (29%)

Drainage Class: Excessively drained (56%); poorly drained (23%); very poorly drained (19%)

Infiltration Rate: High (58%); high/very slow (42%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Hemlock-White Pine Forest (34%); Mixed Conifer Swamp (31%); Beech-Sugar Maple-Hemlock Forest (14%); Cedar Swamp (8%)

2001 Dominant (IFMAP): Pines (32%); Lowland Coniferous Forest (17%); Lowland Shrub (13%); Mixed Non-Forest Wetland (8%); Herbaceous Openland (7%); Aspen Association (6%)

Landfire BPS: Boreal Acid Peatland Systems (24%); Laurentian-Acadian Northern Hardwoods Forest (16%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (16%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (10%); Laurentian Pine-Oak Barrens (9%); Boreal White Spruce-Fir-Hardwood Forest – Inland (7%)

HYDROGRAPHY:

Lakes: 5% (LTA in open water)

Wetlands (NWI): 32%

Dominant Classes: Forested (24%); scrub-shrub (6%)

Rivers and streams (total mileage): 37.9 mi.

Dominant: Carp River (13.7 mi.); Ozark Creek (5.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Ozark Creek-Carp River	40700020101	10,621	56
Upper Farm Hill Creek-Carp River	40700020105	2,638	14
Bervoort River	40601070104	2,576	14
South Branch Carp River	40700020102	2,518	13

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 33 in. (54%); 31 in. (46%)
Average Seasonal Snowfall Depth: 90 in. (54%); 70 in. (46%)
Average Frost-Free Days: 110 (58%); 100 (42%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (11%)
101-125 yrs. (11%)
501-1000 yrs. (8%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (6%)
Class II – Medium Departure (58%)
Class III – High Departure (27%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (35%)
FRG V (>200 Year Fire Return Interval, Any Severity) (35%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (12%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Carp River
Scenic: 8.0 mi.
Study: 8.0 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 67%
LTA Ownership:
State Land: 43%
Federal Land: 42%
Private/Other Land: 15%

LTA #: 212Rd09

LTA NAME: Clay/Morainal Transition

BRIEF DESCRIPTION: Lake plain of widely varying soils. Pine and lowland coniferous forests dominant.

ACRES: 9,667 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine clay and silt (74%); lacustrine sand and gravel (24%)
Bedrock: Black River Group (54%); Trenton Group (46%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (100%)
Landforms: Nearly level plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (30%); Pickford-Gogomain-Biscuit (25%); Rubicon-Rousseau (24%); Rudyard-Pickford-Ontonagon (21%)
Surface Texture: Peat (30%); very fine sandy loam (25%); sand (24%); silty clay loam (21%)
Particle Size Class: Sandy or sandy-skeletal (30%); coarse-loamy over clayey (25%); sandy (24%); fine (21%)
Drainage Class: Poorly drained (46%); very poorly drained (30%); excessively drained (24%)
Infiltration Rate: High/very slow (30%); moderate/very slow (25%); high (24%); very slow (21%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (67%); Spruce-Fir-Cedar Forest (31%)
2001 Dominant (IFMAP): Pines (22%); Lowland Coniferous Forest (20%); Lowland Shrub (16%); Mixed Non-Forest Wetland (15%); Aspen Association (13%)
Landfire BPS: Boreal White Spruce-Fir-Hardwood Forest – Coastal (32%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (28%); Boreal Acid Peatland Systems (25%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)
Wetlands (NWI): 47%
Dominant Classes: Forested (24%); scrub-shrub (20%)
Rivers and streams (total mileage): 9.8 mi.
Dominant: Hutton Creek (3.1 mi.)
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
South Branch Waiska River	40202030202	8,020	83

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (100%)
Average Frost-Free Days: 100 (30%); 135 (25%); 110 (24%); 95 (21%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
301-500 yrs. (23%)
201-300 yrs. (22%)
501-1000 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (7%)
Class II – Medium Departure (58%)
Class III – High Departure (34%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (58%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (34%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (6%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 1%
LTA Ownership:
State Land: 67%
Federal Land: 1%
Private/Other Land: 32%

LTA #: 212Rc13

LTA NAME: Cooks Moraine

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of sandy soils. Northern hardwood forests dominant.

ACRES: 22,884 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: End moraines of medium-textured till (76%); lacustrine sand and gravel (14%)
Bedrock: Burnt Bluff Group (58%); Manistique Group (29%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (52%); outwash plain (31%)
Landforms: Rock outcrops and small outwash filled channels; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Karlin-Kalkaska-Blue Lake (44%); Trenary-Carbondale-Blue Lake (29%); Kalkaska (21%)
Surface Texture: Sandy loam (44%); fine sandy loam (29%); sand (27%)
Particle Size Class: Sandy (98%)
Drainage Class: Somewhat excessively drained (65%); well drained (29%)
Infiltration Rate: High (98%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (88%)
2001 Dominant (IFMAP): Northern Hardwood Association (40%); Forage Crops/Non-Tilled Herbaceous (18%); Aspen Association (11%); Herbaceous Openland (10%); Pines (7%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (63%); Boreal White Spruce-Fir-Hardwood Forest – Inland (15%); Laurentian-Acadian Northern Pine(-Oak) Forest (7%)

HYDROGRAPHY:

Lakes: 0% (LTA in open water)
Wetlands (NWI): 4%
Dominant Classes: Forested (4%)
Rivers and streams (total mileage): 1.5 mi.
Dominant: Spring Creek (1.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Fishdam River	40301120108	8,878	39
Indian Lake-Indian River	40601060509	6,739	29
Archambeau Creek-Fishdam River	40301120107	5,883	26

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 115 (44%); 120 (29%); 110 (27%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (56%)
501-1000 yrs. (12%)
301-500 yrs. (8%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (24%)
Class III – High Departure (52%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (83%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (15%)
Indeterminate Fire Regime Characteristics (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 95%
LTA Ownership:
State Land: 27%
Federal Land: 7%
Private/Other Land: 66%

LTA #: 212Rc14

LTA NAME: Cooks Outwash

BRIEF DESCRIPTION: Lake and outwash plains of sandy soils. Herbaceous openlands dominant.

ACRES: 19,625 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (96%)
Bedrock: Manistique Group (70%); Burnt Bluff Group (29%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (55%); outwash plain (39%)
Landforms: Nearly level plains; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (68%); Markey-Dawson-Carbondale (25%)
Surface Texture: Sand (72%); peat (25%)
Particle Size Class: Sandy (75%); sandy or sandy-skeletal (25%)
Drainage Class: Excessively drained (68%); very poorly drained (25%)
Infiltration Rate: High (75%); high/very slow (25%)

VEGETATIVE COMMUNITIES:

1800 Dominant: White Pine-Red Pine Forest (45%); Mixed Conifer Swamp (13%); Beech-Sugar Maple-Hemlock Forest (11%); Hemlock-White Pine Forest (11%)
2001 Dominant (IFMAP): Herbaceous Openland (23%); Aspen Association (18%); Pines (17%); Northern Hardwood Association (8%); Lowland Shrub (7%); Lowland Coniferous Forest (6%); Upland Mixed Forest (5%)
Landfire BPS: Laurentian-Acadian Northern Pine(-Oak) Forest (38%); Laurentian-Acadian Northern Hardwoods Forest (20%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (14%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (11%)

HYDROGRAPHY:

Lakes: 0.8% (LTA in open water)
Wetlands (NWI): 18%
    Dominant Classes: Forested (13%); scrub-shrub (3%)
Rivers and streams (total mileage): 3.5 mi.
    Dominant: Spring Creek (1.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Little Fishdam River	40301120106	6,737	34
Southtown Creek-Frontal Lake Michigan	40301120101	3,882	20
Indian Lake-Indian River	40601060509	3,341	17
Fishdam River	40301120108	3,210	16

LOCAL CLIMATE:

Avg. Temperature: 41°F (97%); range (9° - 77°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 110 (72%); 100 (25%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress; competition or lack of seed source
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (20%)
501-1000 yrs. (9%)
36-40 yrs. (8%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (39%)
Class III – High Departure (55%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (43%)
FRG V (>200 Year Fire Return Interval, Any Severity) (43%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (11%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

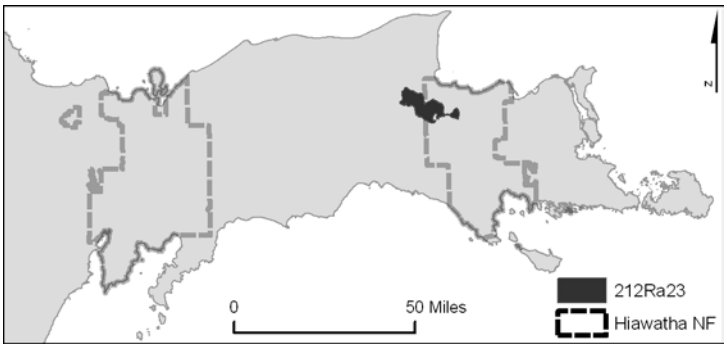
% LTA in HNF Proclamation Boundary: 51%
LTA Ownership:
State Land: 67%
Federal Land: 3%
Private/Other Land: 30%

LTA #: 212Ra23

LTA NAME: East Tahquamenon Drainage

BRIEF DESCRIPTION: Nearly level lake plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 38,946 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Peat and muck (68%); end moraines of coarse-textured till (13%)
Bedrock: Trenton Group (56%); Black River Group (27%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (81%)
Landforms: Nearly level plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (67%); Rubicon-Rousseau (16%)
Surface Texture: Peat (67%); sand (16%)
Particle Size Class: Sandy or sandy-skeletal (67%); sandy (27%)
Drainage Class: Very poorly drained (67%); excessively drained (16%)
Infiltration Rate: High/very slow (67%); high (27%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (74%); Cedar Swamp (11%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (44%); Lowland shrub (23%); Pines (12%); Mixed Non-Forest Wetland (10%)
Landfire BPS: Boreal Acid Peatland Systems (56%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (23%); Boreal White Spruce-Fir-Hardwood Forest-Coastal (9%)

HYDROGRAPHY:

Lakes: 0.1% (LTA in open water)
Wetlands (NWI): 68%
Dominant Classes: Forested (56%); scrub-shrub (10%)
Rivers and streams (total mileage): 52.6 mi.
Dominant: East Branch Tahquamenon River (18.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Riley Creek-East Branch Tahquamenon	40202020403	13,646	35
East Branch Tahquamenon River	40202020404	12,598	32
Grants Creek-East Branch Tahquamenon	40202020402	7,871	20

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)
Annual Precipitation: 33 in. (94%)
Average Seasonal Snowfall Depth: 110 in. (92%)
Average Frost-Free Days: 100 (67%); 110 (27%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
61-70 yrs. (21%)
51-60 yrs. (11%)
71-80 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (2%)
Class II – Medium Departure (84%)
Class III – High Departure (12%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (63%)
FRG V (>200 Year Fire Return Interval, Any Severity) (29%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (6%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
East Branch Tahquamenon River
Recreational: 5.7 mi.
Study: 13.7 mi.
Wild: 2.1 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 46%
LTA Ownership:
State Land: 10%
Federal Land: 36%
Private/Other Land: 54%

LTA #: 212Rc20

LTA NAME: Fishdam Embayment

BRIEF DESCRIPTION: Beach ridges and dunes transitioning to lake plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 11,522 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (96%)
Bedrock: Cabot Head Shale (78%); Manitoulin Dolomite (14%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (61%); beach ridges and dunes (26%)
Landforms: Nearly level plains; ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (84%)
Surface Texture: Peat (84%)
Particle Size Class: Sandy or sandy-skeletal (84%)
Drainage Class: Very poorly drained (84%)
Infiltration Rate: High/very slow (84%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (78%); Hemlock-White Pine Forest (11%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (43%); Lowland Shrub (23%); Pines (10%); Mixed Non-Forest Wetland (8%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (70%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (9%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (7%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)
Wetlands (NWI): 78%
Dominant Classes: Forested (67%); scrub-shrub (10%)
Rivers and streams (total mileage): 18.4 mi.
Dominant: Fishdam River (6.2 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Fishdam River	40301120108	6,612	57
Little Fishdam River	40301120106	3,913	34

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 100 (84%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (38%)
>1000 yrs. (32%)
301-500 yrs. (14%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (97%)
Class III – High Departure (2%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (87%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (13%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

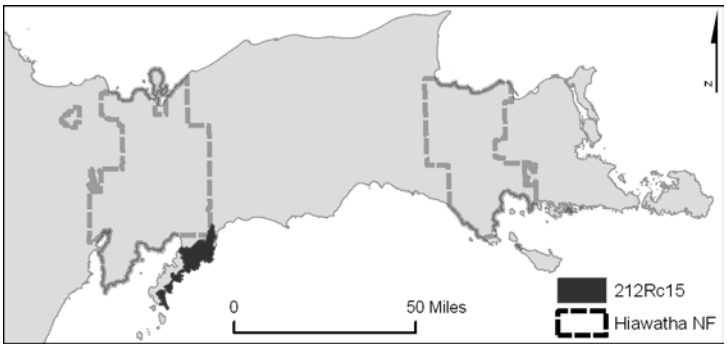
% LTA in HNF Proclamation Boundary: 83%
LTA Ownership:
State Land: 12%
Federal Land: 74%
Private/Other Land: 14%

LTA #: 212Rc15

LTA NAME: Garden Wetlands/Outcrop

BRIEF DESCRIPTION: Lake and outwash plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 50,378 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (73%); thin to discontinuous glacial till over bedrock (21%)
Bedrock: Manistique Group (81%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (41%); outwash plain (25%); bedrock-controlled ground moraine (25%)
Landforms: Nearly level plains; outwash deposits of sand and gravel in well-stratified layers; rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (38%); Summerville-Roscommon-Rock Outcrop (19%); Kalkaska (17%); Summerville-Kiva (9%)
Surface Texture: Peat (38%); sand (27%); fine sandy loam (19%)
Particle Size Class: Sandy or sandy-skeletal (38%); sandy (32%); loamy (19%)
Drainage Class: Very poorly drained (38%); well drained (27%); somewhat excessively drained (18%)
Infiltration Rate: High/very slow (38%); high (37%); very slow (19%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (32%); Beech-Sugar Maple-Hemlock Forest (25%); Spruce-Fir-Cedar Forest (24%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (21%); Pines (15%); Aspen Association (11%); Northern Hardwood Association (10%); Mixed Upland Conifers (10%); Lowland Shrub (8%); Herbaceous Openland (8%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (45%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (14%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (7%); Boreal Acid Peatland Systems (6%); Boreal White Spruce-Fir-Hardwood Forest – Inland (6%); Laurentian-Acadian Northern Hardwoods Forest (5%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)
Wetlands (NWI): 37%

Dominant Classes: Forested (29%); scrub-shrub (7%)

Rivers and streams (total mileage): 55.3 mi.

Dominant: Bursaw Creek (5.0 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Puffy Creek-Frontal Lake Michigan	40301120104	18,545	37
Valentine Creek-Frontal Big Bay De Noc	40301120105	11,726	23
Bursaw Creek	40301120103	9,328	19
Snyder Creek-Frontal Lake Michigan	40301120102	8,248	16

LOCAL CLIMATE:

Avg. Temperature: 43°F (76%); 41°F (24%); range (9° - 77°F)

Annual Precipitation: 31 in. (71%); 29 in. (28%)

Average Seasonal Snowfall Depth: 70 in. (100%)

Average Frost-Free Days: 100 (38%); 110 (23%); 130 (19%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

501-1000 yrs. (29%)

>1000 yrs. (19%)

301-500 yrs. (12%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (1%)

Class II – Medium Departure (77%)

Class III – High Departure (9%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (68%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (17%)

FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 1%

LTA Ownership:

State Land: 29%

Federal Land: 0%

Private/Other Land: 71%

LTA #: 212Te23

LTA NAME: Gladstone Lake Bluff

BRIEF DESCRIPTION: Lake plains of sandy soils. Aspen and northern hardwood forests dominant.

ACRES: 25,165 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (69%); medium-textured glacial till (19%)
Bedrock: Trenton Group (100%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (76%); ground moraine (13%)
Landforms: Nearly level plains; extensive fairly even layers of till

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (55%); Trenary-Onaway-Charlevoix (18%); Tawas-Kalkaska-Carbondale (16%)
Surface Texture: Sand (55%); sandy loam (18%); muck (16%)
Particle Size Class: Sandy (55%); sandy or sandy-skeletal (21%); coarse-loamy (18%)
Drainage Class: Excessively drained (55%); very poorly drained (27%)
Infiltration Rate: High (55%); moderate (24%); high/very slow (21%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Hemlock-White Pine Forest (60%); Mixed Conifer Swamp (15%); Pine Barrens (7%)
2001 Dominant (IFMAP): Aspen Association (20%); Northern Hardwood Association (14%); Lowland Deciduous Forest (12%); Lowland Coniferous Forest (12%); Upland Mixed Forest (9%); Pines (8%); Herbaceous Openland (6%)
Landfire BPS: Laurentian-Acadian Pine-Hemlock-Hardwood Forest (28%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (22%); Laurentian Pine-Oak Barrens (19%); Boreal Acid Peatland Systems (11%)

HYDROGRAPHY:

Lakes: 0.6% (LTA in open water)
Wetlands (NWI): 31%
Dominant Classes: Forested (22%); scrub-shrub (4%)
Rivers and streams (total mileage): 19.9 mi.
Dominant: Days River (9.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Days River	40301110207	9,898	39
Bichler Creek-Escanaba River	40301100308	7,747	31
Town of Rapid R.-Frntl Little Bay De Noc	40301110204	3,724	15

LOCAL CLIMATE:

Avg. Temperature: 43°F (62%); 41°F (38%); range (7° - 79°F)
Annual Precipitation: 29 in. (56%); 31 in. (41%)
Average Seasonal Snowfall Depth: 70 in. (53%); 50 in. (47%)
Average Frost-Free Days: 110 (55%); 105 (22%); 120 (18%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (13%)
0-5 yrs. (10%)
301-500 yrs. (9%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (3%)
Class II – Medium Departure (58%)
Class III – High Departure (24%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (35%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (34%)
FRG V (>200 Year Fire Return Interval, Any Severity) (26%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 45%
LTA Ownership:
State Land: 22%
Federal Land: 1%
Private/Other Land: 78%

LTA #: 212Sc06

LTA NAME: Grand, Au Train, Wood, and Williams Islands

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of coarse-loamy soils. Northern hardwood forests dominant.

ACRES: 13,888 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Coarse-textured glacial till (81%)
Bedrock: Munising Formation (73%); Jacobsville Sandstone (27%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (97%)
Landforms: Rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Onota-Munising-Deerton (84%)
Surface Texture: Sandy loam (84%)
Particle Size Class: Coarse-loamy (84%)
Drainage Class: Well drained (84%)
Infiltration Rate: Moderate (84%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (85%)
2001 Dominant (IFMAP): Northern Hardwood Association (77%); Lowland Deciduous Forest (6%)
Landfire BPS: *

HYDROGRAPHY:

Lakes: 2% (LTA in open water)
Wetlands (NWI): 9%
Dominant Classes: Forested (9%); scrub-shrub (<1%)
Rivers and streams (total mileage): 20.0 mi.
Dominant: Gull Point Creek (1.3 mi.)
Major Subwatersheds (≥10%): None

LOCAL CLIMATE:

Avg. Temperature: 41°F (71%); 43°F (28%); range (9° - 77°F)
Annual Precipitation: 33 in. (59%); 35 in. (40%)

Average Seasonal Snowfall Depth: 150 in. (100%)
Average Frost-Free Days: 125 (84%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: *
Mean Fire Return Interval (Fire-Free Period): *
FRCC Departure (aka Ecological Departure) ranges from 0-100, with lower numbers indicating lower ecological departure from reference condition: *
Fire Regime Group: *

ADDITIONAL COMMENTS:

Boat access only.

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 97%
LTA Ownership:
State Land: 0%
Federal Land: 97%
Private/Other Land: 3%

* Insufficient data exists for the geographical extent of LTA 212Sc06 to accurately represent LANDFIRE information.

LTA #: 212Rb17

LTA NAME: Haymeadow Buried Moraine

BRIEF DESCRIPTION: Outwash plains of sandy or sandy-skeletal soils. Northern hardwood forests dominant.

ACRES: 14,183 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (99%)
Bedrock: Utica Shale Member (45%); Trenton Group (45%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (50%); disintegration moraine (48%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers; randomly oriented chaotic mounds and pits

SOIL COMPLEXES:

Map Units: Kalkaska (53%); Tawas-Kalkaska-Carbondale (36%)
Surface Texture: Sand (57%); muck (36%)
Particle Size Class: Sandy (60%); sandy or sandy-skeletal (40%)
Drainage Class: Somewhat excessively drained (53%); very poorly drained (40%)
Infiltration Rate: High (60%); high/very slow (40%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Hemlock-White Pine Forest (27%); Sugar Maple-Hemlock Forest (26%); Beech-Sugar Maple-Hemlock Forest (24%); Mixed Conifer Swamp (17%)
2001 Dominant (IFMAP): Northern Hardwood Association (47%); Lowland Coniferous (13%); Aspen Association (11%); Upland Mixed Forest (10%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (29%); Laurentian-Acadian Northern Hardwoods Forest – Hemlock (18%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (17%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (13%); Boreal Acid Peatland Systems (12%)

HYDROGRAPHY:

Lakes: 0.8% (LTA in open water)
Wetlands (NWI): 23%
    Dominant Classes: Forested (20%); emergent (2%)
Rivers and streams (total mileage): 8.4 mi.
    Dominant: Haymeadow Creek (5.2 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
East Branch Whitefish River	40301110105	6,293	44
Haymeadow Creek	40301110106	5,618	40

LOCAL CLIMATE:

Avg. Temperature: 41°F (90%); range (5° - 79°F)
Annual Precipitation: 33 in. (99%)
Average Seasonal Snowfall Depth: 70 in. (54%); 90 in. (25%)
Average Frost-Free Days: 110 (57%); 105 (36%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (40%)
101-125 yrs. (10%)
501-1000 yrs. (8%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (66%)
Class III – High Departure (32%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (63%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (29%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (6%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 86%
Private/Other Land: 14%

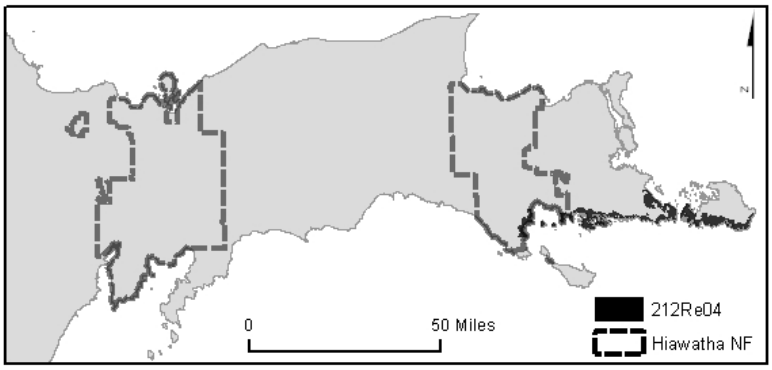
LTA #: 212Re04

LTA NAME: Huron Lake Beds

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of loamy-skeletal soils. Pine and lowland coniferous forests dominant.

