

**TABLE 2.1 - UNITED STATES GEOLOGICAL SURVEY and NATIONAL PARK SERVICE
VEGETATION INVENTORY AND MAPPING PROGRAM
PHOTOINTERPRETIVE SIGNATURE KEY - ISLE ROYALE NATIONAL PARK, MICHIGAN**

TNC Project Code	Community Common Name	PI Code	PI Signature Name	Photo Signature (1:15,840 CIR, May 1996)	Context/Notes	Mapping Status
01	Spruce - fir / feathermoss forest	02	Spruce – fir / feathermoss forest	COLOR: magenta CROWN SIZE: very narrow to medium CROWN SHAPE: conical TEXTURE: medium to fine	Mapped where the conifers are a strong component (>70-80%) of the canopy. Frequently observed at low elevations in mesic settings near the Lake Superior shore.	Mapped
		19	Balsam fir / paper birch forest	COLOR: magenta some gray CROWN SIZE: very narrow to medium CROWN SHAPE: mostly conical TEXTURE: medium	Mapped to the same association, however with a canopy or sub-canopy component of paper birch of typically under 25%, (occasionally more).	Mapped
02	Balsam fir / Canada yew - devil's club forest	19B	Balsam fir / Canada yew - devil's club forest	Photo Interpretation signature not established.	Mapped on Passage Island based only on plot information. No photo interpretation signature established.	Mapped
03	White pine - aspen - birch forest	56	White pine - aspen – birch forest	COLOR: red CROWN SIZE: large CROWN SHAPE: star like (spreading) TEXTURE: medium to coarse	Mapped as pure stands of white pine or with a significant component of aspen or paper birch up to approximately 40-50%.	Mapped
04	White cedar - boreal conifer mesic forest	03	White cedar - boreal conifer mesic forest	COLOR: dark magenta with some gray CROWN SIZE: medium CROWN SHAPE: conical TEXTURE: medium to fine	Generally mapped within close proximity to the Lake Superior shore in mesic north trending concavities. Polygons are generally fairly small size.	Mapped
05	Black spruce / feathermoss forest	-	-	Photo Interpretation signature not established.	Not mapped, no biophysical relationships established either in the field reconnaissance or subsequent plot data. Generally falls below minimum mapping unit (MMU).	Not mapped, MMU
06	Jack pine - black spruce / feathermoss forest	01	Jack pine – black spruce / feathermoss forest (forest phase)	COLOR: purple CROWN SIZE: medium CROWN SHAPE: rounded TEXTURE: medium fine	Large stands of Jack pine mapped south of the Moskey Basin in the Mount Saginaw region. Smaller stands locally mapped to the west.	Mapped
		22	Jack pine - black spruce / feathermoss forest (woodland phase)	COLOR: purple CROWN SIZE: medium CROWN SHAPE: rounded TEXTURE: medium to coarse	Mapped locally in the Mount Saginaw region and south of Lake Richie to Chippewa Lake. Different from above type in that the canopy cover is generally 40-60% absolute density.	Mapped
07	White cedar - (mixed conifer) / alder swamp	06	White cedar - (mixed conifer) / alder swamp (closed phase)	COLOR: orange CROWN SIZE: medium CROWN SHAPE: conical TEXTURE: medium to coarse	Mapped in wetland forest settings where canopy cover is greater than 60%. Found throughout the park at all elevations. Numerous stands contained dead cedar.	Mapped
		04	White cedar - (mixed conifer) / alder swamp (open phase)	COLOR: orange CROWN SIZE: small CROWN SHAPE: irregular TEXTURE: mottled & irregular	Mapped in wetland open settings where the canopy cover is generally less than 40%. Often transitional from denser wetland forests to sedge meadows.	Mapped

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08	Aspen - birch - red maple forest	16C	Aspen - red maple forest	COLOR: white (aspen) gray (red maple) CROWN SIZE: small to medium CROWN SHAPE: irregular TEXTURE: coarse	Extremely difficult type to separate out to the association level, mapped where red maple and aspen are visible on the photography, especially north of Siskiwit Lake and along the eastern portions of the Red Oak ridge. Aspen is a strong component to the overall canopy.	Mapped
		25A	Aspen – red maple rocky woodland	COLOR: Light with some gray CROWN SIZE: medium CROWN SHAPE: variable TEXTURE: coarse	An open woodland category, often sparse with rocky substrate on higher slopes and ridgelines.	Mapped
09	Maple - yellow birch - northern hardwoods forest	08	Maple – yellow birch – northern hardwoods forest (sugar maple phase)	COLOR: gray (visible white leaf litter layer under canopy) CROWN SIZE: large CROWN SHAPE: spreading TEXTURE: coarse	Pure stands of sugar maple were mapped as extensive stands at higher elevations above the boreal influence of Lake Superior. Sugar maple noted in the western portions of the Red Oak Ridge and Greenstone Ridge.	Mapped
		09	Maple - yellow birch - northern hardwoods forest (mixed phase)	COLOR: gray to dark gray (visible white leaf litter under canopy) CROWN SIZE: large CROWN SHAPE: irregular TEXTURE: extremely coarse	Usually mapped adjacent to PI type 08 at slightly lower elevations, in somewhat more mesic settings.	Mapped
		10A	Maple - yellow birch - northern hardwoods forest (yellow birch phase)	COLOR: brown and gray– some visible leaf litter under canopy attribute to maple. CROWN SIZE: medium to large CROWN SHAPE: irregular TEXTURE: coarse	Mapped primarily in the western portion of the island south of Windigo where yellow birch is