ACRES: 73,372 acres

ECOLOGICAL LANDTYPES: See Appendix



GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (65%); Lacustrine sand and gravel (13%); Course textured glacial till (11%); peat and muck (8%)

Bedrock: Engadine Group (58%); Point Aux Chenes Shale (20%); Manistique Group (19%); Burnt Bluff Group (1%); Mackinac Breccia (1%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (80%); Beach ridges and dunes (6%)

Landforms: Rock outcrops and small outwash filled channels; Ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits

SOIL COMPLEXES:

Map Units: Summerville-Shelter-Posen (40%); Brevort (25%); Markey-Dawson-Carbondale (8%); Wallace-Roscommon-Finch (7%); Shelter-Potagannissing-Posen-Ensign (7%)

Surface Texture: Fine sandy loam (40%); loamy sand (25%); sand (10%); peat (8%); silt loam (7%)

Particle Size Class: Loamy-skeletal (40%); sandy over loamy (25%); undefined (11%)

Drainage Class: Well drained (40%); poorly drained (36%); very poorly drained (9%)

Infiltration Rate: Moderate (65%); high/very slow (16%); Very slow (11%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Spruce-Fir-Cedar Forest (53%); Mixed Conifer Swamp (13%); Aspen-Birch Forest (12%); Cedar swamp (9%)

2001 Dominant (IFMAP): Pines (28%); Lowland Coniferous Forest (16%); Water (18%); Mixed Non-forest Wetland (6%); Aspen Association (6%)

Landfire BPS: Boreal White Spruce-Fir-Hardwood Forests Coastal (51%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (31%); Boreal Acid Peatland Systems (6%); Open Water (3%); Boreal White Spruce-Fir-Hardwood Forests Inland (3%)

HYDROGRAPHY:

Lakes: 3% (LTA in open water)

Wetlands (NWI): 33%

Dominant Classes: Forested (27%); scrub-shrub (3%); emergent (3%)

Rivers and streams (total mileage): 144.7 mi.

Dominant: Carlton Creek (3.9 mi); Rabbit Back Creek (3.0 mi); Albany Creek (2.6 mi); Pearson Creek (2.2 mi); Beaver Tail Creek (2.1 mi)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Carlton Creek-Frontal Saint Marys River	40803000000	14017	19
Law Creek-Frontal Lake Huron	40803000000	9124	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (56%); 43°F (44%); range (7° - 77°F)

Annual Precipitation: 31 in. (42%); 29 in. (56%)

Average Seasonal Snowfall Depth: 70 in. (56%); undetermined (43%)

Average Frost-Free Days: 115 (40%); 105 (25%); 100 (16%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

301-500 yrs. (34%)

501-1000 yrs. (33%)

>1000 yrs. (10%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (3%)

Class II – Medium Departure (86%)

Class III – High Departure (1%)

Fire Regime Group:

FRG V (> 200 Year Fire Return Interval, Any Severity) (86%)

Water (8%)

Barren (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:

Carp River

Recreational: 0.1 mi

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 13%

LTA Ownership:

State Land: 22%

Federal Land: 11%

Private/Other Land: 67%

LTA #: 212Re05

LTA NAME: Huron Outcrop

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of sandy over loamy soils. Aspen and pine forests dominant.

ACRES: 4,121 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (88%)
Bedrock: Engadine Group (100%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (87%)
Landforms: Rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Brevort (48%); Summerville-Menominee-Longrie-Kalkaska-Emmet (35%)
Surface Texture: Loamy sand (48%); sandy loam (35%)
Particle Size Class: Sandy over loamy (48%); sandy (35%)
Drainage Class: Poorly drained (53%); well drained (35%)
Infiltration Rate: Moderate (48%); high (47%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (50%); Spruce-Fir-Cedar Forest (34%)
2001 Dominant (IFMAP): Aspen Association (40%); Pines (24%); Northern Hardwood Association (16%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (44%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (26%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (16%)

HYDROGRAPHY:

Lakes: 0.1% (LTA in open water)
Wetlands (NWI): 12%
Dominant Classes: Forested (11%); scrub-shrub (0.5%)
Rivers and streams (total mileage): 0 mi.
Dominant: N/A

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Law Creek-Frontal Lake Huron	40700020304	3,000	73
Nunns Creek	40700020305	726	18
Garden Hill Creek-Pine River	40700020211	394	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (95%); range (7° - 79°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 105 (48%); 110 (35%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (38%)
501-1000 yrs. (24%)
301-500 yrs. (20%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (13%)
Class II – Medium Departure (44%)
Class III – High Departure (44%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (96%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 53%
Private/Other Land: 47%

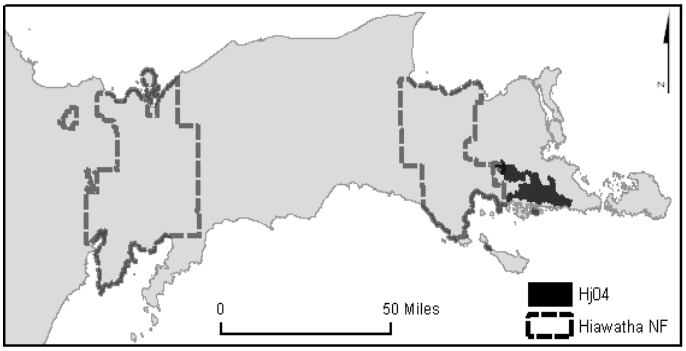
LTA #: Hj04

LTA NAME: Huron Patterned Outcrop

BRIEF DESCRIPTION: Bedrock controlled ground moraine with loamy-skeletal soils. Pine and lowland coniferous forest dominant.

ACRES: 61753 acres

ECOLOGICAL LANDTYPES: See Appendix



GEOLOGY:

Surficial: Thin to Discontinuous glacial till over bedrock (60%); Lacustrine clay and silt (13%); Coarse – textured glacial till (10%)

Bedrock: Engadine Group (64%); Manistique Group (17%); Burnt Bluff Group (12%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock controlled Ground Moraine (74%); Lake Plain (20%)

Landforms: Rock outcrops and small outwash filled channels; Nearly level plains

SOIL COMPLEXES:

Map Units: Summerville-Shelter-Posen (30%); Brevort (28%); Pickford-Ontonagon-Bergland (9%); Summerville-Menominee-Longrie-Kalkaska-Emmet (9%)

Surface Texture: Fine sandy loam (30%); Loamy sand (28%); Silty clay loam (15%); Muck (10%)

Particle Size Class: Loamy-Skeletal (30%); Sandy over loamy (28%); Fine (15%); Sandy (15%)

Drainage Class: Poorly drained (43%); Well drained (42%); Very Poorly drained (12%)

Infiltration Rate: Moderate (58%); Very slow (15%); High (15%); High/Very slow (12%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Spruce-fir-cedar forest (44%); Mixed Conifer swamp (37%)

2001 Dominant (IFMAP): Pines (22%); Lowland Coniferous Forest (19%); Aspen Association (15%); Lowland Shrub (9%)

Landfire BPS: Boreal White Spruce-Fir-Hardwood Coastal (44%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (31%); Boreal Acid Peatland Systems (9%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)

Wetlands (NWI): 36%

Dominant Classes: Forested (30%); Scrub-shrub (4%); Emergent (1%)

Rivers and streams (total mileage): 61.7 mi

Dominant: Munuscong River (6.8 mi); McKay Creek (5.2); Taylor Creek (5.2); Flowers Creek (5.0); Beaver Tail Creek (4.6); Rapson Creek (4.5)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
McKay Creek-Frontal Lake Huron	40700020303	15698	25
Beaver Tail Creek-Frontal Lake Huron	40700020302	10236	17
Hannah Creek-East Branch Munuscong	40700010205	8908	14
Taylor Creek	40700010203	7544	12

LOCAL CLIMATE:

Avg. Temperature: 41°F; range (5°F - 79°F)
Annual Precipitation: 31 in (76%); 33 in. (24%)
Average Seasonal Snowfall Depth: 70 in. (78%); 90 in. (22%)
Average Frost-Free Days: 95 (15%); 100 (12%); 105 (30%); 110 (12%); 115 (30%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
301-500 yrs. (35%)
501-1000 yrs. (29%)
201-300 yrs (14%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (6%)
Class II – Medium Departure (83%)
Class III – High Departure (6%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (87%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (9%) Barren (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 1%
LTA Ownership:
State Land: 28%
Federal Land: 0%
Private/Other Land: 72%

LTA #: 212Rc12

LTA NAME: Indian lake

BRIEF DESCRIPTION: Large lake surrounded by sandy or sandy-skeletal soils.

ACRES: 8,640 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lake (92%)

Bedrock: Burnt Bluff Group (45%); Cabot Head Shale (31%); Manistique Group (13%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (100%)

Landforms: Outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Water (96%); Markey-Dawson-Carbondale (2%)

Surface Texture: Undefined (96%); peat (2%)

Particle Size Class: Undefined (96%); sandy or sandy-skeletal (2%)

Drainage Class: Undefined (96%); very poorly drained (2%)

Infiltration Rate: Undefined (96%); high/very slow (2%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Lake/River (98%)

2001 Dominant (IFMAP): Water (99%)

Landfire BPS: Open Water (100%)

HYDROGRAPHY:

Lakes: 100% (LTA in open water)

Wetlands (NWI): 0.5%

Dominant Classes: Forested (0.3%); scrub-shrub (0.1%)

Rivers and streams (total mileage): 0 mi.

Dominant: N/A

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Indian Lake-Indian River	40601060509	8,639	100

LOCAL CLIMATE:

Avg. Temperature: Undefined (99%); 41°F (1%); range (9° - 75°F)

Annual Precipitation: Undefined (99%); 31 in. (1%)

Average Seasonal Snowfall Depth: 70 in. (100%)

Average Frost-Free Days: Undefined in lake (96%); 100 (2%) on land

LANDFIRE:

Dominant Natural Disturbance Mechanism: N/A

Mean Fire Return Interval (Fire-Free Period): N/A

FRCC Departure (aka Ecological Departure) ranges from 0-100, with lower numbers indicating lower ecological departure from reference condition: N/A

Fire Regime Group: N/A

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: < 1%

LTA Ownership:

State Land: 4%

Federal Land: 0%

Private/Other Land: 96%

LTA #: 212Rb02

LTA NAME: Indian River Upland

BRIEF DESCRIPTION: Outwash plains of sandy soils. Pine forests and herbaceous open-lands dominant.

ACRES: 10,176 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (98%)
Bedrock: Stonington Formation (50%); Utica Shale Member (32%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (69%); outwash plain (23%)
Landforms: Outwash deposits found over old lake plains; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (97%)
Surface Texture: Sand (99%)
Particle Size Class: Sandy (99%)
Drainage Class: Excessively drained (97%)
Infiltration Rate: High (99%)

VEGETATIVE COMMUNITIES:

1800 Dominant: White Pine-Red Pine Forest (45%); Jack Pine-Red Pine Forest (20%); Hemock-White Pine Forest (9%); Beech-Sugar Maple-Hemlock Forest (8%)
2001 Dominant (IFMAP): Pines (34%); Herbaceous Openland (22%); Lowland Coniferous Forest (11%); Mixed Upland Conifers (10%); Northern Hardwood Association (6%)
Landfire BPS: Great Lakes Pine Barrens (58%); Boreal Acid Peatland Systems (11%); Laurentian Pine-Oak Barrens (8%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (8%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)
Wetlands (NWI): 14%
Dominant Classes: Forested (9%); scrub-shrub (4%)
Rivers and streams (total mileage): 12.2 mi.
Dominant: Indian River (8.8 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Little Murphy Creek-Indian River	40601060504	6,704	66
Iron Creek-Indian River	40601060506	2,322	23
Dead Creek	40601060507	995	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (97%); range (7° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 90 in. (67%); 70 in. (21%)
Average Frost-Free Days: 110 (99%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Fire
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (59%)
11-15 yrs. (10%)
21-25 yrs. (5%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (27%)
Class III – High Departure (68%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (77%)
FRG V (>200 Year Fire Return Interval, Any Severity) (11%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (8%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Indian River
Recreational: 9.6 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 94%
Private/Other Land: 6%

LTA #: 212Rb30

LTA NAME: Interior Wetlands

BRIEF DESCRIPTION: Lowland outwash plains of sandy or sandy-skeletal soils. Lowland coniferous and pine forests dominant.

ACRES: 14,356 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Peat and muck (46%); lacustrine sand and gravel (30%); thin to discontinuous glacial till over bedrock (9%)

Bedrock: Manistique Group (36%); Burnt Bluff Group (20%); Cabot Head Shale (16%); Manitoulin Dolomite (14%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (59%); bedrock-controlled ground moraine (30%)

Landforms: Outwash deposits found over old lake plains; rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (50%); Rubicon-Croswell-Au Gres (26%); Rock Outcrop-Posen-East lake (11%)

Surface Texture: Peat (50%); sand (29%); very cobbly fine sandy loam (11%)

Particle Size Class: Sandy or sandy-skeletal (50%); sandy (39%)

Drainage Class: Very poorly drained (50%); excessively drained (29%); well drained (21%)

Infiltration Rate: High/very slow (50%); high (39%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (51%); Beech-Sugar Maple-Hemlock Forest (11%); Sugar Maple-Hemlock Forest (9%); Lake/River (7%); Hemlock-White Pine Forest (5%)

2001 Dominant (IFMAP): Lowland Coniferous Forest (35%); Pines (18%); Lowland Shrub (14%); Mixed Non-Forest Wetland (11%); Aspen Association (6%)

Landfire BPS: Boreal Acid Peatland Systems (45%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (23%); Boreal White Spruce-Fir-Hardwood Forest – Inland (8%)

HYDROGRAPHY:

Lakes: 7.7% (LTA in open water)

Wetlands (NWI): 56%

Dominant Classes: Forested (42%); scrub-shrub (11%)

Rivers and streams (total mileage): 9.2 mi.

Dominant: North Branch Carp River (4.5 mi)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
North Branch Carp River	40700020103	6,228	43
Biscuit Creek	40700020203	2,452	17
Hemlock Creek-Pine River	40700020202	2,093	15
Trout Lake-Pine River	40700020209	1,888	13
Bear Creek	40601060601	1,428	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (68%); 31 in. (32%)
Average Seasonal Snowfall Depth: 90 in. (98%)
Average Frost-Free Days: 100 (50%); 110 (39%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (13%)
301-500 yrs. (10%)
>1000 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (2%)
Class II – Medium Departure (81%)
Class III – High Departure (9%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (44%)
FRG V (>200 Year Fire Return Interval, Any Severity) (37%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (9%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 98%
Private/Other Land: 2%

LTA #: 212Rc09

LTA NAME: Isabella Remnant Moraine

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of coarse-loamy soils. Northern hardwood forests dominant.

ACRES: 13,371 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Medium-textured glacial till (62%); glacial outwash sand and gravel (32%)
Bedrock: Manitoulin Dolomite (73%); Queenston Shale (25%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (63%); lake plain (17%)
Landforms: Rock outcrops and small outwash filled channels; nearly level plains

SOIL COMPLEXES:

Map Units: Trenary-Onaway-Charlevoix (61%); Kalkaska (31%)
Surface Texture: Sandy loam (61%); sand (31%)
Particle Size Class: Coarse-loamy (61%); sandy (31%)
Drainage Class: Somewhat poorly drained (61%); somewhat excessively drained (31%)
Infiltration Rate: Moderate (61%); high (31%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Spruce-Fire-Cedar Forest (28%); Mixed Conifer Swamp (28%); Hemlock-White Pine (19%); Beech-Sugar Maple-Hemlock Forest (14%)
2001 Dominant (IFMAP): Northern Hardwood Association (23%); Aspen Association (14%); Lowland Shrub (11%); Lowland Coniferous Forest (10%); Upland Mixed Forest (10%); Forage Crops/Non-Tilled Herbaceous (9%); Herbaceous Openland (9%)
Landfire BPS: Boreal White Spruce-Fir-Hardwood Forest – Coastal (25%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (24%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (21%); Laurentian-Acadian Northern Hardwoods Forest (14%)

HYDROGRAPHY:

Lakes: 0.1% (LTA in open water)
Wetlands (NWI): 23%
    Dominant Classes: Forested (21%); scrub-shrub (1%)
Rivers and streams (total mileage): 9.9 mi.
    Dominant: Southwest Branch Fishdam River (2.7 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Fishdam River	40301120108	5,911	44
Valentine Creek-Frontal Big Bay De Noc	40301120105	4,606	34
Sturgeon River	40301120207	2,010	15

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 120 (61%); 110 (31%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects /Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
301-500 yrs. (24%)
501-1000 yrs. (18%)
>1000 yrs. (16%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (72%)
Class III – High Departure (12%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (70%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (25%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Sturgeon River
Recreational: 1.8 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 51%
Private/Other Land: 49%

LTA #: 212Rb18

LTA NAME: Lake Stella Complex

BRIEF DESCRIPTION: Outwash plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 24,632 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Peat and muck (54%); glacial outwash sand and gravel (42%)
Bedrock: Trenton Group (81%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (95%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (52%); Kalkaska (31%)
Surface Texture: Peat (52%); sand (31%)
Particle Size Class: Sandy or sandy-skeletal (69%); sandy (31%)
Drainage Class: Very poorly drained (69%); somewhat excessively drained (31%)
Infiltration Rate: High/very slow (69%); high (31%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (59%); Hemlock-White Pine Forest (18%); Lake/River (6%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (40%); Lowland Shrub (12%); Northern Hardwood Association (11%); Lowland Deciduous Forest (9%); Mixed Non-Forest Wetland (7%); Pines (5%)
Landfire BPS: Boreal Acid Peatland Systems (54%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (17%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (13%)

HYDROGRAPHY:

Lakes: 6% (LTA in open water)
Wetlands (NWI): 65%
Dominant Classes: Forested (54%); scrub-shrub (10%)
Rivers and streams (total mileage): 23.5 mi.
Dominant: Sturgeon River (7.4 mi.)
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Camp R Creek-Sturgeon River	40301120202	11,370	46
West Branch Sturgeon River	40301120201	10,631	43

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (60%); 90 in. (40%)
Average Frost-Free Days: 100 (52%); 110 (31%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
61-70 yrs. (17%)
51-60 yrs. (13%)
71-80 yrs. (12%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (88%)
Class III – High Departure (5%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (67%)
FRG V (>200 Year Fire Return Interval, Any Severity) (22%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Sturgeon River
Study: 8.3 mi.

OTHER NOTES:

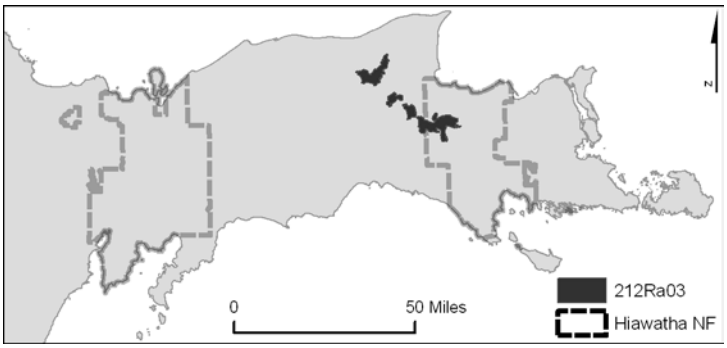
% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 29%
Private/Other Land: 71%

LTA #: 212Ra03

LTA NAME: Lake Superior Highlands

BRIEF DESCRIPTION: Outwash plains of sandy or sandy-skeletal soils in well-stratified layers. Northern hardwoods and pine forests.

ACRES: 53,750 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: End moraines of coarse-textured till (56%); lacustrine sand and gravel (11%); coarse-textured glacial till (9%); peat and muck (9%)

Bedrock: Utica Shale Member (30%); Trenton Group (19%); Black River Group (14%); Collingwood Shale Member (9%); Prairie Du Chien Group (9%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (48%); bedrock-controlled ground moraine (16%); lake plain (15%); outwash plain (lowlands) (11%)

Landforms: Sand and gravel deposits in well-stratified layers; rock outcrops and small outwash filled channels; nearly level plains

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (37%); Kalkaska (24%); Rousseau-Ontonagon-Kalkaska-Allendale (11%); Markey-Dawson-Carbondale (9%)

Surface Texture: Sand (61%); fine sand (11%); peat (9%)

Particle Size Class: Sandy (77%); sandy or sandy-skeletal (9%)

Drainage Class: Excessively drained (37%); somewhat excessively drained (30%); very poorly drained (15%)

Infiltration Rate: High (77%); high/very slow (15%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (73%); Mixed Conifer Swamp (12%)

2001 Dominant (IFMAP): Northern Hardwood Association (46%); Pines (15%); Aspen Association (12%); Lowland Coniferous Forest (10%)

Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (60%); Boreal Acid Peatland Systems (12%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (7%)

HYDROGRAPHY:

Lakes: 2% (LTA in open water)

Wetlands (NWI): 12%

Dominant Classes: Forested (10%); scrub-shrub (2%)

Rivers and streams (total mileage): 16 mi.

Dominant: East Branch Tahquamenon River (5 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Grants Creek-E. Branch Tahquamenon	40202020402	9,421	18
Creek No. Eight-E. Branch Tahquamenon	40202020401	6,537	12
Murphy Creek	40202020503	5,466	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)

Annual Precipitation: 33 in. (83%)

Average Seasonal Snowfall Depth: 110 in. (68%); 150 in. (22%)

Average Frost-Free Days: 110 (72%); 100 (15%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (59%)

501-1000 yrs. (6%)

301-500 yrs. (4%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (3%)

Class II – Medium Departure (28%)

Class III – High Departure (66%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (71%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (15%)

FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (8%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:

East Branch Tahquamenon River

Recreational: 5.0 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 38%

LTA Ownership:

State Land: 12%

Federal Land: 33%

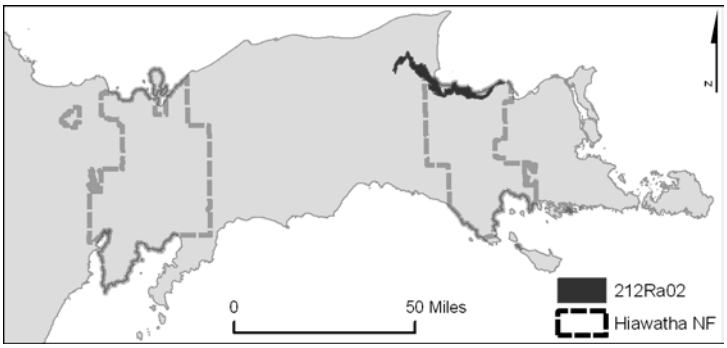
Private/Other Land: 55%

LTA #: 212Ra02

LTA NAME: Lake Superior Plains

BRIEF DESCRIPTION: Dominantly beach ridges composed of sandy or sandy-skeletal soils. Aspen and northern hardwoods forests.

ACRES: 36,934 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: End moraines of coarse-textured till (56%); lacustrine clay and silt (24%)
Bedrock: Munising Formation (79%); Prairie Du Chien Group (11%)

LANDFORMS:

Dominant Landform Pattern(s): Beach ridges and dunes (32%); outwash plain (27%); lake plain (14%)
Landforms: Ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits; deposits of sand and gravel in well-stratified layers; or a nearly level plain

SOIL COMPLEXES:

Map Units: Rousseau-Ontonagon-Kalkaska-Allendale (53%); Markey-Dawson-Carbondale (15%); Rubicon-Rousseau (10%); Pickford-Gogomain-Biscuit (9%)
Surface Texture: Fine sand (61%); peat (15%); very fine sandy loam (13%)
Particle Size Class: Sandy (64%); sandy or sandy-skeletal (15%); coarse-loamy over clayey (9%)
Drainage Class: Well-drained (53%); excessively drained (20%); very poorly drained (15%)
Infiltration Rate: High (72%); high/very slow (15%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (61%); Hemlock-White Pine Forest (21%)
2001 Dominant (IFMAP): Aspen Association (34%); Northern Hardwood Association (26%); Lowland Coniferous Forest (10%); Lowland Shrub (9%); Pines (8%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (53%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (11%); Boreal White Spruce-Fir-Hardwood Forest-Coastal (8%); Boreal Acid Peatland Systems (6%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (6%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)
Wetlands (NWI): 15%
Dominant Classes: Forested (13%); scrub-shrub (2%)
Rivers and streams (total mileage): 70.6 mi.

Dominant: Tahquamenon River (18.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Naomikong Creek-Frontal Lake Superior	40202030103	10,953	30
Roxbury Creek-Frontal Lake Superior	40202030101	8,476	23
Bowers Creek-Tahquamenon River	40202020507	7,321	20

LOCAL CLIMATE:

Avg. Temperature: 41°F (98%); range (7° - 77°F)

Annual Precipitation: 33 in. (60%); 35 in. (25%)

Average Seasonal Snowfall Depth: 130 in. (76%); 150 in. (15%)

Average Frost-Free Days: 110 (64%); 135 (18%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (47%)

501-1000 yrs. (18%)

301-500 yrs. (7%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (6%)

Class II – Medium Departure (28%)

Class III – High Departure (63%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (79%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (14%)

FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:

East Branch Tahquamenon River

Study: 22 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 62%

LTA Ownership:

State Land: 23%

Federal Land: 37%

Private/Other Land: 40%

LTA #: 212Re13

LTA NAME: Lower Carp River Complex

BRIEF DESCRIPTION: Ground moraines and lake plains of sandy over loamy soils. Lowland coniferous and pine forests dominant.

ACRES: 11,610 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (63%); lacustrine sand and gravel (22%)
Bedrock: Point Aux Chenes Shale (58%); Engadine Group (35%)

LANDFORMS:

Dominant Landform Pattern(s): Ground moraine (48%); lake plain (47%)
Landforms: Extensive fairly even layers of till; nearly level plains

SOIL COMPLEXES:

Map Units: Wallace-Roscommon-Finch (50%); Brevort (39%)
Surface Texture: Sand (50%); loamy sand (39%)
Particle Size Class: Undefined (50%); sandy over loamy (39%)
Drainage Class: Poorly drained (93%)
Infiltration Rate: High/very slow (50%); moderate (46%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Cedar Swamp (69%); Hemlock-White Pine Forest (18%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (36%); Pines (26%); Lowland Shrub (9%); Aspen Association (8%); Lowland Mixed Forest (5%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (56%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (25%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)
Wetlands (NWI): 55%
Dominant Classes: Forested (50%); scrub-shrub (4%)
Rivers and streams (total mileage): 14.7 mi.
Dominant: Carp River (5.4 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Red Creek-Carp River	40700020106	8,414	72
Garden Hill Creek-Pine River	40700020211	1,694	15
Martineau Creek-Frontal Lake Huron	40700020306	1,503	13

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (91%)
Average Frost-Free Days: 100 (50%); 105 (39%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (46%)
301-500 yrs. (20%)
>1000 yrs. (15%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (92%)
Class III – High Departure (4%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (90%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (8%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Carp River
Recreational: 4.7 mi.
Wild: 1.3 mi.

OTHER NOTES:

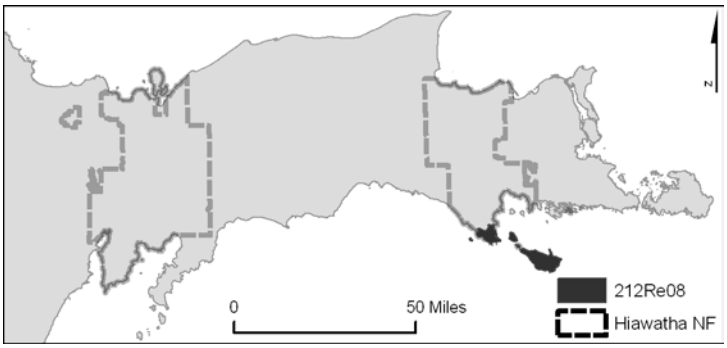
% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 90%
Private/Other Land: 10%

LTA #: 212Re08

LTA NAME: Mackinac Breccia

BRIEF DESCRIPTION: Beach ridges and dunes of sandy over loamy soils. Pine and lowland coniferous forests dominant.

ACRES: 38,893 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (49%); lacustrine sand and gravel (40%)
Bedrock: Undefined (61%); Mackinac Breccia (20%)

LANDFORMS:

Dominant Landform Pattern(s): Beach ridges and dunes (37%); bedrock-controlled ground moraine (28%); ground moraine (25%)
Landforms: Ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits; rock outcrops and small outwash filled channels; extensive fairly even layers of till

SOIL COMPLEXES:

Map Units: Brevort (29%); Rock Outcrop-Posen-East Lake (21%); Roscommon-Eastport (18%); St. Ignace-Alpena (17%)
Surface Texture: Loamy sand (29%); very cobbly fine sandy loam (21%); sand (19%); gravelly sandy loam (17%)
Particle Size Class: Undefined (30%); sandy over loamy (29%); loamy-skeletal (21%)
Drainage Class: Excessively drained (36%); poorly drained (30%); well drained (21%)
Infiltration Rate: Moderate (50%); high (36%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock (39%); Cedar Swamp (34%); Spruce-Fir-Cedar Forest (10%)
2001 Dominant (IFMAP): Pines (20%); Lowland Coniferous Forest (15%); Northern Hardwood Association (11%); Upland Mixed Forest (7%); Mixed Non-Forest Wetland (5%); Aspen Association (5%); Lowland Shrub (5%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (31%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (28%); Laurentian-Acadian Northern Hardwoods Forest (22%)

HYDROGRAPHY:

Lakes: 5% (LTA in open water)
Wetlands (NWI): 24%
Dominant Classes: Forested (21%); scrub-shrub (2%)

Rivers and streams (total mileage): 9.8 mi.

Dominant: Moran River (2.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Cut River-Frontal Lake Michigan	40601070101	7,374	19
Rabbit Back Creek-Frontal Lake Huron	40700020307	4,801	12

LOCAL CLIMATE:

Avg. Temperature: 43°F (100%); range (9° - 77°F)

Annual Precipitation: 29 in. (76%); 27 in. (24%)

Average Seasonal Snowfall Depth: Undefined (69%); 70 in. (31%)

Average Frost-Free Days: 140 (36%); 105 (29%); 115 (21%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

501-1000 yrs. (40%)

>1000 yrs. (25%)

301-500 yrs. (20%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (7%)

Class II – Medium Departure (58%)

Class III – High Departure (18%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (92%)

Indeterminate Fire Regime Characteristics (2%)

Barren (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 21%

LTA Ownership:

State Land: 6%

Federal Land: 7%

Private/Other Land: 87%

LTA #: 212Rb15

LTA NAME: Mid-Sturgeon Moraine/Wetland

BRIEF DESCRIPTION: Outwash plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 32,070 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (87%)
Bedrock: Utica Shale Member (39%); Stonington Formation (36%); Trenton Group (18%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (83%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Tawas-Kalkaska-Carbondale (83%)
Surface Texture: Muck (83%)
Particle Size Class: Sandy or sandy-skeletal (94%)
Drainage Class: Very poorly drained (94%)
Infiltration Rate: High/very slow (94%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Muskeg/Bog (25%); Mixed Conifer Swamp (20%); Beech-Sugar Maple-Hemlock Forest (17%); Cedar Swamp (16%); Sugar Maple-Hemlock Forest (8%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (33%); Lowland Deciduous Forest (17%); Northern Hardwood Association (13%); Upland Mixed Forest (8%); Pines (7%); Mixed Non-Forest Wetlands (6%)
Landfire BPS: Boreal Acid Peatland Systems (45%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (23%); Boreal White Spruce-Fir-Hardwood Forest – Inland (13%)

HYDROGRAPHY:

Lakes: 0.8% (LTA in open water)
Wetlands (NWI): 64%
Dominant Classes: Forested (57%); scrub-shrub (7%)
Rivers and streams (total mileage): 26.1 mi.
Dominant: Sturgeon River (13.5 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Little Black Creek-Sturgeon River	40301120205	12,084	38
Dana Lake-Sturgeon River	40301120203	8,978	28
Haymeadow Creek	40301110106	4,576	14
West Branch Sturgeon River	40301120201	3,640	11

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (58%); 90 in. (42%)
Average Frost-Free Days: 105 (83%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
61-70 yrs. (15%)
>1000 yrs. (13%)
501-1000 (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (86%)
Class III – High Departure (13%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (55%)
FRG V (>200 Year Fire Return Interval, Any Severity) (38%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (7%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Sturgeon River
Scenic: 10.5 mi.
Study: 4.8 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 52%
Private/Other Land: 48%

LTA #: 212Rb13

LTA NAME: Mint Farm

BRIEF DESCRIPTION: Lowland outwash plains of sandy or sandy-skeletal soils. Mixed non-forest wetlands dominant.

ACRES: 37,858 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (71%); peat and muck (25%)

Bedrock: Cabot Head Shale (17%); Stonington Formation (16%); Manitoulin Dolomite (14%); Queenston Shale (14%); Big Hill Dolomite (13%); Utica Shale Member (13%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (96%)

Landforms: Outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (89%)

Surface Texture: Peat (89%)

Particle Size Class: Sandy or sandy-skeletal (89%)

Drainage Class: Very poorly drained (89%)

Infiltration Rate: High/very slow (89%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Muskeg/Bog (50%); Mixed Conifer Swamp (21%); Jack Pine-Red Pine Forest (13%)

2001 Dominant (IFMAP): Mixed Non-Forest Wetland (36%); Lowland Coniferous Forest (25%); Lowland Shrub (23%)

Landfire BPS: Boreal Acid Peatland Systems (44%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (39%)

HYDROGRAPHY:

Lakes: 0.3% (LTA in open water)

Wetlands (NWI): 81%

Dominant Classes: Forested (49%); scrub-shrub (30%)

Rivers and streams (total mileage): 37.6 mi.

Dominant: Smith Creek (11.3 mi.); Sturgeon Hole Creek (5.8 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Dead Creek	40601060507	15,483	41
Smith Creek	40601060508	9,806	26
Sturgeon Hole Creek	40601060603	7,724	20

LOCAL CLIMATE:

Avg. Temperature: 41°F (96%); range (7° - 79°F)
Annual Precipitation: 33 in. (60%); 31 in. (40%)
Average Seasonal Snowfall Depth: 70 in. (61%); 90 in. (20%)
Average Frost-Free Days: 100 (90%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (15%)
501-1000 yrs. (12%)
51-60 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (92%)
Class III – High Departure (7%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (46%)
FRG V (>200 Year Fire Return Interval, Any Severity) (41%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (9%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Indian River
Recreational: 0.3 mi.

OTHER NOTES:

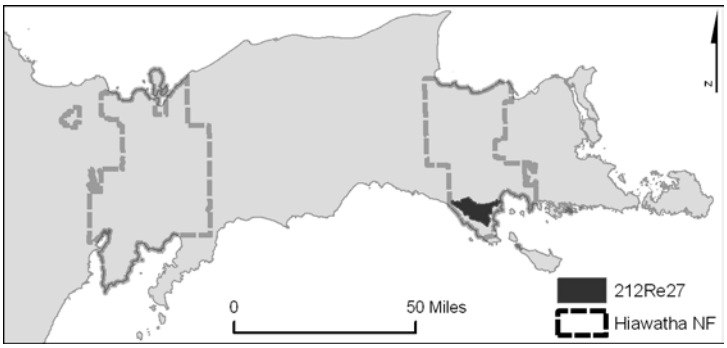
% LTA in HNF Proclamation Boundary: 24%
LTA Ownership:
State Land: 60%
Federal Land: 24%
Private/Other Land: 16%

LTA #: 212Re27

LTA NAME: Moran Complex

BRIEF DESCRIPTION: Lowland outwash plains and bedrock-controlled ground moraines of varying soils. Lowland coniferous forests dominant.

ACRES: 29,621 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (41%); peat and muck (37%)
Bedrock: Point Aux Chenes Shale (97%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (38%); bedrock-controlled ground moraine (35%); beach ridges and dunes (16%)
Landforms: Outwash deposits found over old lake plains; rock outcrops and small outwash filled channels; ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits

SOIL COMPLEXES:

Map Units: Tawas-Lupton-Carbondale-Au Gres (42%); Summerville-Menominee-Longrie-Kalkaska-Emmet (15%); Brevort (13%); Roscommon-Eastport (9%); Kinross-Au Gres (6%)
Surface Texture: Muck (42%); sand (16%); sandy loam (15%); undefined (14%)
Particle Size Class: Undefined (65%); sandy (22%)
Drainage Class: Very poorly drained (48%); well drained (15%); poorly drained (14%); undefined (14%)
Infiltration Rate: High/very slow (43%); high (24%); moderate (19%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Cedar Swamp (40%); Beech-Sugar Maple-Hemlock Forest (24%); Lake/River (19%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (28%); Water (18%); Lowland Shrub (13%); Aspen Association (7%); Herbaceous Openland (6%); Pines (6%); Mixed Non-Forest Wetland (6%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (50%); Open Water (19%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (19%)

HYDROGRAPHY:

Lakes: 19% (LTA in open water)
Wetlands (NWI): 46%
Dominant Classes: Forested (39%); scrub-shrub (6%)

Rivers and streams (total mileage): 21.7 mi.

Dominant: Martineau Creek (3.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Bervoort River	40601070104	9,284	31
Rabbit Back Creek-Frontal Lake Huron	40700020307	8,224	28
Point Aux Chenes River	40601070102	6,952	23
Martineau Creek-Frontal Lake Huron	40700020306	4,998	17

LOCAL CLIMATE:

Avg. Temperature: 43°F (73%); 41°F (27%); range (9° - 77°F)

Annual Precipitation: 29 in. (55%); 31 in. (45%)

Average Seasonal Snowfall Depth: 70 in. (100%)

Average Frost-Free Days: 100 (43%); 110 (16%); 105 (13%); 140 (9%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

501-1000 yrs. (33%)

>1000 yrs. (22%)

301-500 yrs. (19%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (3%)

Class II – Medium Departure (71%)

Class III – High Departure (22%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (77%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (4%)

FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (<1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%

LTA Ownership:

State Land: 3%

Federal Land: 48%

Private/Other Land: 49%

LTA #: 212Sc13

LTA NAME: Munising Disintegration Moraines

BRIEF DESCRIPTION: Large ice margin complex of sandy soils. Northern hardwood forests dominant.

ACRES: 48,116 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (40%); coarse-textured glacial till (29%); medium-textured glacial till (17%)

Bedrock: Trempealeau Formation (43%); Prairie Du Chien Group (41%)

LANDFORMS:

Dominant Landform Pattern(s): Ice margin complex (84%)

Landforms: Head-of-outwash, ice-contact slopes, ice-contact deltas, kames, kame moraines, kame terraces, kettles, outwash fans and small outwash filled plains

SOIL COMPLEXES:

Map Units: Karlin-Kalkaska-Blue Lake (39%); Kalkaska (37%); Onota-Munising-Deerton (23%)

Surface Texture: Sandy loam (61%); sand (37%)

Particle Size Class: Sandy (75%); coarse-loamy (23%)

Drainage Class: Somewhat excessively drained (75%); moderately well drained (23%)

Infiltration Rate: High (75%); moderate (24%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (85%)

2001 Dominant (IFMAP): Northern Hardwood Association (77%); Upland Mixed Forest (4%)

Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (71%); Laurentian-Acadian Northern Hardwoods Forest – Hemlock (9%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)

Wetlands (NWI): 6%

Dominant Classes: Forested (4%); scrub-shrub (1%)

Rivers and streams (total mileage): 36.0 mi.

Dominant: Buck Bay Creek (4.9 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Au Train River	40202010112	18,554	39
Anna River	40202010202	12,369	26
Cleaveland Cliffs Basin	40202010111	5,194	11

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 35 in. (56%); 33 in. (44%)
Average Seasonal Snowfall Depth: 150 in. (96%)
Average Frost-Free Days: 115 (61%); 110 (37%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (69%)
501-1000 yrs. (11%)
301-500 yrs. (4%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (12%)
Class II – Medium Departure (13%)
Class III – High Departure (69%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (87%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (10%)
Indeterminate Fire Regime Characteristics (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 91%
LTA Ownership:
State Land: 0%
Federal Land: 58%
Private/Other Land: 42%

LTA #: 212Ra13

LTA NAME: Munising Moraine II

BRIEF DESCRIPTION: Ground moraines and pitted outwash plains of sandy or coarse-loamy soils. Northern hardwoods dominant.

ACRES: 107,768 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (44%); end moraines of medium-textured till (40%)
Bedrock: Prairie Du Chien Group (74%); Trempealeau Formation (20%)

LANDFORMS:

Dominant Landform Pattern(s): Ground moraine (46%); pitted outwash plain (30%); outwash plain (lowlands) (10%)
Landforms: Extensive fairly even layers of till; outwash plains marked by many irregular depressions such as kettles and shallow pits; and outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Kalkaska (45%); Onata-Munising-Deerton (20%); Markey-Dawson-Carbondale (17%)
Surface Texture: Sand (46%); sandy loam (25%); peat (18%)
Particle Size Class: Sandy (51%); coarse-loamy (20%)
Drainage Class: Somewhat excessively drained (50%); very poorly drained (28%); moderately well drained (20%)
Infiltration Rate: High (51%); moderate (31%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (65%); Mixed Conifer Swamp (14%); Hemlock-White Pine Forest (13%)
2001 Dominant (IFMAP): Northern Hardwood Association (62%); Lowland Coniferous Forest (6%); Lowland Shrub (6%); Pines (6%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (57%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (13%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (9%); Boreal Acid Peatland Systems (9%)

HYDROGRAPHY:

Lakes: 2% (LTA in open water)
Wetlands (NWI): 17%
Dominant Classes: Forested (13%); scrub-shrub (2%)

Rivers and streams (total mileage): 66.2 mi.

Dominant: Driggs River (7.8 mi.); Star Creek (5.9 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Negro Creek-Driggs River	40601060301	18800.45	17
Prairie Creek-Hickey Creek	40601060408	14266.97	13
Stoner Creek-Creighton River	40601060406	13760.81	13
Miners River	40202010203	13504.98	13
Mosquito River-Frontal Lake Superior	40202010204	11108.84	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)

Annual Precipitation: 33 in. (64%); 35 in. (26%)

Average Seasonal Snowfall Depth: 190 in. (51%); 170 in. (26%); 150 in. (23%)

Average Frost-Free Days: 110 (46%); 115 (25%); 100 (17%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (61%)

501-1000 yrs. (7%)

101-125 yrs. (6%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (3%)

Class II – Medium Departure (35%)

Class III – High Departure (57%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (75%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (19%)

Indeterminate Fire Regime Characteristics (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 24%

LTA Ownership:

State Land: 37%

Federal Land: 7%

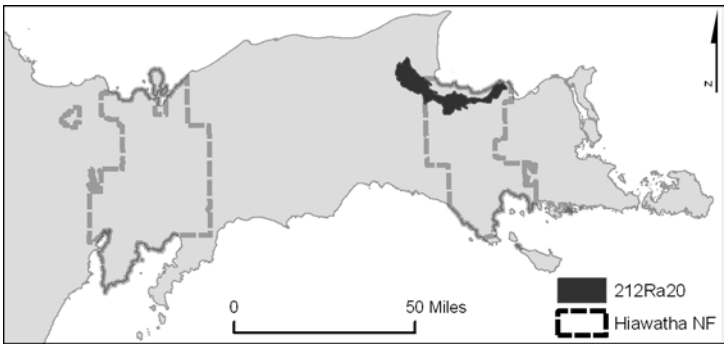
Private/Other Land: 56%

LTA #: 212Ra20

LTA NAME: Munising Moraine IV

BRIEF DESCRIPTION: Outwash plain of sandy soils. Northern hardwoods and aspen forests dominant.

ACRES: 72,218 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: End moraines of coarse-textured till (88%)
Bedrock: Black River Group (48%); Prairie Du Chien Group (30%); Munising Formation (18%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (87%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (84%)
Surface Texture: Sand (84%)
Particle Size Class: Sandy (94%)
Drainage Class: Excessively drained (84%)
Infiltration Rate: High (94%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock (93%)
2001 Dominant (IFMAP): Northern Hardwood Association (63%); Aspen Association (14%); Pines (10%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (85%)

HYDROGRAPHY:

Lakes: 0.7% (LTA in open water)
Wetlands (NWI): 4%
Dominant Classes: Forested (3%); scrub-shrub (1%)
Rivers and streams (total mileage): 13.7 mi.
Dominant: Popps Creek (2.0 mi.)
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
East Branch Tahquamenon River	40202020404	8,198	11
Ankodosh Creek	40202030102	7,952	11
Bowers Creek-Tahquamenon River	40202020507	7,928	11
Naomikong Creek-Frontal Lake Superior	40202030103	7,735	11

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 33 in. (57%); 35 in. (38%)
Average Seasonal Snowfall Depth: 130 in. (60%); 110 in. (28%)
Average Frost-Free Days: 110 (94%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (81%)
501-1000 yrs. (4%)
Indeterminate Fire Regime Characteristics (2%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (10%)
Class III – High Departure (88%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (89%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (7%)
Indeterminate Fire Regime Characteristics (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
East Branch Tahquamenon River
Recreational: 0.3 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 58%
LTA Ownership:
State Land: 3%
Federal Land: 43%
Private/Other Land: 54%

LTA #: 212Rc17

LTA NAME: Nahma Lowlands

BRIEF DESCRIPTION: Beach ridges and dunes transitioning to lake plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 29,065 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (65%); peat and muck (20%)
Bedrock: Queenston Shale (70%); Big Hill Dolomite (27%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (75%); beach ridges and dunes (16%)
Landforms: Nearly level plains; ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (78%); Karlin-Kalkaska-Blue Lake (10%)
Surface Texture: Peat (78%); sandy loam (12%)
Particle Size Class: Sandy or sandy-skeletal (78%); sandy (19%)
Drainage Class: Very poorly drained (79%); somewhat excessively drained (19%)
Infiltration Rate: High/very slow (78%); high (19%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (52%); Spruce-Fir-Cedar Forest (11%); Beech-Sugar Maple-Hemlock Forest (8%); Jack Pine-Red Pine Forest (7%); Hemlock-White Pine Forest (7%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (44%); Lowland Shrub (8%); Lowland Deciduous Forest (8%); Pines (7%); Mixed Non-Forest Wetland (6%); Upland Mixed Forest (6%); Northern Hardwood Association (5%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (61%); Boreal Acid Peatland Systems (10%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (7%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (7%)

HYDROGRAPHY:

Lakes: 4% (LTA in open water)
Wetlands (NWI): 60%
    Dominant Classes: Forested (48%); scrub-shrub (11%)
Rivers and streams (total mileage): 45.1 mi.
    Dominant: Sturgeon River (17.7 mi.); Bull Run (5.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Sturgeon River	40301120207	19,744	68
Ogontz River	40301120208	3,887	13

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (74%); 50 in. (26%)
Average Frost-Free Days: 100 (78%); 115 (10%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (27%)
>1000 yrs. (19%)
301-500 yrs. (17%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (89%)
Class III – High Departure (5%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (71%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (17%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Sturgeon River
Recreational: 20.7 mi.

OTHER NOTES:

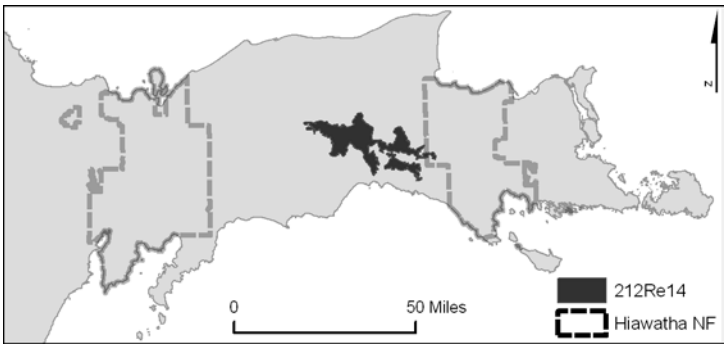
% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 77%
Private/Other Land: 23%

LTA #: 212Re14

LTA NAME: Newberry Moraine

BRIEF DESCRIPTION: Outwash plains and recessional moraines of sandy soils. Northern hardwood and aspen forests dominant.

ACRES: 119,361 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (45%); coarse-textured glacial till (30%); peat and muck (12%)

Bedrock: Burnt Bluff Group (29%); Manitoulin Dolomite (13%); Big Hill Dolomite (12%); Cabot Head Shale (11%); Queenston Shale (11%); Manistique Group (11%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (29%); recessional moraine (22%); outwash plain (lowlands) (17%); ground moraine (15%)

Landforms: Outwash deposits of sand and gravel in well-stratified layers; sandy and gravelly outwash and loamy lodgment till; outwash deposits found over old lake plains; extensive fairly even layers of till

SOIL COMPLEXES:

Map Units: Karlin-Kalkaska-Blue Lake (25%); Tawas-Lupton-Carbondale-Au Gres (22%); Kalkaska (20%); Waucedah-Rousseau-Nadeau-Mancelona-Cathro (6%); Carbondale-Brimley-Bohemian (6%); Trenary-Carbondale-Blue Lake (5%)

Surface Texture: Sandy loam (28%); muck (28%); sand (27%)

Particle Size Class: Sandy (66%); undefined (23%)

Drainage Class: Somewhat excessively drained (45%); very poorly drained (23%); well drained (15%)

Infiltration Rate: High (66%); high/very slow (24%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (72%); Mixed Conifer Swamp (13%)

2001 Dominant (IFMAP): Northern Hardwood Association (35%); Aspen Association (20%); Herbaceous Openland (8%); Lowland Coniferous Forest (8%); Lowland Shrub (7%); Pines (6%)

Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (61%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (14%); Boreal Acid Peatland Systems (8%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)

Wetlands (NWI): 17%

Dominant Classes: Forested (13%); scrub-shrub (3%)

Rivers and streams (total mileage): 59.4 mi.

Dominant: South Branch Hendrie River (3.4 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
East Branch Sage River	40202020203	11,484	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (99%); range (5° - 79°F)

Annual Precipitation: 31 in. (69%); 33 in. (31%)

Average Seasonal Snowfall Depth: 110 in. (55%); 90 in. (41%)

Average Frost-Free Days: 110 (30%); 115 (29%); 100 (24%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (62%)

501-1000 yrs. (10%)

301-500 yrs. (7%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (6%)

Class II – Medium Departure (28%)

Class III – High Departure (58%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (85%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (10%)

Indeterminate Fire Regime Characteristics (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 1%

LTA Ownership:

State Land: 48%

Federal Land: 0%

Private/Other Land: 52%

LTA #: 212Re11

LTA NAME: Niagara Escarpment

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of sandy soils. Northern hardwood and aspen forests dominant.

ACRES: 76,804 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Coarse-textured glacial till (40%); thin to discontinuous glacial till over bedrock (31%); lacustrine sand and gravel (12%)

Bedrock: Egadine Group (80%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (74%); ground moraine (13%)

Landforms: Rock outcrops and small outwash filled channels; extensive fairly even layers of till

SOIL COMPLEXES:

Map Units: Rock Outcrop-Posen-East Lake (27%); Summerville-Menominee-Longrie-Kalkaska-Emmet (26%); Kalkaska (14%); Wallace-Roscommon-Finch (7%); Waucedah-Rousseau-Nadeau-Mancelona-Cathro (6%)

Surface Texture: Very cobbly fine sandy loam (27%); sandy loam (26%); sand (25%); muck (12%)

Particle Size Class: Sandy (50%); loamy-skeletal (30%)

Drainage Class: Well drained (62%); somewhat excessively drained (14%); poorly drained (10%)

Infiltration Rate: High (50%); moderate (32%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (62%); Cedar Swamp (14%); Mixed Conifer Swamp (8%)

2001 Dominant (IFMAP): Northern Hardwood Association (28%); Aspen Association (21%); Pines (13%); Lowland Coniferous Forest (12%); Lowland Shrub (7%); Herbaceous Openland (5%)

Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (56%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (19%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (9%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)

Wetlands (NWI): 20%

Dominant Classes: Forested (18%); scrub-shrub (2%)

Rivers and streams (total mileage): 21.9 mi.

Dominant: Taylor Creek (7.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Taylor Creek	40700010203	19,256	25
Upper Farm Hill Creek-Carp River	40700020105	8,831	11
North Branch Carp River	40700020103	7,898	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)

Annual Precipitation: 31 in. (65%); 33 in. (35%)

Average Seasonal Snowfall Depth: 90 in. (63%); 70 in. (37%)

Average Frost-Free Days: 110 (44%); 115 (30%); 100 (14%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (55%)

501-1000 yrs. (20%)

301-500 yrs. (11%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (5%)

Class II – Medium Departure (36%)

Class III – High Departure (54%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (90%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (6%)

FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 70%

LTA Ownership:

State Land: 2%

Federal Land: 56%

Private/Other Land: 42%

LTA #: 212Re10

LTA NAME: Niagara South

BRIEF DESCRIPTION: Lake and lowland outwash plains. Lowland coniferous forests and shrubs dominant.

ACRES: 19,813 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (50%); thin to discontinuous glacial till over bedrock (38%)
Bedrock: Engadine Group (77%); Point Aux Chenes Shale (23%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (57%); outwash plain (lowlands) (21%); bedrock-controlled ground moraine (19%)
Landforms: Nearly level plains; outwash deposits found over old lake plains; rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Wallace-Roscommon-Finch (64%); Pickford-Ontonagon-Bergland (20%)
Surface Texture: Sand (77%); silty clay loam (20%)
Particle Size Class: Undefined (65%); fine (20%)
Drainage Class: Poorly drained (84%)
Infiltration Rate: High/very slow (65%); very slow (20%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (52%); Cedar Swamp (37%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (30%); Lowland Shrub (24%); Pines (20%); Aspen Association (9%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (48%); Boreal Acid Peatland Systems (21%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (16%)

HYDROGRAPHY:

Lakes: 0.8% (LTA in open water)
Wetlands (NWI): 61%
Dominant Classes: Forested (46%); scrub-shrub (13%)
Rivers and streams (total mileage): 26.6 mi.
Dominant: Carp River (12 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Upper Farm Hill Creek-Carp River	40700020105	7,958	40
Red Creek-Carp River	40700020106	6,680	34
Bervoort River	40601070104	2,581	13
Martineau Creek-Frontal Lake Huron	40700020306	1,902	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 100 (65%); 95 (20%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (22%)
301-500 yrs. (22%)
201-300 yrs. (12%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (2%)
Class II – Medium Departure (87%)
Class III – High Departure (9%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (66%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (30%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Carp River
Scenic: 2.3 mi.
Wild: 12 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 95%
Private/Other Land: 5%

LTA #: 212Sc12

LTA NAME: Onota Channelized Moraines

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of coarse-loamy soils. Northern hardwood forests dominant.

ACRES: 33,314 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (72%); glacial outwash sand and gravel (12%)

Bedrock: Munising Formation (47%); Jacobsville Sandstone (41%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (76%); glacial drainage channel (21%)

Landforms: Rock outcrops and small outwash filled channels; large drainage channels consisting of a series of outwash or bedrock terraces with a current stream channel in the bottom

SOIL COMPLEXES:

Map Units: Onota-Munising-Deerton (77%); Markey-Dawson-Carbondale (11%)

Surface Texture: Sandy loam (77%); peat (11%)

Particle Size Class: Coarse-loamy (77%); sandy or sandy-skeletal (20%)

Drainage Class: Well drained (47%); moderately well drained (29%); very poorly drained (23%)

Infiltration Rate: Moderate (80%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (84%)

2001 Dominant (IFMAP): Northern Hardwood Association (55%); Upland Mixed Forest (12%); Aspen Association (9%); Lowland Coniferous Forest (6%)

Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (68%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (9%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (9%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)

Wetlands (NWI): 11%

Dominant Classes: Forested (9%); scrub-shrub (2%)

Rivers and streams (total mileage): 41.4 mi.

Dominant: Rock River (12.6 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Rock River	40202010108	10,286	31
Deer Lake-Frontal Lake Superior	40202010113	8,284	25
Silver Creek-Rock River	40202010107	6,919	21
Laughing Whitefish River	40202010106	4,989	15

LOCAL CLIMATE:

Avg. Temperature: 41°F (71%); 43°F (29%); range (7° - 79°F)
Annual Precipitation: 33 in. (86%)
Average Seasonal Snowfall Depth: 150 in. (99%)
Average Frost-Free Days: 125 (47%); 115 (29%); 105 (12%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (67%)
501-1000 yrs. (15%)
301-500 yrs. (4%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (8%)
Class II – Medium Departure (21%)
Class III – High Departure (68%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (89%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (7%)
Indeterminate Fire Regime Characteristics (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 50%
LTA Ownership:
State Land: 2%
Federal Land: 44%
Private/Other Land: 54%

LTA #: 212Ra21

LTA NAME: Paradise

BRIEF DESCRIPTION: Beach ridges and dunes of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 19,065 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (63%); exposed bedrock surfaces (16%); peat and muck (12%)

Bedrock: Jacobsville Sandstone (79%); Munising Formation (20%)

LANDFORMS:

Dominant Landform Pattern(s): Beach ridges and dunes (67%); outwash plain (lowlands) (32%)

Landforms: Ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits; outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (66%); Deer Park (20%)

Surface Texture: Peat (66%); fine sand (25%)

Particle Size Class: Sandy or sandy-skeletal (66%); sandy (13%)

Drainage Class: Very poorly drained (66%); excessively drained (29%)

Infiltration Rate: High/very slow (66%); high (34%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (67%); Jack Pine-Red Pine Forest (13%)

2001 Dominant (IFMAP): Lowland Coniferous Forest (37%); Mixed Non-Forest Wetland (21%); Lowland Shrub (20%); Pines (8%)

Landfire BPS: Boreal Acid Peatland Systems (35%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (28%); Great Lakes Coastal Marsh Systems (13%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (6%)

HYDROGRAPHY:

Lakes: 1.5% (LTA in open water)

Wetlands (NWI): 79%

Dominant Classes: Forested (52%); scrub-shrub (25%)

Rivers and streams (total mileage): 34.4 mi.

Dominant: Tahquamenon River (3.9 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Black Creek-Frontal Whitefish Bay	40202010407	5,457	29
Roxbury Creek-Frontal Lake Superior	40202030101	4,217	22
Cheney Creek-Tahquamenon River	40202020508	2,757	14

LOCAL CLIMATE:

Avg. Temperature: 41°F (99%); range (9° - 73°F)
Annual Precipitation: 33 in. (77%); 35 in. (22%)
Average Seasonal Snowfall Depth: 130 in. (56%); 150 in. (44%)
Average Frost-Free Days: 100 (66%); 135 (20%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
Indeterminate Fire Regime Characteristics (14%)
>1000 yrs. (14%)
501-1000 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (5%)
Class II – Medium Departure (69%)
Class III – High Departure (19%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (42%);
FRG V (>200 Year Fire Return Interval, Any Severity) (31%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
East Branch Tahquamenon River
Study: 4.7 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 31%
LTA Ownership:
State Land: 52%
Federal Land: 20%
Private/Other Land: 28%

LTA #: 212Ra15

LTA NAME: Pictured Rocks Escarpment

BRIEF DESCRIPTION: Kame terraces and rock outcrops along Lake Superior shoreline with sandy or coarse-loamy soils. Northern hardwoods dominant.

ACRES: 26,671 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (50%); end-moraines of medium-textured till (40%)
Bedrock: Munising Formation (54%); Trempealeau Formation (36%)

LANDFORMS:

Dominant Landform Pattern(s): Kame terraces (36%); bedrock-controlled ground moraine (28%); ice margin complex (11%); beach ridges and dunes (10%)
Landforms: Series of terrace-like ridges consisting of stratified sand and gravel; rock outcrops and small outwash filled channels; head-of-outwash, ice-contact slopes, ice-contact deltas, kames, kame moraines, kame terraces, kettles, outwash fans and small outwash filled plains; ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits

SOIL COMPLEXES:

Map Units: Kalkaska (41%); Onata-Munising-Deerton (23%); Markey-Dawson-Carbondale (17%)
Surface Texture: Sand (58%); sandy loam (23%)
Particle Size Class: Sandy (44%); coarse-loamy (23%); sandy or sandy-skeletal (17%)
Drainage Class: Somewhat excessively drained (41%); moderately well drained (23%); very poorly drained (18%)
Infiltration Rate: High (58%); moderate (24%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (58%); Cedar Swamp (15%); Hemlock-White Pine Forest (12%)
2001 Dominant (IFMAP): Northern Hardwoods Association (52%); Lowland Coniferous Forest (11%); Aspen Association (8%); Pines (8%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (49%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (19%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (12%)

HYDROGRAPHY:

Lakes: 4% (LTA in open water)

Wetlands (NWI): 19%

Dominant Classes: Forested (18%); scrub-shrub (1%)

Rivers and streams (total mileage): 52.2 mi.

Dominant: Miners River (7.1 mi.); Sevenmile Creek (5.0 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Bear Creek-Frontal Lake Superior	40202010205	12,205	46
Hurricane River-Frontal Lake Superior	40202010206	7,190	27
Mosquito River-Frontal Lake Superior	40202010204	3,534	13

LOCAL CLIMATE:

Avg. Temperature: 41°F (99%); range (7° - 77°F)

Annual Precipitation: 31 in. (58%); 33 in. (27%)

Average Seasonal Snowfall Depth: 170 in. (61%); 150 in. (29%)

Average Frost-Free Days: 110 (44%); 115 (23%); 100 (17%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (48%)

501-1000 yrs. (17%)

301-500 yrs. (9%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (1%)

Class II – Medium Departure (40%)

Class III – High Departure (54%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (79%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (15%)

FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 17%

LTA Ownership:

State Land: 0%

Federal Land: 74%

Private/Other Land: 26%

LTA #: 212Re06

LTA NAME: Pine River Patterned Wetland

BRIEF DESCRIPTION: Lake plain of fine soils. Aspen and pine forests dominant.

ACRES: 36,167 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine clay and silt (80%)

Bedrock: Burnt Bluff Group (36%); Manistique Group (20%); Cabot Head Shale (11%); Stonington Formation (11%); Manitoulin Dolomite (9%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (76%); bedrock-controlled ground moraine (13%)

Landforms: Nearly level plains; rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Pickford-Ontonagon-Bergland (38%); Rudyard-Pickford-Ontonagon (35%); Rock Outcrop-Posen-East Lake (9%)

Surface Texture: Silty clay loam (73%); very cobbly fine sandy loam (9%)

Particle Size Class: Fine (73%); loamy-skeletal (9%)

Drainage Class: Poorly drained (80%)

Infiltration Rate: Very slow (73%); moderate (10%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (77%); Cedar Swamp (11%)

2001 Dominant (IFMAP): Aspen Association (25%); Pines (22%); Lowland Coniferous Forest (15%); Lowland Shrub (12%); Mixed Non-Forest Wetland (6%)

Landfire BPS: Boreal White Spruce-Fir-Hardwood Forest – Coastal (38%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (30%); Laurentian-Acadian Northern Pine(-Oak) Forest (9%); Eastern Boreal Floodplain (8%)

HYDROGRAPHY:

Lakes: 0.3% (LTA in open water)

Wetlands (NWI): 32%

Dominant Classes: Forested (25%); scrub-shrub (5%)

Rivers and streams (total mileage): 79.5 mi.

Dominant: Pine River (14.6 mi.); Chub Creek (9.0 mi.); Bear Creek (7.0 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Elmhirst Creek-Pine River	40700020210	10,247	28
Chub Creek	40700020208	7,833	22
Garden Hill Creek-Pine River	40700020211	7,673	21
Bear Creek	40601060601	5,496	15
Trout Lake-Pine River	40700020209	4,322	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (83%)
Average Seasonal Snowfall Depth: 90 in. (91%)
Average Frost-Free Days: 95 (73%); 115 (9%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
301-500 yrs. (33%)
501-1000 yrs. (20%)
201-300 yrs. (16%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (12%)
Class II – Medium Departure (72%)
Class III – High Departure (13%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (76%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (21%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

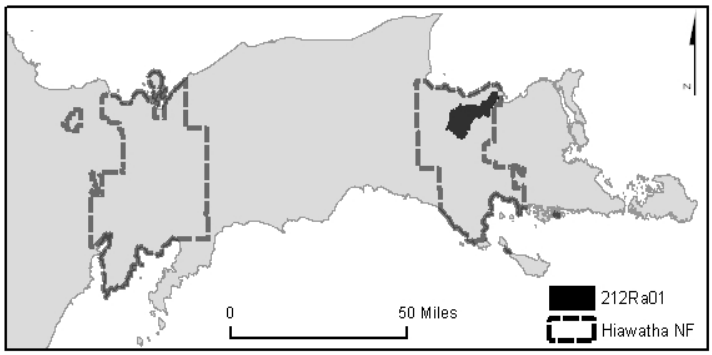
% LTA in HNF Proclamation Boundary: 85%
LTA Ownership:
State Land: 1%
Federal Land: 59%
Private/Other Land: 40%

LTA #: 212Ra01

LTA NAME: Raco Sand Plains North

BRIEF DESCRIPTION: Outwash plains of well-stratified sandy soils. Northern hardwoods and pine forests/barrens dominant.

ACRES: 115,180 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (94%)

Bedrock: Black River Group (38%); Trenton Group (20%); Prairie Du Chien Group (16%); Munising formation (12%); Utica Shale Member (8%); Collingwood Shale Member (5%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (99%); Outwash plain (lowlands) (1%)

Landforms: Outwash deposits of sand and gravel in well-stratified layers; Outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (86%); Rubicon-Croswell-Au Gres (12%); Markey-Dawson-Carbondale (2%)

Surface Texture: Sand (98%)

Particle Size Class: Sandy (98%)

Drainage Class: Very poorly drained (84%), Somewhat poorly drained (12%)

Infiltration Rate: High (98%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Pine Barrens (60%); Jack Pine-Red Pine Forest (25%); White Pine-Red Pine Forest (5%)

2001 Dominant (IFMAP): Pines (45%); Herbaceous Openland (23%); Aspen Association (7%); Upland Shrub/ Low-Density Trees (7%)

Landfire BPS: Great Lakes Pine Barrens (84%); Laurentian Pine-Oak Barrens (4%); Laurentian-Acadian Jack Pine Barrens and Forest (4%)

HYDROGRAPHY:

Lakes: 0.25% (LTA in open water)

Wetlands (NWI): 1%

Dominant Classes: Forested (1%)

Rivers and streams (total mileage): 12.1 mi.

Dominant: Sullivan Creek 2.7 mi; Sweiger Creek 2.6 mi; North Pine River 1.6 mi; White Creek 1.0 mi; McMahen Creek 0.9 mi

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Orrs Creek	40202030205	9353	21
Prey Creek-North Pine River	40700020204	7932	18
East Branch Tahquamenon River	40202020401	6087	14
Naomikong Creek-Frontal Lake Superior	40202030103	5134	12
Waiska Creek-Frontal Lake Superior	40202030105	4473	10
Black Creek	40601060102	4206	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (96%); 130 in. (4%)
Average Frost-Free Days: 110 (98%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: None
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (82%)
11-15 yrs. (4%)
0 – 5 yrs. (2%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0.2%)
Class II – Medium Departure (9%)
Class III – High Departure (86%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity (90%)
FRG III (35 – 200 Year Fire Return Interval, Low and Mixed Severity) (3%)
FRG IV (35 – 200 Year Fire Return Interval, Replacement Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
None.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 1%
Federal Land: 95%
Private/Other Land: 4%

LTA #: 212Rb28

LTA NAME: Raco Sand Plains South

BRIEF DESCRIPTION: Outwash plains of sandy soils. Pine forests dominant.

ACRES: 20,409 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (48%); glacial outwash sand and gravel (44%)
Bedrock: Big Hill Dolomite (29%); Manitoulin Dolomite (19%); Queenston Shale (18%); Stonington Formation (15%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (65%); outwash plain (lowlands) (34%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers; outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Rubicon-Croswell-Au Gres (45%); Markey-Dawson-Carbondale (36%)
Surface Texture: Sand (64%); peat (36%)
Particle Size Class: Sandy (64%); sandy or sandy-skeletal (36%)
Drainage Class: Excessively drained (64%); very poorly drained (36%)
Infiltration Rate: High (64%); high/very slow (36%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Jack Pine-Red Pine Forest (30%); Mixed Conifer Swamp (25%); White Pine-Red Pine Forest (19%); Pine Barrens (12%)
2001 Dominant (IFMAP): Pines (38%); Mixed Non-Forest Wetland (15%); Lowland Shrub (13%); Herbaceous Openland (12%); Lowland Coniferous Forest (11%)
Landfire BPS: Boreal Acid Peatland Systems (34%); Great Lakes Pine Barrens (24%); Laurentian-Acadian Northern Pine(-Oak) Forest (11%); Laurentian-Acadian Jack Pine Barrens and Forest (9%); Laurentian-Acadian Northern Hardwoods Forest (6%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)
Wetlands (NWI): 29%
Dominant Classes: Scrub-shrub (16%); forested (11%)
Rivers and streams (total mileage): 19.4 mi.
Dominant: Pine River (7.7 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Hemlock Creek-Pine River	40700020202	7,373	36
Lumpson Creek-Pine River	40700020201	5,825	29
Black Creek	40601060102	3,297	16

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (66%); 90 in. (34%)
Average Frost-Free Days: 110 (64%); 100 (36%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (21%)
11-15 yrs. (11%)
16-20 yrs. (9%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (54%)
Class III – High Departure (44%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (58%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (25%)
FRG V (>200 Year Fire Return Interval, Any Severity) (14%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 96%
Private/Other Land: 4%

LTA #: 212Rb14

LTA NAME: Ridge-Swale Complex

BRIEF DESCRIPTION: Dune-capped lake plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 36,476 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (75%); glacial outwash sand and gravel (24%)
Bedrock: Stonington Formation (54%); Utica Shale Member (41%)

LANDFORMS:

Dominant Landform Pattern(s): Dune-capped lake plain (46%); lake plain (39%)
Landforms: Sandy lake-bed deposits interspersed with wind-worked sand bars or dunes; nearly level plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (78%); Tawas-Kalkaska-Carbondale (7%)
Surface Texture: Peat (78%); sand (14%)
Particle Size Class: Sandy or sandy-skeletal (85%)
Drainage Class: Very poorly drained (86%)
Infiltration Rate: High/very slow (85%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (32%); Hemlock-White Pine Forest (16%); Shrub Swamp/Emergent Marsh (12%); Spruce-Fir-Cedar Forest (7%); White Pine-Red Pine Forest (7%); Hemlock-Yellow Birch Forest (5%); Sugar Maple-Hemlock Forest (5%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (35%); Upland Mixed Forest (13%); Pines (10%); Lowland Shrub (10%); Mixed Non-Forest Wetland (7%); Lowland Deciduous Forest (7%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (34%); Boreal Acid Peatland Systems (31%); Boreal White Spruce-Fir-Hardwood Forest – Inland (13%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (9%)

HYDROGRAPHY:

Lakes: 0.6% (LTA in open water)
Wetlands (NWI): 61%
Dominant Classes: Forested (48%); scrub-shrub (9%)
Rivers and streams (total mileage): 24.4 mi.
Dominant: Bills Creek (5.0 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Bills Creek-Whitefish River	40301110107	10,796	30
Ogontz River	40301120208	8,997	25
Little Black Creek-Sturgeon River	40301120205	8,046	22
Mormon River-Sturgeon River	40301120206	4,478	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79%)
Annual Precipitation: 31 in. (86%)
Average Seasonal Snowfall Depth: 70 in. (88%)
Average Frost-Free Days: 100 (78%); 110 (14%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
201-300 yrs. (11%)
301-500 yrs. (11%)
151-200 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (90%)
Class III – High Departure (8%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (50%)
FRG V (>200 Year Fire Return Interval, Any Severity) (36%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (9%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Sturgeon River
Scenic: 5.5 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 93%
Private/Other Land: 7%

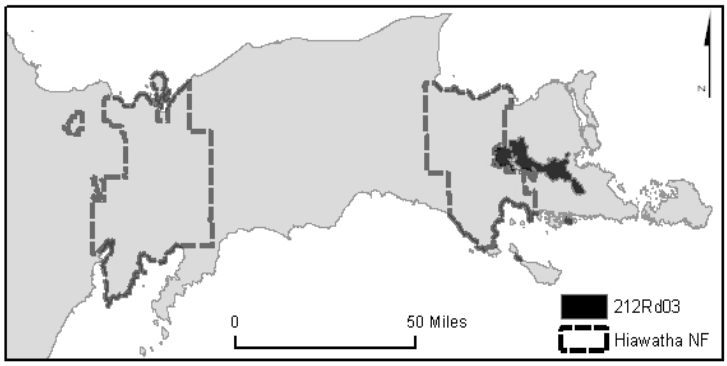
LTA #: 212Rd03

LTA NAME: Rudyard Clay Plain

BRIEF DESCRIPTION: Lake plains of fine soils. Forage crops and non-tilled herbaceous vegetation dominant.

ACRES: 75,136 acres

ECOLOGICAL LANDTYPES: See Appendix



GEOLOGY:

Surficial: Lacustrine clay and silt (91%)

Bedrock: Stonington Formation (34%); Big Hill Dolomite (16%); Utica Shale Member (10%); Queenston Shale (10%); Manitoulin Dolomite (8%); Trenton Group (7%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (98%)

Landforms: Nearly level plains

SOIL COMPLEXES:

Map Units: Rudyard-Pickford-Ontonagon (85%)

Surface Texture: Silty clay loam (90%)

Particle Size Class: Fine (90%)

Drainage Class: Poorly drained (98%)

Infiltration Rate: Very slow (90%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (70%); Spruce-Fir-Cedar Forest (22%)

2001 Dominant (IFMAP): Forage Crops/Non-tilled herbaceous (42%); Aspen Association (13%); Lowland Shrub (11%); Herbaceous Openland (8%); Pines (6%)

Landfire BPS: Boreal White Spruce-Fir-Hardwood Forest – Coastal (53%); Laurentian – Acadian Northern Pine (-Oak) Forest (28%); Eastern Boreal Floodplain (7%)

HYDROGRAPHY:

Lakes: 0.1% (LTA in open water)

Wetlands (NWI): 11%

Dominant Classes: Forested (6%); scrub-shrub (4%); emergent (1%)

Rivers and streams (total mileage): 114.1 mi.

Dominant: Munuscong River (19.4 mi.); East Branch Munuscong River (13.3 mi.); Pine River (6.3 mi.); Bear Creek (5.6 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Middle Munuscong River	40700010204	10,323	13
North Pine River	40700020206	8,853	11
Trout Lake-Pine River	40700020209	8,536	11
Upper Munuscong River	40700010202	8,441	11

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (90%); 31 in. (10%)
Average Seasonal Snowfall Depth: 70 in. (9%); 90 in. (62%); 110 in. (29%)
Average Frost-Free Days: 95 (90%); 135 (9%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
301 – 500 yrs. (31%)
201 – 300 yrs. (15%)
501 – 1000 yrs. (11%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (7%)
Class II – Medium Departure (9%)
Class III – High Departure (32%)
Fire Regime Group:
FRG V (> 200 Year Fire Return Interval, Any Severity) (59%)
FRG III (35 – 200 Year Fire Return Interval, Low and Mixed Severity) (37%)
FRG IV (35 – 200 Year Fire Return Interval, Replacement Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 3%
LTA Ownership:
State Land: 2%
Federal Land: 1%
Private/Other Land: 97%

LTA #: 212Rd08

LTA NAME: Sand/Clay Transition - North

BRIEF DESCRIPTION: Lake and outwash plains of sandy soils. Pine forests and lowland shrub vegetation dominant.

ACRES: 34,413 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (37%); lacustrine clay and silt (36%); glacial outwash sand and gravel (16%)

Bedrock: Black River Group (51%); Trenton Group (22%); Prairie Du Chien Group (11%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (50%); outwash plain (28%); outwash plain (lowlands) (13%)

Landforms: Nearly level plains; outwash deposits of sand and gravel in well-stratified layers; outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Rubicon-Croswell-Au Gres (24%); Markey-Dawson-Carbondale (23%); Pickford-Gogomain-Biscuit (21%); Rudyard-Pickford-Ontonagon (20%)

Surface Texture: Sand (37%); peat (23%); very fine sandy loam (21%)

Particle Size Class: Sandy (37%); sandy or sandy-skeletal (23%); coarse-loamy over clayey (21%)

Drainage Class: Poorly drained (41%); excessively drained (37%); very poorly drained (22%)

Infiltration Rate: High (37%); high/very slow (23%); moderate/very slow (21%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (31%); Spruce-Fir-Cedar Forest (30%); Sugar Maple-Hemlock Forest (24%)

2001 Dominant (IFMAP): Pines (22%); Lowland Shrub (21%); Aspen Association (19%); Lowland Coniferous Forest (12%); Mixed Non-Forest Wetland (10%)

Landfire BPS: Boreal White Spruce-Fir-Hardwood Forest – Coastal (21%); Boreal Acid Peatland Systems (21%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (17%); Great Lakes Pine Barrens (10%); Boreal White Spruce-Fir-Hardwood Forest – Inland (8%); Laurentian-Acadian Floodplain Systems (5%)

HYDROGRAPHY:

Lakes: 2% (LTA in open water)

Wetlands (NWI): 37%

Dominant Classes: Scrub-shrub (21%); forested (13%)

Rivers and streams (total mileage): 70.1 mi.

Dominant: West Branch Waiska River (14.2 mi.); Clear Creek (5.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
West Branch Waiska River	40202030203	18,632	54
Waiska Creek-Frontal Lake Superior	40202030105	6,203	18

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)

Annual Precipitation: 33 in. (100%)

Average Seasonal Snowfall Depth: 110 in. (94%)

Average Frost-Free Days: 110 (37%); 100 (23%); 135 (21%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

301-500 yrs. (15%)

501-1000 yrs. (10%)

201-300 yrs. (10%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (9%)

Class II – Medium Departure (54%)

Class III – High Departure (33%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (43%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (41%)

FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (10%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 65%

LTA Ownership:

State Land: 10%

Federal Land: 58%

Private/Other Land: 32%

LTA #: 212Rb29

LTA NAME: Sand/clay Transition South

BRIEF DESCRIPTION: Lowland outwash plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 38,723 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (41%); lacustrine clay and silt (30%); peat and muck (28%)

Bedrock: Big Hill Dolomite (26%); Trenton Group (24%); Utica Shale Member (19%); Stonington Formation (14%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (53%); lake plain (24%); outwash plain (23%)

Landforms: Outwash deposits found over old lake plains; nearly level plains; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (55%); Pickford-Gogomain-Biscuit (20%); Rubicon-Croswell-Au Gres (11%)

Surface Texture: Peat (55%); very fine sandy loam (20%); sand (16%)

Particle Size Class: Sandy or sandy-skeletal (55%); coarse-loamy over clayey (20%); sandy (16%)

Drainage Class: Very poorly drained (55%); poorly drained (29%)

Infiltration Rate: High/very slow (55%); moderate/very slow (20%); high (16%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (55%); Spruce-Fir-Cedar Forest (23%); Cedar Swamp (13%)

2001 Dominant (IFMAP): Lowland Coniferous Forest (27%); Lowland Shrub (21%); Mixed Non-Forest Wetland (19%); Pines (18%)

Landfire BPS: Boreal Acid Peatland Systems (52%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (21%); Boreal White Spruce-Fir-Hardwood Forest – Inland (10%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)

Wetlands (NWI): 61%

Dominant Classes: Forested (33%); scrub-shrub (26%)

Rivers and streams (total mileage): 77.2 mi.

Dominant: North Pine River (11.9 mi.); Black Creek (8.3 mi.); Pine River (6.9 mi.); Biscuit Creek (5.5 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
North Pine River	40700020206	8,023	21
Trout Lake-Pine River	40700020209	7,828	20
Black Creek	40601060102	6,140	16
Prey Creek-North Pine River	40700020204	6,061	16
Biscuit Creek	40700020203	5,091	13

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)

Annual Precipitation: 33 in. (100%)

Average Seasonal Snowfall Depth: 110 in. (86%)

Average Frost-Free Days: 100 (55%); 135 (20%); 110 (16%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

61-70 yrs. (22%)

71-80 yrs. (11%)

151-200 yrs. (10%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (0%)

Class II – Medium Departure (94%)

Class III – High Departure (4%)

Fire Regime Group:

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (64%)

FRG V (>200 Year Fire Return Interval, Any Severity) (26%)

FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (8%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 93%

LTA Ownership:

State Land: 3%

Federal Land: 69%

Private/Other Land: 28%

LTA #: 212Rb11

LTA NAME: Shingleton Fen

BRIEF DESCRIPTION: Outwash plains of sandy or sandy-skeletal soils. Lowland coniferous and pine forests dominant.

ACRES: 41,488 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Peat and muck (55%); glacial outwash sand and gravel (32%)
Bedrock: Black River Group (58%); Trenton Group (32%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (67%); outwash plain (20%)
Landforms: Outwash deposits found over old lake plains; outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (69%); Tawas-Kalkaska-Carbondale (14%)
Surface Texture: Peat (69%); sand (15%)
Particle Size Class: Sandy or sandy-skeletal (83%)
Drainage Class: Very poorly drained (83%)
Infiltration Rate: High/very slow (83%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (68%); Hemlock-White Pine Forest (9%); Beech-Sugar Maple-Hemlock Forest (9%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (31%); Pines (23%); Lowland Shrub (18%); Mixed Non-Forest Wetland (7%); Northern Hardwood Association (7%)
Landfire BPS: Boreal Acid Peatland Systems (47%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (25%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (13%)

HYDROGRAPHY:

Lakes: 0.5% (LTA in open water)
Wetlands (NWI): 77%
Dominant Classes: Forested (60%); scrub-shrub (15%)
Rivers and streams (total mileage): 50.6 mi.
Dominant: North Branch Stutts Creek (21.4 mi.); South Branch Stutts Creek (7.3 mi.); Beaver Creek 96.1 mi.); Middle Branch Stutts Creek (5.0 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Beaver Creek-North Branch Stutts Creek	40601060401	11,302	27
North Branch Stutts Creek	40601060403	10,682	26
South Branch Stutts Creek	40601060404	7,837	19
Middle Branch Stutts Creek	40601060402	7,195	17

LOCAL CLIMATE:

Avg. Temperature: 41°F (83%); range (5° - 79°F)
Annual Precipitation: 33 in. (93%)
Average Seasonal Snowfall Depth: 150 in. (50%); 130 in. (31%)
Average Frost-Free Days: 100 (69%); 110 (15%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
61-70 yrs. (14%)
71-80 yrs. (10%)
81-90 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (90%)
Class III – High Departure (9%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (63%)
FRG V (>200 Year Fire Return Interval, Any Severity) (31%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 86%
LTA Ownership:
State Land: 13%
Federal Land: 84%
Private/Other Land: 3%

LTA #: 212Re12

LTA NAME: Silver Creek Uplands

BRIEF DESCRIPTION: Outwash plains of sandy soils. Northern hardwood and pine forests dominant.

ACRES: 22,761 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (89%)
Bedrock: Engadine Group (86%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (73%); outwash plain (lowlands) (17%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers; outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (43%); Kalkaska (41%)
Surface Texture: Sand (97%)
Particle Size Class: Sandy (92%)
Drainage Class: Excessively drained (43%); somewhat excessively drained (41%)
Infiltration Rate: High (84%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (77%); Mixed Conifer Swamp (12%)
2001 Dominant (IFMAP): Northern Hardwood Association (25%); Pines (19%); Aspen Association (13%); Herbaceous Openland (10%); Lowland Coniferous Forest (9%); Lowland Shrub (9%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (36%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (22%); Laurentian Pine-Oak Barrens (16%); Boreal White Spruce-Fir-Hardwood Forest – Inland (10%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)
Wetlands (NWI): 19%
    Dominant Classes: Forested (14%); scrub-shrub (4%)
Rivers and streams (total mileage): 31.4 mi.
    Dominant: Little Brevoort River (10.9 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Cut River-Frontal Lake Michigan	40601070101	8,379	37
Bervoort River	40601070104	7,663	34
Little Bervoort River	40601070103	6,047	27

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (9° - 77°F)
Annual Precipitation: 31 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 110 (84%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (37%)
501-1000 yrs. (20%)
301-500 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (10%)
Class II – Medium Departure (35%)
Class III – High Departure (50%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (71%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (16%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (9%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 24%
LTA Ownership:
State Land: 55%
Federal Land: 23%
Private/Other Land: 22%

LTA #: 212Re24

LTA NAME: South Branch Carp Wetlands

BRIEF DESCRIPTION: Lowland outwash plains of varying soils. Lowland coniferous forests dominant.

ACRES: 21,628 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Peat and muck (52%); lacustrine sand and gravel (36%)
Bedrock: Engadine Group (89%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (87%)
Landforms: Outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Tawas-Lupton-Carbondale-Au Gres (70%); Wallace-Roscommon-Finch (16%)
Surface Texture: Muck (70%); sand (29%)
Particle Size Class: Undefined (86%); sandy (14%)
Drainage Class: Very poorly drained (70%); poorly drained (16%)
Infiltration Rate: High/very slow (86%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (73%); Beech-Sugar Maple-Hemlock Forest (16%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (47%); Lowland Shrub (18%); Mixed Non-Forest Wetland (10%); Pines (8%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (52%); Boreal Acid Peatland Systems (29%)

HYDROGRAPHY:

Lakes: 1% (LTA in open water)
Wetlands (NWI): 75%
Dominant Classes: Forested (58%); scrub-shrub (15%)
Rivers and streams (total mileage): 15.0 mi.
Dominant: South Branch Carp River (5.7 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
South Branch Carp River	40700020102	10,065	47
Ozark Creek-Carp River	40700020101	3,482	16
Little Bervoort River	40601070103	2,533	12
Davenport Creek-Frontal Lake Michigan	40601070105	2,451	11
Cut River-Frontal Lake Michigan	40601070101	2,137	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 33 in. (52%); 31 in. (48%)
Average Seasonal Snowfall Depth: 70 in. (61%); 90 in. (39%)
Average Frost-Free Days: 100 (86%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (22%)
>1000 yrs. (20%)
301-500 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (3%)
Class II – Medium Departure (86%)
Class III – High Departure (10%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (59%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (31%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (8%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 9%
LTA Ownership:
State Land: 97%
Federal Land: 0%
Private/Other Land: 3%

LTA #: 212Re07

LTA NAME: St. Martin Bay Wetlands

BRIEF DESCRIPTION: Lake plains of sandy over loamy soils. Lowland coniferous forests dominant.

ACRES: 18,814 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (37%); thin to discontinuous glacial till over bedrock (34%); peat and muck (16%)

Bedrock: Engadine Group (77%); Manistique Group (12%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (55%); bedrock-controlled ground moraine (36%)

Landforms: Nearly level plains; rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Brevort (31%); Wallace-Roscommon-Finch (29%); Tawas-Lupton-Carbondale-Au Gres (13%); Pickford-Ontonagon-Bergland (11%)

Surface Texture: Sand (42%); loamy sand (31%); muck (13%)

Particle Size Class: Undefined (46%); sandy over loamy (31%); sandy (11%)

Drainage Class: Poorly drained (71%); very poorly drained (13%)

Infiltration Rate: High/very slow (42%); moderate (31%); high (16%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (53%); Cedar Swamp (19%); Spruce-Fir-Cedar Forest (15%); Aspen-Birch Forest (6%)

2001 Dominant (IFMAP): Lowland Coniferous Forest (45%); Pines (17%); Lowland Shrub (16%); Mixed Non-Forest Wetland (8%)

Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (59%); Boreal White Spruce-Fir-Hardwood Forest – Coastal (22%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)

Wetlands (NWI): 68%

Dominant Classes: Forested (60%); scrub-shrub (6%)

Rivers and streams (total mileage): 13.3 mi.

Dominant: Nunns Creek (4.8 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Law Creek-Frontal Lake Huron	40700020304	7,935	42
Nunns Creek	40700020305	5,887	31
Martineau Creek-Frontal Lake Huron	40700020306	2,227	12
Garden Hill Creek-Pine River	40700020211	2,206	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (79%); 43°F (21%); range (7° - 79°F)
Annual Precipitation: 31 in. (99%)
Average Seasonal Snowfall Depth: 70 in. (97%)
Average Frost-Free Days: 100 (42%); 105 (31%); 110 (11%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (48%)
301-500 yrs. (21%)
>1000 yrs. (18%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (6%)
Class II – Medium Departure (88%)
Class III – High Departure (3%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (97%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (2%)
Indeterminate Fire Regime Characteristics (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Carp River
Recreational: 2.2 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 86%
LTA Ownership:
State Land: 0%
Federal Land: 65%
Private/Other Land: 35%

LTA #: 212Ra19

LTA NAME: Steuben Outwash

BRIEF DESCRIPTION: Disintegration moraine of sandy soils. Pine forests and herbaceous openlands dominant.

ACRES: 27,200 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (93%)

Bedrock: Queenston Shale (32%); Stonington Formation (25%); Big Hill Dolomite (18%); Utica Shale Member (13%)

LANDFORMS:

Dominant Landform Pattern(s): Disintegration moraine (53%); pitted outwash plain (27%)

Landforms: Randomly oriented chaotic mounds and pits; outwash plains marked by many irregular depressions such as kettles and shallow pits

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (79%); Kalkaska (17%)

Surface Texture: Sand (95%)

Particle Size Class: Sandy (96%)

Drainage Class: Excessively drained (79%); somewhat excessively drained (17%)

Infiltration Rate: High (96%)

VEGETATIVE COMMUNITIES:

1800 Dominant: White Pine-Red Pine Forest (38%); Jack Pine-Red Pine Forest (26%); Hemlock-White Pine Forest (9%); Beech-Sugar Maple-Hemlock Forest (8%); Mixed Conifer Swamp (5%); Hemlock-Yellow Birch Forest (5%)

2001 Dominant (IFMAP): Pines (37%); Herbaceous Openland (14%); Upland Mixed Forest (10%); Northern Hardwood Association (9%); Water (6%); Lowland Coniferous Forest (6%)

Landfire BPS: Laurentian-Acadian Northern Pine(-Oak) Forest (32%); Great Lakes Pine Barrens (25%); Laurentian-Acadian Northern Hardwoods Forest (9%); Boreal Acid Peatland Systems (8%); Open Water (7%)

HYDROGRAPHY:

Lakes: 5% (LTA in open water)

Wetlands (NWI): 11%

Dominant Classes: Forested (7%); scrub shrub (2%)

Rivers and streams (total mileage): 23.5 mi.

Dominant: Carr Creek (5.1 mi.

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Big Murphy Creek	40601060505	16,201	60
Archambeau Creek-Fishdam River	40301120107	5,921	22
Delias Run-Indian River	40601060503	3,888	14

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 70 in. (50%); 90 in. (44%)
Average Frost-Free Days: 110 (95%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress; competition or lack of seed source
Mean Fire Return Interval (Fire-Free Period):
11-15 yrs. (17%)
6-10 yrs. (16%)
16-20 yrs. (13%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (4%)
Class II – Medium Departure (19%)
Class III – High Departure (68%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (60%);
FRG V (>200 Year Fire Return Interval, Any Severity) (17%);
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (11%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Indian River
Recreational: 2.3 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 93%
Private/Other Land: 7%

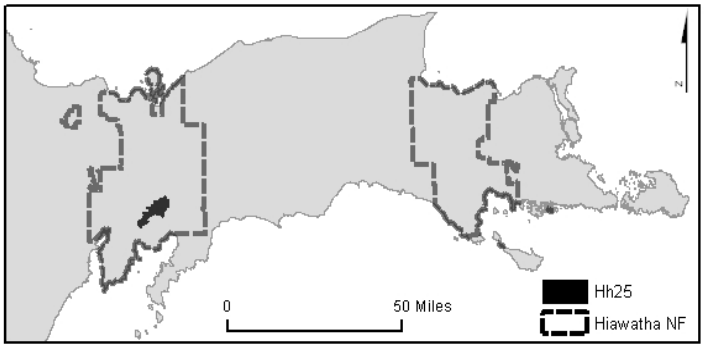
LTA #: Hh25

LTA NAME: Steuben Outwash Moraine

BRIEF DESCRIPTION: Outwash plains with sandy or sandy-skeletal soils. Northern hardwoods dominant.

ACRES: 16,687 acres

ECOLOGICAL LANDTYPES: See Appendix



GEOLOGY:

Surficial: Glacial outwash sand and gravel (71%); Lacustrine sand and gravel (27%)
Bedrock: Big Hill dolomite (40%); Queenston shale (37%); Manitoulin Dolomite (21%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (46%); Disintegration moraine (21%); Dune – capped Lake Plain (20%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers; Randomly oriented chaotic mounds and pits; Sandy lake-bed deposits interspersed with wind-worked sand bars or dunes

SOIL COMPLEXES:

Map Units: Kalkaska (76%); Markey-Dawson-Carbondale (24%)
Surface Texture: sand (76%); peat (24%)
Particle Size Class: Sandy (76%); Sandy or sandy-skeletal (24%)
Drainage Class: Somewhat excessively drained (76%); Very poorly drained (24%)
Infiltration Rate: High (76%); High/Very Slow (24%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Veech-sugar maple- hemlock forest (29%); Spruce-fir-cedar (23%); Hemlock-white pine forest (18%); Mixed conifer swamp (13%)
2001 Dominant (IFMAP): Northern Hardwood Association (21%); Upland Mixed Forest (20%); Pines (20%); Lowland Coniferous Forest (13%); Aspen Association (12%)
Landfire BPS: Laurentian-Acadian Northen Pine (-Oak) Forest (19%); Boreal White Spruce-Fir-Hardwood Forest – Inland (17%); Laurentian – Acadian Alkaline Conifer – Hardwood Swamp (16%); Laurentian – Acadian Pine – Hemlock- Hardwood Forest (15%); Boreal Acid Peatland Systems (12%); Laurentian – Acadian Northern Hardwoods Forest (12%)

HYDROGRAPHY:

Lakes: 2% (LTA in open water)
Wetlands (NWI): 25%
Dominant Classes: Forested (19%); Scrub-shrub (4%); Emergent (1%)
Rivers and streams (total mileage): 17.2

Dominant: Eighteenmile Creek (5.5 mi): Sturgeon River (3.9 mi); Southwest Branch Fishdam River (2.8 mi); Mormon Creek (2.4 mi); Mink Creek (1.4 mi)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Mormon River-Sturgeon River	40301120206	5328	32
Eighteenmile Creek	40301120204	4796	29
Fishdam River	40301120108	3553	21
Archambeau Creek-Fishdam River	40301120107	1920	12

LOCAL CLIMATE:

Avg. Temperature: 41°F; range: (7°F - 79°F)
Annual Precipitation: 31 (47%); 33 (53%)
Average Seasonal Snowfall Depth: 70 in. (100%)
Average Frost-Free Days: 110 (76%); 100 (24%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress; Competition or lack of seed source
Mean Fire Return Interval (Fire-Free Period):
> 1000 yrs. (12%)
301 – 500 yrs (9%)
201 – 300 yrs (9%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (63%)
Class III – High Departure (33%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (45%)
FRG V (>200 Year Fire Return Interval, Any Severity) (38%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (8%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Eightmile Creek
Scenic River: 0.2 mi
Sturgeon River
Recreational River: 1.5 mi
Scenic River: 2.4 mi

OTHER NOTES:

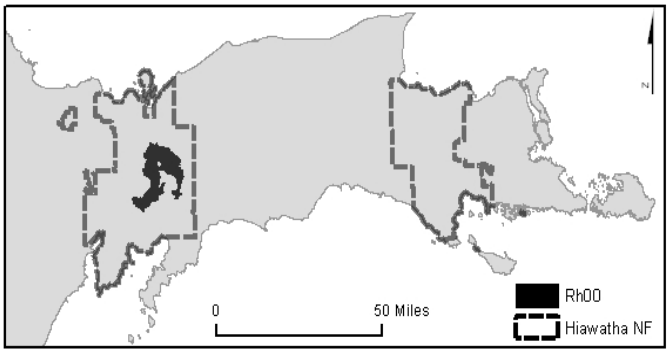
% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 94%
Private/Other Land: 6%

LTA #: Rh00

LTA NAME: Steuben Segment

BRIEF DESCRIPTION: Disintegration moraines and outwash moraines with sandy soils. Northern hardwoods dominant.

ACRES: 71,467 acres



ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (80%); End moraines (10%); Coarse textured glacial till (5%)

Bedrock: Trenton Group (30%); Utica Shale member (16%); Big hill dolomite (14%); Black River Group (12%); Queenston Shale (11%); Stonington Formation (10%)

LANDFORMS:

Dominant Landform Pattern(s): Disintegration Moraine (74%); Outwash plain (24%)

Landforms: Randomly oriented chaotic mounds and pits; Outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Kalkaska (65%); Karlin-Kalkaska-Blue Lake (15%); Tawas-Kalkaska-Carbondale (12%)

Surface Texture: Sand (69%); sandy loam (15%); muck (12%)

Particle Size Class: sandy (84%); sandy or sandy skeletal (16%)

Drainage Class: Somewhat excessively drained (80%); Very poorly drained (16%)

Infiltration Rate: High (84%); High/very slow (16%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech – sugar maple – hemlock forest (64%); Mixed conifer swamp (12%); Lake/River (7%)

2001 Dominant (IFMAP): Northern Hardwood Association (43%); Lowland Coniferous Forest (11%); Upland Mixed Forest (10%); Aspen Association (8%)

Landfire BPS: Laurentian – Acadian Northern Hardwoods Forest (51%); Boreal Acid Peatland Systems (13%); Boreal White Spruce-Fir-Hardwood Forest –Inland (8%)

HYDROGRAPHY:

Lakes: 7% (LTA in open water)

Wetlands (NWI): 17%

Dominant Classes: Forested (12%); Scrub-shrub (3%)

Rivers and streams (total mileage): 58.1 mi

Dominant: Indian River (14.5 mi); Little Indian River (6.2 mi); Eighteenmile Creek (4.0 mi); Johnson Creek (2.9 ni); Deer Creek (2.9 mi); Grassy Creek (2.3 mi)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Delias Run-Indian River	40601060503	29929	42
Eighteenmile Creek	40301120204	10512	15
Dana Lake-Sturgeon River	40301120203	8644	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (99%); range: (5°F - 79°F)
Annual Precipitation: 33 (100%)
Average Seasonal Snowfall Depth: 70 in. (29%); 90 in. (25%); 110 in. (42%)
Average Frost-Free Days: 110 (69%); 115 (15%); 105 (12%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (43%)
501 – 1000 (11%)
Water (6%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (3%)
Class II – Medium Departure (33%)
Class III – High Departure (56%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (64%)
FRG III (35- 200 Year Fire Return Interval, Replacement Severity) (22%) Water (6%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Deer Creek
Recreational River: 0.1 mi
Indian River
Recreational River: 14.5 mi
Scenic River: 2.5 mi
Little Indian River
Recreational River: 0.6 mi
Squaw Creek
Scenic River: 0.3 mi

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 84%
Private/Other Land: 16%

LTA #: 212Rc18

LTA NAME: Stonington Till Plain

BRIEF DESCRIPTION: Bedrock-controlled ground moraines of loamy soils. Lowland coniferous forests dominant.

ACRES: 69,108 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (81%)
Bedrock: Big Hill Dolomite (45%); Stonington Formation (42%)

LANDFORMS:

Dominant Landform Pattern(s): Bedrock-controlled ground moraine (88%)
Landforms: Rock outcrops and small outwash filled channels

SOIL COMPLEXES:

Map Units: Tacoosh-Nahma-Charlevoix-Cathro (83%)
Surface Texture: Muck (83%)
Particle Size Class: Loamy (83%)
Drainage Class: Very poorly drained (98%)
Infiltration Rate: Moderate/very slow (83%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Spruce-Fir-Cedar Forest (42%); Mixed Conifer Swamp (21%); Cedar Swamp (17%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (34%); Lowland Deciduous Forest (23%); Upland Mixed Forest (9%); Forage Crops/Non-Tilled Herbaceous (6%); Aspen Association (6%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (53%); Boreal White Spruce-Fir-Hardwood Forest - Coastal (25%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (3%)

HYDROGRAPHY:

Lakes: 0.5% (LTA in open water)
Wetlands (NWI): 63%
Dominant Classes: Forested (57%); scrub-shrub (5%)
Rivers and streams (total mileage): 56.3 mi.
Dominant: Squaw Creek (4.8 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Big River-Frontal Big Bay De Noc	40301120209	37,736	55
Squaw Creek	40301110209	15,128	22
Ogontz River	40301120208	8,646	13
Black George Crk.-Frntl Little Bay De Noc	40301110208	7,567	11

LOCAL CLIMATE:

Avg. Temperature: 43°F (68%); 41°F (32%); range (7° - 79°F)
Annual Precipitation: 29 in. (73%); 31 in. (27%)
Average Seasonal Snowfall Depth: 50 in. (100%)
Average Frost-Free Days: 105 (83%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (47%)
301-500 yrs. (18%)
>1000 yrs. (16%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (2%)
Class II – Medium Departure (83%)
Class III – High Departure (0%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (86%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (2%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 39%
Private/Other Land: 61%

LTA #: 212Ra25

LTA NAME: Strongs Rd Outwash Hills

BRIEF DESCRIPTION: Outwash plains of sandy soils. Pine forests dominant.

ACRES: 2,544 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (91%)
Bedrock: Utica Shale Member (80%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (100%)
Landforms: Outwash deposits of sand and gravel in well-stratified layers

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (93%)
Surface Texture: Sand (93%)
Particle Size Class: Sandy (93%)
Drainage Class: Excessively drained (93%)
Infiltration Rate: High (93%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Hemlock-White Pine Forest (66%); Jack Pine-Red Pine Forest (33%)
2001 Dominant (IFMAP): Pines (57%); Upland Shrub/Low-Density Trees (11%); Herbaceous Openland (11%)
Landfire BPS: Laurentian Pine-Oak Barrens (63%); Laurentian-Acadian Jack Pine Barrens and Forest (11%); Great Lakes Pine Barrens (11%)

HYDROGRAPHY:

Lakes: 0.2% (LTA in open water)
Wetlands (NWI): 0.8%
Dominant Classes: Forested (0.4%); emergent (0.2%)
Rivers and streams (total mileage): 0 mi.
Dominant: N/A
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Lumpson Creek-Pine River	40700020201	2,373	93

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (100%)
Average Frost-Free Days: 110 (93%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Fire
Mean Fire Return Interval (Fire-Free Period):
0-5 yrs. (51%)
6-10 yrs. (31%)
11-15 yrs. (9%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (14%)
Class III – High Departure (86%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (89%)
FRG V (>200 Year Fire Return Interval, Any Severity) (6%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (3%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 100%
Private/Other Land: 0%

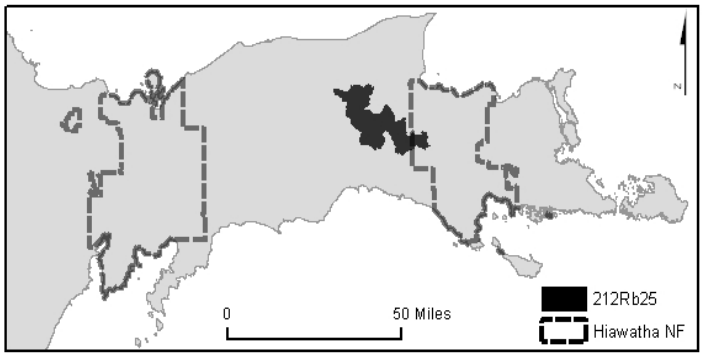
LTA #: 212Rb25

LTA NAME: Tahquamenon River Drainage

BRIEF DESCRIPTION: Lake and lowland outwash plains of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 121,748 acres

ECOLOGICAL LANDTYPES: See Appendix



GEOLOGY:

Surficial: Peat and muck (80%); lacustrine sand and gravel (10%)
Bedrock: Stonington Formation (21%); Utica Shale Member (21%); Trenton Group (16%); Big Hill Dolomite (13%); Queenston Shale (7%); Manitoulin Dolomite (7%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (57%); outwash plain (lowlands) (24%)
Landforms: Nearly level plains; outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Tawas-Lupton-Carbondale-Au Gres (61%); Markey-Dawson-Carbondale (23%); Carbondale-Brimley-Bohemian (12%)
Surface Texture: Muck (62%); peat (23%); very fine sandy loam (12%)
Particle Size Class: Undefined (61%); sandy or sandy-skeletal (23%); fine-loamy (12%)
Drainage Class: Very poorly drained (84%); somewhat poorly drained (12%)
Infiltration Rate: High/very slow (84%); slow (12%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (66%); Muskeg/Bog (10%); Spruce-Fir-Cedar Forest (7%); Shrub swamp / emergent marsh (6%)
2001 Dominant (IFMAP): Loland Coniferous Forest (41%); Lowland Shrub (26%); Mixed Non-Forest Wetland (21%); Aspen Association (3%); Pines (3%)
Landfire BPS: Boreal Acid Peatland Systems (53%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (40%)

HYDROGRAPHY:

Lakes: 0.26% (LTA in open water)
Wetlands (NWI): 87%
Dominant Classes: Forested (56%); scrub-shrub (30%)
Rivers and streams (total mileage): 162.2 mi.
Dominant: Hendrie River (23.9 mi.); Tahquamenon River (17.1 mi.); Auger Creek (12.9); East Branch Sage River (9.0 mi.); Murphy Creek (8.8 mi.); West Branch Hendrie River (6.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
East Branch Sage River	40202020203	12308	10
Upper Hendrie River	40202020301	12054	10
Sage River	40202020204	11638	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)
Annual Precipitation: 33 in. (76%); 31 in. (24%)
Average Seasonal Snowfall Depth: 110 in. (92%)
Average Frost-Free Days: 100 (84%); 110 (12%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
61-70 yrs. (18%)
51-60 yrs. (14%)
>1000 yrs (14%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (97%)
Class III – High Departure (2%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (54%)
FRG V (> 200 Year Fire Return Interval, Any Severity) (42%)
FRG IV (35 -200 Year Fire Return Interval, Replacement Severity) (4%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
None.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 7%
LTA Ownership:
State Land: 66%
Federal Land: 7%
Private/Other Land: 27%

LTA #: 212Tb20

LTA NAME: Trenary Till Plain

BRIEF DESCRIPTION: Fluted, recessional and regular ground moraines of loamy soils. Northern hardwood and lowland deciduous forests dominant.

ACRES: 198,790 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Medium-textured glacial till (91%)

Bedrock: Trenton Group (47%); Black River Group (31%); Trempealeau Formation (11%)

LANDFORMS:

Dominant Landform Pattern(s): Fluted ground moraine (41%); ground moraine (33%); recessional moraine (14%)

Landforms: Till plains consisting of calcareous, loamy glacial till with parallel grooves and ridges; extensive fairly even layers of till; sandy and gravelly outwash and loamy lodgment till

SOIL COMPLEXES:

Map Units: Onaway-Emmet-Cathro (62%); Trenary-Onaway-Charlevoix (29%)

Surface Texture: Fine sandy loam (62%); sandy loam (30%)

Particle Size Class: Loamy (62%); coarse-loamy (30%)

Drainage Class: Very poorly drained (63%); somewhat poorly drained (29%)

Infiltration Rate: Moderate (91%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Sugar Maple-Hemlock Forest (47%); Mixed Conifer Swamp (31%); Beech-Sugar Maple-Hemlock Forest (10%)

2001 Dominant (IFMAP): Northern Hardwood Association (30%); Lowland Deciduous Forest (15%); Lowland Coniferous Forest (15%); Aspen Association (12%); Forage Crops/Non-Tilled Herbaceous (7%); Upland Mixed Forest (7%)

Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest – Hemlock (42%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (35%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (8%)

HYDROGRAPHY:

Lakes: 0.1% (LTA in open water)

Wetlands (NWI): 36%

Dominant Classes: Forested (35%); scrub-shrub (1%)

Rivers and streams (total mileage): 220.8 mi.

Dominant: West Branch Whitefish River (25.6 mi.); Werners Creek (15.3 mi.); Dexter

Creek (13.1 mi.); Rapid River (11.9 mi.); Scott Creek (11.6 mi.); Johnson Creek (11.6 mi.); Slapneck Creek (9.2 mi.); Deer Creek (8.5 mi.); Sucker Creek (5.8 mi.); McMaster Creek (5.8 mi.); Deadhorse Creek (5.7 mi.); Black Creek (5.5 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
West Branch Whitefish River	40301110103	32,332	16
Werners Creek	40301110102	27,002	14
Baker Creek-Rapid River	40301110203	24,121	12
Sucker Creek-W. Branch Whitefish River	40301110101	22,272	11
Slapneck Creek	40202010110	19,874	10
Johnson Creek	40202010109	18,896	10

LOCAL CLIMATE:

Avg. Temperature: 41°F (94%); range (3° - 79°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 110 in. (29%); 90 in. (24%); 70 in. (21%); 130 in. (14%)
Average Frost-Free Days: 105 (62%); 120 (29%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (57%)
501-1000 yrs. (21%)
301-500 yrs. (8%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (43%)
Class II – Medium Departure (48%)
Class III – High Departure (5%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (90%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (8%)
Indeterminate Fire Regime Characteristics (1%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Whitefish River
Scenic: 2.5 mi.
Study: 26.2 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 19%
LTA Ownership:
State Land: 25%
Federal Land: 7%
Private/Other Land: 68%

LTA #: 212Rd06

LTA NAME: Waiska Bay Lowlands

BRIEF DESCRIPTION: Beach ridges and dunes transitioning to lake plains of sandy or sandy-skeletal soils. Lowland shrub and aspen forests dominant.

ACRES: 18,900 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine clay and silt (60%); lacustrine sand and gravel (28%)
Bedrock: Jacobsville Sandstone (64%); Munising Formation (33%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (56%); beach ridges and dunes (44%)
Landforms: Nearly level plains; ridges of beach or dune material occurring singly or as one of a series of approximately parallel deposits

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (50%); Pickford-Gogomain-Biscuit (37%)
Surface Texture: Peat (50%); very fine sandy loam (37%)
Particle Size Class: Sandy or sandy-skeletal (50%); coarse-loamy over clayey (37%)
Drainage Class: Poorly drained (50%); very poorly drained (50%)
Infiltration Rate: High/very slow (50%); moderate/very slow (37%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (53%); Spruce-Fir-Cedar Forest (25%); Hemlock-White Pine Forest (12%)
2001 Dominant (IFMAP): Lowland Shrub (24%); Aspen Association (21%); Pines (16%); Lowland Coniferous Forest (11%); Mixed Non-Forest Wetland (10%)
Landfire BPS: Boreal White Spruce-Fir-Hardwood Forest – Coastal (41%); Boreal Acid Peatland Systems (26%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (17%)

HYDROGRAPHY:

Lakes: 0.3% (LTA in open water)
Wetlands (NWI): 36%
Dominant Classes: Forested (18%); scrub-shrub (17%)
Rivers and streams (total mileage): 32.2 mi.
Dominant: Waiska River (5.5 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Waiska Creek-Frontal Lake Superior	40202030105	7,719	41
East Branch Waiska River	40202030204	6,442	34
Hickler Creek-Waiska River	40202030206	3,208	17

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 77°F)
Annual Precipitation: 33 in. (99%)
Average Seasonal Snowfall Depth: 110 in. (100%)
Average Frost-Free Days: 100 (50%); 135 (37%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
301-500 yrs. (18%)
201-300 yrs. (17%)
151-200 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (4%)
Class II – Medium Departure (46%)
Class III – High Departure (41%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (51%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (34%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (10%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 2%
LTA Ownership:
State Land: 23%
Federal Land: 1%
Private/Other Land: 76%

LTA #: 212Tb22

LTA NAME: Watson Till/Wetland Complex

BRIEF DESCRIPTION: Drumlinized and regular ground moraines of loamy soils. Lowland coniferous and northern hardwood forests dominant.

ACRES: 577,529 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Medium-textured glacial till (76%); peat and muck (8%)

Bedrock: Trempealeau Formation (30%); Trenton Group (24%); Black River Group (16%); Prairie Du Chien Group (14%)

LANDFORMS:

Dominant Landform Pattern(s): Drumlinized ground moraine (44%); ground moraine (42%)

Landforms: Elongated oval hills of compact, loamy glacial till generally oriented in a northeast-southwest direction; extensive fairly even layers of till

SOIL COMPLEXES:

Map Units: Onaway-Emmet-Cathro (65%); Trenary-Onaway-Charlevoix (27%)

Surface Texture: Fine sandy loam (67%); sandy loam (27%)

Particle Size Class: Loamy (65%); coarse-loamy (30%)

Drainage Class: Very poorly drained (70%); somewhat poorly drained (27%)

Infiltration Rate: Moderate (92%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (39%); Sugar Maple-Hemlock Forest (16%); Beech-Sugar Maple-Hemlock Forest (14%); Hemlock-White Pine Forest (7%); Sugar Maple-Basswood Forest (7%)

2001 Dominant (IFMAP): Lowland Coniferous Forest (27%); Northern Hardwood Association (20%); Lowland Deciduous Forest (12%); Aspen Association (8%); Upland Mixed Forest (8%)

Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (36%); Boreal White Spruce-Fir-Hardwood Forest – Inland (14%); Laurentian-Acadian Northern Hardwoods Forest – Hemlock (12%); Boreal Acid Peatland Systems (12%); Laurentian-Acadian Northern Hardwoods Forest (11%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)

Wetlands (NWI): 45%

Dominant Classes: Forested (41%); scrub-shrub (4%)

Rivers and streams (total mileage): 505.6 mi.

Dominant (>10 mi.): Escanaba River (35.2 mi.); Ford River (20.7 mi.); Sturgeon River (17.0 mi.); Fortyseven Mile Creek (16.4 mi.); Cedar River (15.8 mi.); Days River (14.2 mi.); Little Cedar River (13.8 mi.); East Branch Sturgeon River (13.5 mi.); Hunters Brook (12.9 mi.); West Branch Escanaba River (12.3 mi.); Rapid River (11.9 mi.); Tacoosh River (11.6 mi.); Little West Branch Escanaba River (11.5 mi.)

Major Subwatersheds (≥10%): None

LOCAL CLIMATE:

Avg. Temperature: 41°F (80%); range (1° - 81°F)

Annual Precipitation: 31 in. (61%); 33 in. (33%)

Average Seasonal Snowfall Depth: 70 in. (87%)

Average Frost-Free Days: 105 (69%); 120 (27%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (26%)

501-1000 yrs. (24%)

301-500 yrs. (14%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (28%)

Class II – Medium Departure (55%)

Class III – High Departure (10%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (75%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (22%)

FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 2%

LTA Ownership:

State Land: 25%

Federal Land: 0%

Private/Other Land: 75%

LTA #: 212Rb06

LTA NAME: West Branch Manistique

BRIEF DESCRIPTION: Lowland outwash plains of sandy or sandy-skeletal soils. Lowland shrubs and mixed non-forested wetlands dominant.

ACRES: 51,390 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (83%)

Bedrock: Black River Group (54%); Trenton Group (22%); Prairie Du Chien Group (13%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (97%)

Landforms: Outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (98%)

Surface Texture: Peat (98%)

Particle Size Class: Sandy or sandy-skeletal (98%)

Drainage Class: Very poorly drained (98%)

Infiltration Rate: High/very slow (98%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (53%); Hemlock-White Pine Forest (10%); Beech-Sugar Maple-Hemlock Forest (10%); Spruce-Fir-Cedar Forest (10%)

2001 Dominant (IFMAP): Lowland Shrub (29%); Mixed Non-Forest Wetland (20%); Lowland Coniferous Forest (18%); Pines (17%)

Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (43%); Boreal Acid Peatland Systems (37%)

HYDROGRAPHY:

Lakes: 0.3% (LTA in open water)

Wetlands (NWI): 82%

Dominant Classes: Forested (64%); scrub-shrub (14%)

Rivers and streams (total mileage): 100.7 mi.

Dominant: West Branch Manistique River (31.7 mi.); Hickey Creek (21.1 mi.); Creighton River (11.0 mi.); Prairie Creek (6.5 mi.); Section Nineteen Creek (6.1 mi.); Star Creek (5.8 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Sec. Nineteen Creek-W. Branch Manistique	40601060409	23,361	45
Creighton River	40601060407	7,528	15
Hickey Creek	40601060410	6,756	13
Prairie Creek-Hickey Creek	40601060408	5,760	11

LOCAL CLIMATE:

Avg. Temperature: 41°F (79%); 43°F (21%); range (7° - 79°F)
Annual Precipitation: 33 in. (99%)
Average Seasonal Snowfall Depth: 150 in. (50%); 130 in. (20%); 110 in. (13%)
Average Frost-Free Days: 100 (98%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
501-1000 yrs. (14%)
>1000 yrs. (11%)
301-500 yrs. (10%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (93%)
Class III – High Departure (6%)
Fire Regime Group:
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (44%)
FRG V (>200 Year Fire Return Interval, Any Severity) (44%)
FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (8%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 8%
LTA Ownership:
State Land: 72%
Federal Land: 16%
Private/Other Land: 12%

LTA #: 212Ra12

LTA NAME: Wetmore Outwash

BRIEF DESCRIPTION: Pitted outwash plain of sandy soils. Northern hardwoods dominant.

ACRES: 24,550 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (97%)
Bedrock: Prairie Du Chien Group (95%)

LANDFORMS:

Dominant Landform Pattern(s): Pitted outwash plain (85%)
Landforms: Outwash plains marked by many irregular depressions such as kettles and shallow pits

SOIL COMPLEXES:

Map Units: Kalkaska (94%)
Surface Texture: Sand (98%)
Particle Size Class: Sandy (98%)
Drainage Class: Somewhat excessively drained (94%)
Infiltration Rate: High (98%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Beech-Sugar Maple-Hemlock Forest (75%); Hemlock-White Pine Forest (16%)
2001 Dominant (IFMAP): Northern Hardwood Association (49%); Pines (16%); Upland Mixed Forest (11%); Aspen Association (5%)
Landfire BPS: Laurentian-Acadian Northern Hardwoods Forest (61%); Great Lakes Pine Barrens (11%); Laurentian-Acadian Northern Pine (-Oak) Forest (7%)

HYDROGRAPHY:

Lakes: 3% (LTA in open water)
Wetlands (NWI): 7%
Dominant Classes: Forested (3%); scrub-shrub (2%)
Rivers and streams (total mileage): 6.5 mi.
Dominant: Sturgeon River (2.0 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Camp R Creek-Sturgeon River	40301120202	7,054	29
Squaw Creek-Indian River	40601060501	5,858	24
Little Indian River	40601060502	4,059	17
Beaver Creek-N. Branch Stutts Creek	40601060401	2,763	11

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 35 in. (60%); 33 in. (40%)
Average Seasonal Snowfall Depth: 150 in. (68%); 130 in. (27%)
Average Frost-Free Days: 110 (98%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
>1000 yrs. (57%)
501-1000 yrs. (7%)
6-10 yrs. (6%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (15%)
Class III – High Departure (79%)
Fire Regime Group:
FRG V (>200 Year Fire Return Interval, Any Severity) (70%)
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (14%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (7%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Sturgeon River
Study: 2.3 mi.
Indian River
Scenic: 1.8 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 71%
Private/Other Land: 29%

LTA #: 212Ra18

LTA NAME: Wetmore Outwash II

BRIEF DESCRIPTION: Pitted outwash plain of sandy soils. Pine forests dominant.

ACRES: 32,308 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (87%)
Bedrock: Black River Group (64%); Prairie Du Chien Group (35%)

LANDFORMS:

Dominant Landform Pattern(s): Pitted outwash plain (62%); outwash fan (20%)
Landforms: Outwash plains marked by many irregular depressions such as kettles and shallow pits; fan-shaped areas of outwash

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (63%); Kalkaska (19%)
Surface Texture: Sand (82%)
Particle Size Class: Sandy (82%)
Drainage Class: Excessively drained (63%); very poorly drained (19%)
Infiltration Rate: High (82%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Hemlock-White Pine Forest (33%); White Pine-Red Pine Forest (27%); Beech-Sugar Maple-Hemlock Forest (13%)
2001 Dominant (IFMAP): Pines (41%); Upland Mixed Forest (11%); Northern Hardwood Association (9%); Upland Shrub/Low-Density Trees (9%); Lowland Coniferous Forest (8%); Herbaceous Openland (6%)
Landfire BPS: Great Lakes Pine Barrens (40%); Laurentian-Acadian Northern Pine(-Oak) Forest (16%); Boreal Acid Peatland Systems (13%); Laurentian-Acadian Pine-Hemlock-Hardwood Forest (11%)

HYDROGRAPHY:

Lakes: 3% (LTA in open water)
Wetlands (NWI): 14%
Dominant Classes: Forested (9%); scrub-shrub (3%)
Rivers and streams (total mileage): 24.2 mi.
Dominant: Indian River (6.1 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Squaw Creek-Indian River	40601060501	7,537	23
Camp R Creek-Sturgeon River	40301120202	7,249	22
Little Indian River	40601060502	5,112	16
Beaver Creek-North Branch Stutts Creel	40601060401	3,967	12

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (7° - 79°F)
Annual Precipitation: 33 in. (74%); 35 in. (26%)
Average Seasonal Snowfall Depth: 150 in. (39%); 110 in. (36%); 130 (25%)
Average Frost-Free Days: 110 (82%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Fire
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (25%)
11-15 yrs. (14%)
16-20 yrs. (9%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (3%)
Class II – Medium Departure (28%)
Class III – High Departure (61%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (58%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (20%)
FRG V (>200 Year Fire Return Interval, Any Severity) (13%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Indian River
Scenic: 6.7 mi.
Sturgeon River
Study: 5.7 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 72%
Private/Other Land: 28%

LTA #: 212Te21

LTA NAME: Whitefish-Au Train Lowland

BRIEF DESCRIPTION: Glacial drainage channel of sandy soils. Lowland coniferous and deciduous forests dominant.

ACRES: 49,643 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Thin to discontinuous glacial till over bedrock (61%); peat and muck (20%)
Bedrock: Trenton Group (89%)

LANDFORMS:

Dominant Landform Pattern(s): Glacial drainage channel (93%)
Landforms: Large drainage channels consisting of a series of outwash or bedrock terraces with a current stream channel in the bottom

SOIL COMPLEXES:

Map Units: Summerville-Kiva (58%); Markey-Dawson-Carbondale (23%)
Surface Texture: Sandy loam (58%); peat (23%)
Particle Size Class: Sandy (71%); sandy or sandy-skeletal (23%)
Drainage Class: Well drained (58%); very poorly drained (26%)
Infiltration Rate: High (71%); high/very slow (23%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swam (42%); Sugar Maple-Hemlock Forest (27%); Spruce-Fir-Cedar Forest (12%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (25%); Lowland Deciduous Forest (14%); Northern Hardwood Association (14%); Aspen Association (8%); Upland Mixed Forest (7%); Pines (6%); Lowland Shrub (6%)
Landfire BPS: Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (42%); Laurentian-Acadian Northern Hardwoods Forest – Hemlock (25%); Boreal White Spruce-Fir-Hardwood Forest – Inland (9%); Boreal Acid Peatland Systems (7%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)
Wetlands (NWI): 47%
Dominant Classes: Forested (43%); scrub-shrub (3%)
Rivers and streams (total mileage): 98.7 mi.

Dominant: East Branch Whitefish River (15.8 mi.); Whitefish River (9.1 mi.); Chippeny Creek (8.6 mi.); Rapid River (7.9 mi); West Branch Whitefish River (5.3 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Bills Creek-Whitefish River	40301110107	15,263	31
East Branch Whitefish River	40301110105	12,696	26
Town of Rapid R.-Frntl Little Bay De Noc	40301110204	6,459	13

LOCAL CLIMATE:

Avg. Temperature: 43°F (68%); 41°F (32%); range (5° - 79°F)

Annual Precipitation: 33 in. (62%); 31 in. (32%)

Average Seasonal Snowfall Depth: 70 in. (60%); 90 in. (14%); 50 in. (12%)

Average Frost-Free Days: 135 (58%); 100 (23%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Wind/Weather/Stress

Mean Fire Return Interval (Fire-Free Period):

>1000 yrs. (32%)

501-1000 yrs. (27%)

301-500 yrs. (18%)

FRCC Departure (departure from historic vegetation composition and structure):

Class I – Low Departure (9%)

Class II – Medium Departure (75%)

Class III – High Departure (5%)

Fire Regime Group:

FRG V (>200 Year Fire Return Interval, Any Severity) (84%)

FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (9%)

FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (2%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:

Whitefish River

Recreational: 4.9 mi.

Scenic: 37.1 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 89%

LTA Ownership:

State Land: 6%

Federal Land: 41%

Private/Other Land: 53%

LTA #: 212Rc19

LTA NAME: Whitefish Delta

BRIEF DESCRIPTION: Lake plains of sandy soils. Pine forests dominant.

ACRES: 14,764 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Glacial outwash sand and gravel (94%)
Bedrock: Collingwood Shale Member (43%); Utica Shale Member (30%); Trenton Group (27%)

LANDFORMS:

Dominant Landform Pattern(s): Lake plain (84%)
Landforms: Nearly level plains

SOIL COMPLEXES:

Map Units: Rubicon-Rousseau (89%)
Surface Texture: Sand (89%)
Particle Size Class: Sandy (93%)
Drainage Class: Excessively drained (89%)
Infiltration Rate: High (93%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Pine Barrens (67%); White Pine-Red Pine Forest (14%)
2001 Dominant (IFMAP): Pines (46%); Herbaceous Openland (11%); Upland Shrub/Low-Density Trees (10%); Lowland Coniferous Forest (7%); Upland Mixed Forest (6%)
Landfire BPS: Great Lakes Pine Barrens (69%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (12%)

HYDROGRAPHY:

Lakes: 0.3% (LTA in open water)
Wetlands (NWI): 13%
Dominant Classes: Forested (9%); scrub-shrub (4%)
Rivers and streams (total mileage): 14.2 mi.
Dominant: Squaw Creek (2.1 mi.)
Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Black George Crk.-Frntl. Little Bay De Noc	40301110208	6,931	47
Bills Creek-Whitefish River	40301110107	3,504	24
Squaw Creek	40301110209	2,934	20

LOCAL CLIMATE:

Avg. Temperature: 41°F (85%); range (7° - 79°F)
Annual Precipitation: 29 in. (48%); 31 in. (47%)
Average Seasonal Snowfall Depth: 50 in. (71%); 70 in. (29%)
Average Frost-Free Days: 110 (89%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Fire
Mean Fire Return Interval (Fire-Free Period):
6-10 yrs. (64%)
11-15 yrs. (8%)
>1000 yrs. (6%)
FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (1%)
Class II – Medium Departure (83%)
Class III – High Departure (7%)
Fire Regime Group:
FRG I (<= 35 Year Fire Return Interval, Low and Mixed Severity) (76%)
FRG V (>200 Year Fire Return Interval, Any Severity) (15%)
FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (6%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers:
Whitefish River
Scenic: 0.2 mi.

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 100%
LTA Ownership:
State Land: 0%
Federal Land: 80%
Private/Other Land: 20%

LTA #: 212Rb26

LTA NAME: Wilwin Wetlands

BRIEF DESCRIPTION: Lowland outwash plain of sandy or sandy-skeletal soils. Lowland coniferous forests dominant.

ACRES: 15,590 acres

ECOLOGICAL LANDTYPES: See Appendix

GEOLOGY:

Surficial: Lacustrine sand and gravel (63%); peat and muck (31%)
Bedrock: Manitoulin Dolomite (43%); Queenston Shale (23%); Cabot Head Shale (17%)

LANDFORMS:

Dominant Landform Pattern(s): Outwash plain (lowlands) (91%)
Landforms: Outwash deposits found over old lake plains

SOIL COMPLEXES:

Map Units: Markey-Dawson-Carbondale (84%)
Surface Texture: Peat (84%)
Particle Size Class: Sandy or sandy-skeletal (84%)
Drainage Class: Very poorly drained (84%)
Infiltration Rate: High/very slow (84%)

VEGETATIVE COMMUNITIES:

1800 Dominant: Mixed Conifer Swamp (63%); White Pine-Red Pine Forest (11%); Shrub Swamp/Emergent Marsh (7%)
2001 Dominant (IFMAP): Lowland Coniferous Forest (41%); Mixed Non-Forest Wetland (28%); Lowland Shrub (18%)
Landfire BPS: Boreal Acid Peatland Systems (70%); Laurentian-Acadian Alkaline Conifer-Hardwood Swamp (22%)

HYDROGRAPHY:

Lakes: 0.4% (LTA in open water)
Wetlands (NWI): 81%
Dominant Classes: Forested (55%); scrub-shrub (22%)
Rivers and streams (total mileage): 1.5 mi.
Dominant: Naugle Creek (0.5 mi.)

Major Subwatersheds (≥10%):

Subwatershed	HUC(6th level)	Acres in LTA	% of LTA
Upper Hendrie River	40202020301	8,247	53
Ozark Creek-Carp River	40700020101	4,246	27
South Branch Hendrie River	40202020302	2,234	14

LOCAL CLIMATE:

Avg. Temperature: 41°F (100%); range (5° - 77°F)
Annual Precipitation: 33 in. (100%)
Average Seasonal Snowfall Depth: 90 in. (67%); 110 in. (33%)
Average Frost-Free Days: 100 (84%)

LANDFIRE:

Dominant Natural Disturbance Mechanism: Insects/Disease; Wind/Weather/Stress
Mean Fire Return Interval (Fire-Free Period):
- 51-60 yrs. (24%)
- 61-70 yrs. (22%)
- 71-80 yrs. (8%)

FRCC Departure (departure from historic vegetation composition and structure):
Class I – Low Departure (0%)
Class II – Medium Departure (95%)
Class III – High Departure (4%)
Fire Regime Group:
- FRG III (35-200 Year Fire Return Interval, Low and Mixed Severity) (70%)
- FRG V (>200 Year Fire Return Interval, Any Severity) (20%)
- FRG IV (35-200 Year Fire Return Interval, Replacement Severity) (5%)

SPECIAL AREA STATUS:

Wild and Scenic Rivers: None

OTHER NOTES:

% LTA in HNF Proclamation Boundary: 83%
LTA Ownership:
- State Land: 17%
- Federal Land: 78%
- Private/Other Land: 5%

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Appendix A

Ecological Land Type groups (ELT)
and
Ecological Land Type Phases (ELTP)
in each LTA

Tables A-1 and A-2 describe ecological landtypes (ELT) and ecological landtype phases (ELTP). The top ten ELT and ELTP for each **Land Type Association** are listed in the following pages.

Table A- 1. A brief description of the Ecological Landtype (ELT) groups in Hiawatha National Forest (Hiawatha National Forest Plan EIS Appendix I Ecological Processes 2007, Table I-1).

ELT group	Description
10/20	Sandy outwash plains typically supporting jack pine or red pine. Fire is the major disturbance factor in these xeric ecosystems.
30	Sandy outwash plains and morainal areas with a slightly higher productivity than ELT group 10, 20. ELT 30 typically supports red pine, mixed conifer, hemlock, or low volume hardwood stands.
40/50/90	Glacial moraines, pitted outwash, bedrock controlled moraines and areas where bedrock is close to the surface. Typically these land-types support northern hardwoods and have better developed soils. Soil texture ranges from sand to silty clay loam.
60	Land-type 60 encompasses the transition zone between dry uplands to true wetlands. ELT 60 often occurs at the edge of the outwash plains, but includes the somewhat poorly drained soils on the clay plain landform. Vegetation is highly variable on ELT 60. In the historic condition the 10/20, 30 and 60 ELTs were the heart of the white pine-hemlock forest type.
70A	ELT 70A includes mineral soil wetlands supporting vegetation indicative of acid soil conditions. Black spruce, tamarack and hemlock are common species on this land-type. Approximately 32,478 acres are forested, 4,238 acres are non-forested.
70B	ELT 70B consists of mineral soil wetlands supporting vegetation indicative of higher pH (>5.5) or basic soil conditions. Cedar, mixed swamp conifers, tamarack and balsam fir are typical of the vegetation on this land-type. Approximately 61,647 acres are forested, 23,961 acres are non-forested.
80A	ELT 80A consists of forested wetlands with more than 12 inches of wet, acidic (pH<5.5) organic soil. The forested areas of this ELT (80AF) typically supports black spruce stands and to a lesser extent tamarack stands. Approximately 16,678 acres are forested, 27,566 acres are non-forested.
80B	ELT 80B consists of forested wetlands with more than 12 inches of wet, basic (pH > 5.5) organic soil. The forested areas of this ELT (ELT 80BF) typically supports northern white cedar stands, mixed swamp conifer stands and to a lesser extent tamarack and black ash stands. Approximately 125,303 acres are forested, 33,497 acres are non-forested.
PIT	PIT consists of sand and gravel pits, made land, and some developed areas.
W	W consists of water features.

Table A-2. A brief description of Ecological Landtype Phases (ELTP) in Hiawatha National Forest (Hiawatha National Forest Ecological Landtype Phase Key 2007, Hiawatha National Forest Ecological Classification System Field Guide 2007). For details on mapping codes please refer to Hiawatha National Forest Ecological Landtype Phase Key version 8.5, (2007).

Ecological Landtype	General Description	Soil Group	Vegetation	Distinguishing Criteria	Valid Mapping Codes
ELT 10 uplands	Poorly developed, nutrient poor soil, no water table indicators within 1 meter (40 inches)	Udipsamments, some Entic Haplorthods	Poor, mostly pine with scattered hardwoods, sparse herbs	Outwash plains, jack pine and bearberry present; water table below 1 meter (40 inches)	10, 12, 13, 14, 15, 132, 134, 152, 154 Add slope class
ELT 20 uplands	Weakly developed soil, no water table indicators within 1 meter (40 inches)	Entic Haplorthods	Poor, mostly pine with some hardwoods, sparse herbs	No Bh horizon, usually a Bw, sometimes a Bs, woodsfern or sugar maple absent; water Table below 1 meter (40 inches)	20, 22, 23, 24, 25, 27, 232, 234, 252, 253, 254, 272, 274 Add slope class
ELT 30 uplands	Moderately rich sites, moderatetly developed soils (thin Bhs horizon), no water table indicators within 1 meter (40 inches)	Typic Haplorthods	Moderately rich, mixed conifer and hardwood with woodsfern	Developed horizonation, thin Bhs horizon, woodsfern and sugar maple present, sugar maple not dominant; water Table below 1 meter (40 inches)	30, 32, 33, 34, 35, 37, 332, 334, 352, 354, 372, 374 Add slope class
ELT 40 uplands	Productive sites, well developed soils (rich sands, thick Bhs horizon), no water table indicators within 1 meter (40 inches)	Typic Haplorthods	Rich, northern hardwoods with woodsfern	Well developed soil profile, thick Bhs horizon, woodsfern and sugar maple abundant; water Table below 1 meter (40 inches)	40, 42, 43, 44, 45, 46, 47, 48, 432, 434, 452, 454, 462, 464, 472, 474 Add slope class Add 8 to indicate dissected terrain (4648, 458)
ELT 50 Uplands	Sandstone bedrock within 2 meters (80 inches), no water table indicators within 1 meter (40 inches)	Typic Haplorthods, Alfic Haplorthods, Alfic Fragiorthods	Rich, northern hardwoods with woodsfern.	Sandstone bedrock within 2 meters (80 inches). Water Table below 1 meter (40 inches). Some sandstone outcrops.	50, 51, 53, 54, 55, 59, 514, 519, 534, 539, 554, 559, 594, 5194, 5394, 5594 Add slope class Add 8 to indicate dissected terrain
ELT 60 uplands	Water table 30 to 100 cm (12 to 40 inches)	Haplorthods	Variable, transition between upland and wetland	Seasonal water table indicators are at depths of 30 to 100 cm (12 to 40 inches)	61, 62, 64, 651, 652, 654, 671, 672, 674, 691, 692, 694, 6591, 6592, 6594, 6791, 6792, 6794

Ecological Landtype	General Description	Soil Group	Vegetation	Distinguishing Criteria	Valid Mapping Codes
ELT 70 mineral soil wetlands	Water table less than 30 cm (12 inches) and less than 30 cm (12 inches) of organic matter (peat or muck)	Aquepts, Aquents, Aquods, some Histic epipedon	Variable, divided into four subgroups based on an acid – basic and forested – nonforested dichotomy	Seasonal water table indicators are at depths less than 30 cm (12 inches); organic horizon is < 30 cm (12 inches) thick	70AO, 79AO, 70BO, 71BO, 72BO, 73BO, 74BO, 79BO, 791BO, 792BO, 793BO, 794BO, 70AF, 71AF, 751AF, 759AF, 75AF, 791AF, 7591AF, 70BF, 71BF, 72BF, 75BF, 77BF, 79BF, 751BF, 759BF, 779BF, 791BF, 792BF, 7591BF, 7791BF
ELT 80 organic soil wetlands	Water table less than 30 cm (12 inches) and more than 30 cm (12 inches) of organic matter.	Histosols, some histic epipedon	Variable, divided into four subgroups based on an acid – basic and forested – nonforested dichotomy	Organic horizon is > 30 cm (12 inches) thick; water table or water table indicators at depths less than 30 cm (12 inches)	80AF, 81AF, 80AO, 81AO, 82AO, 80BF, 81BF, 82BF, 83BF, 80BO, 81BO
ELT 90 uplands	Limestone bedrock within 2 meters (80 inches), no water table indicators within 1 meter (40 inches)	Haplorthods and Lithic Haplorthods	Rich, hardwood or aspen-conifer, moderately rich herbs	Limestone bedrock within 2 meters (80 inches). Water table or water table indicators deeper than 1 meter (40 inches); limestone outcrops and alvars	90, 93, 94, 95, 97, 99, 934, 953, 954, 959, 973, 974, 979, 993, 9534, 9593, 9734, 9793 Add slope class

Table A-3. Slope class can be added to the end of ELTP codes in ELTs 10 thru 50 and 90 (Hiawatha National Forest Ecological Landtype Phase Key 2007).

Slope %	Slope Class
0	A
0-6	B
6-15	C
15-30	D
30-50	E
>50	F

Au Train Bedrock-Controlled Moraines

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	6,387	56
60	2,415	21
80B	2,056	18
30	194	2
80A	159	1
70A	128	1
70B	84	1
W	16	0
PIT	4	0
10,20	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	9,076	79
59B	346	3
82BF	221	2
59D	219	2
354B	136	1
40B/59B	130	1
4648C/53948C	124	1
464B/5394B	108	1
81BF/791BF	104	1
6974/779BF	101	1

Au Train Lake/Christmas/Shotpoint/Munising

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	2,033	8
40,50,90	1,891	7
80B	1,793	7
60	1,088	4
W	972	4
80A	882	3
70B	133	0
70A	131	0
30	91	0
PIT	61	0
10	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	5,613	21
W	850	3
82BF	514	2
61	302	1
22B	271	1
24B	222	1
82AO	136	1
61/70AF	135	1
83BF	102	0
64	99	0

Beaton Lake Outwash

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	5,608	82
70B	369	5
W	342	5
80B	170	2
60	163	2
80A	152	2
40,50,90	52	1
30	16	0
70A	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
20B	1,524	22
20C	1,393	20
22B	1,240	18
24B	793	12
20D	611	9
72BF/71BO/81BF	368	5
W	342	5
62	143	2
82BF	74	1
80BO	54	1

Betchler Marsh

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80A	2,740	41
70A	2,186	33
60	949	14
80B	520	8
W	117	2
70B	105	2
10,20	96	1
30	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
81AO	1,513	23
70AF/82AO	1,346	20
80BF	109	2
61/70AF	96	1
W	79	1
61/70AF/24C	73	1
PVT	32	0
70AF/81AO	26	0
22C/24B	25	0
70AF	15	0

Big Hole Moraines

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	1,205	3
60	800	2
80B	152	0
70B	132	0
50	85	0
30	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	1,491	3
53B	238	1
51D	154	0
51B	110	0
53C	107	0
82BF	99	0
51C	83	0
50B	29	0
55B	27	0
77BF	15	0

Boot Lake Plain

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	5,956	53
30	2,658	23
W	710	6
80B	698	6
60	558	5
80A	326	3
70B	300	3
10,20	111	1
70A	26	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
40B	3,130	28
30B	1,166	10
44B	1,023	9
34B	918	8
W	710	6
42B	636	6
40C	419	4
32B	409	4
40D	369	3
62	285	3

Brevoort-Pte. au Chenes

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	7,544	49
60	2,230	15
80A	1,943	13
80B	1,106	7
70B	821	5
40,50,90	578	4
30	297	2
W	26	0
70A	14	0
PIT	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
20E	2,226	15
PVT	1,287	8
22D/82AO/71AF	1,095	7
24C/71AF/81BF	956	6
82AO/24C	847	6
61/71BF	807	5
81AF/24C	727	5
20E/24C/81AF	625	4
82BF	492	3
20D	425	3

Caffey Wetlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	1,509	7
80A	416	2
40,50,90	301	1
70A	88	0
60	58	0
70B	47	0
10,20	20	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Camp Eleven Ridge-Swale

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	10,214	27
10,20	6,838	18
80A	4,793	13
60	4,690	12
70B	3,896	10
70A	3,076	8
30	2,703	7
40,50,90	546	1
W	65	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
82BF	2,941	8
80BO	2,483	7
70AF	2,108	6
81BF	2,059	5
81BO	1,844	5
62	1,589	4
80AO	1,405	4
20B	1,343	4
22C	1,234	3
81AO	1,228	3

Carp/Ozark Creek Wetlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	3,141	17
40,50,90	3,099	16
80B	1,898	10
70B	1,051	6
W	960	5
30	907	5
10,20	683	4
70A	601	3
80A	364	2
PIT	14	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Clay/Morainal Transition

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	127	1
60	11	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Cooks Moraine

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	16,897	74
60	1,978	9
30	1,102	5
10,20	866	4
70B	425	2
80A	145	1
PIT	139	1
70A	130	1
80B	76	0
20	9	0
W	4	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	20,070	88
30B	546	2
40B	113	0
45C	104	0
40C	99	0
454B	98	0
62	84	0
45B	75	0
64/62	64	0
452B	62	0

Cooks Outwash

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	6,739	34
30	888	5
60	693	4
40,50,90	533	3
80A	442	2
70A	288	1
70B	163	1
W	90	0
20	55	0
80B	50	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	9,325	48
354B/751BF	416	2
352B	55	0
82BF	16	0
452B	15	0
332B/751BF	12	0
24B/70BF	12	0
71BF/672	10	0
332C	9	0
334B/751BF	9	0

East Tahquamenon Drainage

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	10,345	27
60	2,930	8
80A	1,835	5
70B	1,342	3
70A	631	2
10,20	397	1
30	319	1
40,50,90	267	1
40	15	0
W	3	0
PIT	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
70AF/81AO/24C	282	1
80BF	149	0
61/24C	141	0
70AF	129	0
82BF	73	0
22C	64	0
70AF/81AO	63	0
82AO	52	0
71BF	46	0
PVT	34	0

Fishdam Embayment

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	3,656	32
60	2,129	18
70B	1,062	9
10,20	904	8
30	728	6
70A	521	5
80A	475	4
40,50,90	36	0
W	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
82BF	2,200	19
PVT	933	8
62/73BO	451	4
80BO	449	4
671/77BF	422	4
61/82AO	389	3
80BF	339	3
22B	316	3
30B	288	3
72BF	273	2

Garden Wetlands/Outcrop

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	184	0
80A	177	0
40,50,90	110	0
60	78	0
30	25	0
20	23	0
70B	13	0
80B	13	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	624	1

Gladstone Lake Bluff

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	5,229	21
60	1,519	6
40,50,90	1,404	6
70B	1,157	5
80B	805	3
80A	420	2
20	333	1
70A	307	1
W	37	0
30	19	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	10,905	43
20D	120	0
20C	54	0
81AF	26	0
81BF	26	0
80AF	26	0
70BF	18	0
70AF	17	0
779BF	12	0
24B	11	0

Grand, Au Train, Wood and William Islands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	10,441	75
60	2,010	14
80B	590	4
W	237	2
10,20	108	1
80A	99	1
70A	38	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
598F/468F/81BF	4,343	31
598C/468C/694	1,553	11
464B/5394B	1,511	11
474B/979B	1,502	11
4648C/53948C	1,002	7
694/791BF	530	4
62/71AF	440	3
81BF	430	3
61/62	266	2
598D/468D/81BF	257	2

Haymeadow Buried Moraine

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	8,671	61
80B	1,727	12
30	1,139	8
10,20	744	5
80A	722	5
60	477	3
70A	382	3
70B	228	2
W	93	1

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	1,708	12
42B	1,563	11
40B/46B	1,169	8
40B	946	7
81BF	816	6
45D	772	5
44B	629	4
40C	504	4
82BF	341	2
40D	307	2

Huron Lake Beds

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	3,475	5
80B	2,522	3
60	1,699	2
40,50,90	1,238	2
10,20	374	1
PIT	93	0
30	63	0
W	22	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
82BF	1,875	3
779BF/6794	1,521	2
PVT	1,482	2
62/71AF	375	1
70BF	278	0
474B	277	0
64/71BF	275	0
71BF/64	216	0
81BF	184	0
6794	177	0

Huron Outcrop

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	3,086	75
60	542	13
70B	349	8
80B	84	2
PIT	25	1
80A	16	0
30	13	0
10,20	5	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	1,953	47
979B	766	19
9793C	349	8
674	239	6
9793B	227	6
993B	94	2
6794	91	2
751BF	89	2
974B	58	1
82BF	41	1

Huron Patterned Outcrop

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	269	0
80B	180	0
40,50,90	132	0
60	71	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	259	0

Indian Lake

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Indian River Upland

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	8,198	81
70B	543	5
80B	502	5
60	384	4
70A	297	3
30	92	1
W	83	1
80A	73	1
40,50,90	3	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
20B	3,040	30
22B	1,761	17
24B	1,554	15
20C	934	9
72BF/71BO/81BF	503	5
20B/25B	445	4
81BF	430	4
20D	406	4
70AF	242	2
62/70AF	233	2

Interior Wetlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	4,244	30
60	3,549	25
70B	1,420	10
W	1,191	8
10,20	1,102	8
80A	847	6
30	839	6
40,50,90	736	5
70A	425	3
PIT	3	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
71BF/62	341	2
70BF	315	2
62/71BF	310	2
71BF	264	2
64	250	2
70AF/61	197	1
22B	196	1
80AO	195	1
80AF	185	1
22C	182	1

Isabella Remnant Moraine

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	4,003	30
60	3,605	27
70B	2,060	15
30	1,714	13
10,20	738	6
80B	571	4
70A	373	3
80A	284	2
W	22	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	6,531	49
30C	570	4
62	521	4
71BF	323	2
452B	313	2
34B	278	2
354B	247	2
671/77BF	246	2
354B/77BF	246	2
751BF	159	1

Lake Stella Complex

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80A	5,750	23
80B	4,571	19
40,50,90	3,803	15
60	3,794	15
70A	3,405	14
W	1,410	6
10,20	1,038	4
70B	601	2
30	260	1

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	16,908	69
80BO	970	4
70AF	760	3
82AO	657	3
81BF/71BF	557	2
W	550	2
81BF	424	2
62	387	2
24B	365	1
71AF	320	1

Lake Superior Highlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	7,209	13
30	5,218	10
10,20	3,019	6
60	1,727	3
80B	1,512	3
80A	662	1
W	352	1
70B	335	1
70A	246	0
PIT	87	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
61/70AF/24C	174	0
20B	156	0
70AF/81AO	120	0
20C	51	0
22C	43	0
24B	35	0
24C/61	23	0
22B	15	0
81AO	4	0

Lake Superior Plains

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	9,539	26
60	8,122	22
10,20	1,553	4
80B	1,427	4
30	1,340	4
70B	472	1
70A	180	0
80A	145	0
W	24	0
PIT	13	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
48C	40	0
PVT	2	0

Lower Carp River Complex

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	3,923	34
70B	3,488	30
80B	2,711	23
40,50,90	1,222	11
PIT	91	1
30	60	1
10,20	52	0
70A	38	0
W	16	0
80A	7	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
674/77BF	977	8
PVT	860	7
82BF	542	5
77BF	539	5
654/751BF	283	2
62/71AF/24D	271	2
751BF	194	2
779BF/82BF	182	2
674	141	1
979B/97B	97	1

Mackinac Breccia

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	3,097	8
80B	2,353	6
60	966	2
W	654	2
PIT	282	1
70B	258	1
30	238	1
10,20	117	0
80A	11	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	4,840	12
82BF	1,445	4
374B/674	182	0
71BO	144	0
979C	143	0
W	135	0
81BO	107	0
62/71BF	102	0
979D	65	0
24C	55	0

Mid-Sturgeon Moraine/Wetland

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	11,271	35
40,50,90	5,721	18
80A	5,447	17
30	3,837	12
60	2,291	7
70A	1,461	5
70B	1,372	4
10,20	418	1
W	251	1

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	15,086	47
82BF	2,946	9
81AO	1,561	5
81BF	1,432	4
32B	1,346	4
80AF	881	3
32C	749	2
80AO	580	2
81BO	510	2
72BF	487	2

Mint Farm

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	3,931	10
80B	2,006	5
70A	1,792	5
70B	750	2
10,20	353	1
80A	321	1
W	17	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
62/70AF	2,212	6
70AF	1,380	4
62	1,128	3
80BO/70BO	1,029	3
80BO	963	3
73BO/64/24C	388	1
71AF/64/24C	335	1
82AO	321	1
61/70AF	318	1
61	262	1

Moran Complex

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	7,772	26
40,50,90	6,363	21
W	5,589	19
70B	4,424	15
60	4,125	14
80A	515	2
10,20	395	1
30	267	1
PIT	107	0
70A	65	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	5,713	19
82BF	1,239	4
61/71AF	557	2
81AF	280	1
82AO	187	1
62/71AF	183	1
80BO	182	1
979B	173	1
751BF	163	1
42B	154	1

Munising Disintegration Moraines

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	36,307	75
30	2,375	5
80B	2,174	5
60	828	2
80A	814	2
W	384	1
70B	270	1
70A	215	0
10,20	140	0
PIT	35	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	16,001	33
40C/46C	3,128	7
43C	2,683	6
464C/45C/40C	1,739	4
40B	1,732	4
40C	1,641	3
464B/45B/40B	1,546	3
43D	1,509	3
82BF	1,160	2
40C/45C	1,147	2

Munising Moraine II

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	17,863	17
80A	2,795	3
30	1,589	1
80B	1,416	1
10,20	1,266	1
60	858	1
70B	247	0
PIT	115	0
W	17	0
70A	16	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	22,475	21
30B	950	1
40B	838	1
32B	523	0
42B	369	0
474B/979B	158	0
47B/979B	80	0
44B	79	0
43B	76	0
82BF/77BF	67	0

Munising Moraine IV

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	29,110	40
30	9,118	13
10,20	1,011	1
60	805	1
80A	744	1
W	491	1
70B	186	0
80B	151	0
70A	129	0
PIT	76	0
40	4	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
30B	1,852	3
40B	1,719	2
PVT	767	1
30C	745	1
40C	470	1
20C	257	0
20B	249	0
32C/34B	135	0
30D	86	0
34C/64	70	0

Nahma Lowlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	9,982	34
10,20	5,391	19
70B	3,632	12
60	2,837	10
70A	2,454	8
80A	1,763	6
W	1,166	4
30	1,004	3
40,50,90	818	3
20	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	5,639	19
81BF	3,255	11
82BF	1,497	5
80BO	1,341	5
72BF	1,273	4
W	1,129	4
62	1,123	4
81BF/70BF	1,050	4
24B	855	3
20C	779	3

Newberry Moraine

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	1,256	1
60	163	0
30	124	0
80B	22	0
W	15	0
70B	13	0
70A	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Niagara Escarpment

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	33,836	44
60	7,553	10
80B	7,459	10
70B	3,360	4
30	852	1
10,20	505	1
PIT	253	0
70A	77	0
W	62	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	3,370	4
979B/97B	1,033	1
97B	514	1
6794	502	1
751BF/82BF	476	1
979C	468	1
97B/47B	430	1
674	345	0
674/77BF	344	0
654	337	0

Niagara South

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	7,489	38
60	6,591	33
80B	3,459	17
40,50,90	943	5
70A	881	4
10,20	294	1
80A	128	1
PIT	22	0
W	7	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Onota Channelized Moraines

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	9,494	28
60	3,068	9
80B	1,661	5
70B	1,626	5
70A	374	1
30	304	1
80A	142	0
10,20	52	0
W	15	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	1,991	6
464B/5394B	1,857	6
4648C/53948C	1,410	4
674/77BF	909	3
598D/468D/81BF	770	2
779BF/6792/6794	756	2
40B	734	2
598F/468F/81BF	681	2
40B/59B	596	2
694/791BF	437	1

Paradise

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	2,061	11
10,20	1,152	6
80A	993	5
60	703	4
70A	423	2
W	236	1
70B	160	1
40,50,90	160	1

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Pictured Rocks Escarpment

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	1,536	6
40,50,90	1,217	5
80B	853	3
80A	434	2
70B	349	1
60	76	0
W	16	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	4,481	17

Pine River Patterned Wetland

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	12,924	36
60	10,954	30
80B	2,860	8
40,50,90	2,454	7
70A	826	2
30	584	2
PIT	76	0
10,20	46	0
W	41	0
80A	4	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	9,330	26
77BF	5,540	15
751BF	2,592	7
674/77BF	2,265	6
654/751BF	1,845	5
82BF	1,669	5
751BF/654	1,364	4
74BO	648	2
674	452	1
751BF/652	350	1

Raco Sand Plains North

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	38,087	87
60	4,558	10
30	484	1
70A	260	1
40,50,90	250	1
W	102	0
80B	97	0
80A	65	0
PIT	25	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
20B	18,088	41
20C	8,302	19
22B	4,319	10
22C/24B	1,807	4
PVT	1,549	4
24B	1,409	3
22C	1,131	3
61/24C	1,070	2
24C/61	861	2
20D	827	2

Raco Sand Plains South

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	7,051	35
60	5,137	25
70A	3,691	18
80A	1,764	9
30	1,317	6
80B	750	4
70B	572	3
40,50,90	124	1
W	3	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
22C	2,138	10
22B	1,851	9
70AF/80AO	1,720	8
61	1,679	8
70AF/61/24C	1,212	6
61/70AF/24C	1,083	5
70AF/61	1,072	5
24C/61	836	4
PVT	786	4
81AO/70AF	684	3

Ridge-Swale Complex

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	8,779	24
80B	7,698	21
80A	7,148	20
60	3,677	10
70A	3,281	9
70B	3,195	9
30	1,470	4
40,50,90	1,031	3
W	195	1

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
80AO	3,263	9
82BF	2,562	7
PVT	2,541	7
62	2,030	6
81BF	1,886	5
81BO	1,574	4
70AF	1,548	4
81AO	1,469	4
24B	1,425	4
80AF	1,337	4

Rudyard Clay Plain

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	1,216	2
60	617	1
40,50,90	101	0
70A	84	0
80B	3	0
W	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	960	1
77BF	157	0
74BO	24	0
652	0	0

Sand/Clay Transition - North

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	9,035	26
70B	3,212	9
30	2,497	7
80B	2,486	7
10,20	1,946	6
40,50,90	1,403	4
70A	1,074	3
W	322	1
80A	253	1
PIT	47	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
24C/61	1,084	3
61/751BF	1,027	3
654/751BF	826	2
PVT	779	2
32B	571	2
70BF	394	1
61/70AF	368	1
22B	289	1
434C/654	263	1
30B	252	1

Sand/Clay Transition - South

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	13,601	35
80B	5,908	15
70A	5,227	13
70B	4,565	12
80A	4,113	11
30	1,431	4
10,20	636	2
40,50,90	232	1
W	169	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	1,810	5
70AF/61	1,149	3
80BO	634	2
61/70AF/24C	537	1
74BO	255	1
751BF/652	205	1
22B	192	0
62/71AF	184	0
751BF	145	0
71BF	142	0

Shingleton Fen

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	15,366	37
60	4,322	10
80A	4,059	10
40,50,90	3,326	8
70A	2,872	7
70B	2,436	6
30	2,365	6
10,20	706	2
W	73	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
81BF	4,583	11
82BF	4,081	10
80BO	3,098	7
80AF	2,180	5
64	1,694	4
83BF	1,553	4
44B	1,389	3
71AF	1,302	3
70AF	1,294	3
72BF/71BO/81BF	1,132	3

Silver Creek Uplands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	2,056	9
60	931	4
30	926	4
70B	835	4
80B	781	3
PIT	23	0
W	6	0
10,20	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
34C	695	3
71BF/82BF	294	1
PVT	164	1
34B	135	1
82BF	128	1
674	115	1
64	88	0
32D	64	0
654	33	0
62	30	0

South Branch Carp Wetlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	619	3
70A	486	2
60	374	2
40,50,90	233	1
80A	131	1
70B	42	0
10,20	39	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

St. Martin Bay Wetlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	7,048	37
80B	4,910	26
60	2,386	13
40,50,90	1,209	6
30	300	2
10,20	185	1
80A	115	1
70A	37	0
W	37	0
PIT	29	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	4,038	21
82BF	3,734	20
751BF	1,609	9
75BF/62	1,171	6
674	965	5
75BF	413	2
81BF	384	2
674/751BF	336	2
77BF	334	2
81BO	258	1

Steuben Outwash

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
30	5,750	34
40,50,90	3,701	22
80B	2,561	15
60	1,172	7
10,20	1,035	6
70B	883	5
80A	697	4
70A	525	3
W	363	2

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
30B	2,487	15
32B	1,252	8
81BF	1,190	7
34B	662	4
45C	641	4
82BF	600	4
62	433	3
W	358	2
PVT	353	2
44B	344	2

Steuben Outwash/Moraine

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
30	5,750	34
40,50,90	3,701	22
80B	2,561	15
60	1,172	7
10,20	1,035	6
70B	883	5
80A	697	4
70A	525	3
W	363	2

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
30B	2,487	15
32B	1,252	8
81BF	1,190	7
34B	662	4
45C	641	4
82BF	600	4
62	433	3
W	358	2
PVT	353	2
44B	344	2

Steuben Segment

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	39,043	55
30	7,746	11
80B	7,234	10
10,20	6,954	10
W	4,693	7
60	2,253	3
80A	1,917	3
70B	794	1
70A	617	1

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
40C	10,700	15
40B	7,251	10
W	4,564	6
82BF	4,208	6
43C	3,710	5
40D	3,074	4
PVT	2,695	4
42B	2,498	4
30B	2,497	4
20C	1,744	2

Stonington Till Plain

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
70B	25,515	37
80B	17,380	25
40,50,90	11,307	16
60	9,347	14
10,20	2,613	4
70A	2,076	3
80A	476	1
W	329	0
30	51	0
90	5	0
PIT	4	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	42,587	62
82BF	6,372	9
77BF	5,423	8
779BF	3,078	4
81BF	2,343	3
751BF	835	1
62/70BF	567	1
81BO	464	1
71BF	357	1
62	307	0

Strongs Rd Outwash Hills

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	2,509	99
60	18	1
70A	5	0
80A	4	0
30	3	0
80B	2	0
W	2	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Tahquamenon River Drainage

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	5164	4
80B	2483	2
80A	613	1
70B	274	0
10,20	261	0
30	94	0
70A	44	0
40,50,90	27	0
W	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
80AF/81AO	36	0
24C/61	12	0
34C/62	2	0

Trenary Till Plain

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	18,499	9
80B	8,628	4
70B	4,532	2
60	2,793	1
30	2,211	1
10,20	637	0
70A	359	0
80A	135	0
W	27	0
PIT	7	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	23,962	12
82BF	2,598	1
32B	977	0
55B	797	0
51B	704	0
81BF	685	0
30B	579	0
34B	535	0
53B	420	0
42B	356	0

Waiska Bay Lowlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
60	122	1
70B	101	1
80B	50	0
40,50,90	26	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA

Watson Till/Wetland Complex

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	3,354	1
60	2,943	1
80B	2,830	0
70B	2,208	0
10,20	1,100	0
70A	721	0
80A	339	0
30	120	0
W	24	0
20	5	0
50	4	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	10,798	2
82BF	474	0
55B	242	0
51B	232	0
55B/53B	211	0
20C	209	0
53B	181	0
22B	104	0
32B	89	0
80AF	85	0

West Branch Manistique

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	2,523	5
60	1,005	2
70B	635	1
40,50,90	404	1
70A	310	1
80A	119	0
W	3	0
PIT	1	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
81BF	1,299	3
80BO/70BO	543	1
64	535	1
80BO	484	1
70BF	481	1
44B	379	1
71AF	230	0
62/70AF	193	0
80BF	168	0
64/71AF	140	0

Wetmore Outwash

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	12,878	52
30	8,749	36
80A	1,003	4
W	761	3
10,20	703	3
80B	326	1
70A	66	0
70B	30	0
PIT	29	0
60	6	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	6,626	27
30B	6,348	26
40B	5,864	24
30C	1,966	8
40C	1,194	5
20B	486	2
32B	266	1
W	203	1
81BF	184	1
40D	169	1

Wetmore Outwash II

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	20,181	62
40,50,90	3,860	12
80A	2,342	7
30	2,031	6
60	1,627	5
W	992	3
80B	920	3
70A	248	1
70B	103	0
PIT	3	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
20B	9,342	29
PVT	7,506	23
22B	4,394	14
24B	2,143	7
20C	1,993	6
30B	1,258	4
W	750	2
20D	645	2
40B	509	2
80BO	431	1

Whitefish-AuTrain Lowland

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
40,50,90	15,278	31
80B	13,710	28
70B	6,912	14
60	4,095	8
W	1,473	3
80A	1,001	2
10,20	807	2
30	404	1
70A	401	1
PIT	61	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	23,634	48
81BF	3,279	7
82BF	3,081	6
973B	1,424	3
97B	1,302	3
6791	1,083	2
979B	962	2
792BF	727	1
6792/779BF	645	1
779BF	590	1

Whitefish Delta

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
10,20	10,805	73
60	1,798	12
80B	920	6
70A	607	4
70B	330	2
30	171	1
40,50,90	99	1
W	29	0
80A	4	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
PVT	2,994	20
22B	2,675	18
10B	2,095	14
24B	1,333	9
20B	869	6
61	832	6
12B	339	2
14B	323	2
82BF	297	2
24B/22C	276	2

Wilwin Wetlands

Table 1. Acreage and relative percentage of top 10 Ecological Land Types (ELTs).

ELT	Acres	Percent of LTA
80B	3,186	20
80A	3,074	20
60	2,920	19
70B	1,105	7
70A	974	6
30	800	5
10,20	775	5
40,50,90	25	0
PIT	13	0
W	10	0

Table 2. Acreage and relative percentage of top 10 Ecological Land Type Phases (ELTPs).

ELTP	Acres	Percent of LTA
80AO	557	4
80BF	432	3
70AF/80AO	427	3
81AO	413	3
61/70AF	369	2
81BO	200	1
20D	165	1
PVT	119	1
34C/64	107	1
71AF/80AO	101	1

Appendix A References

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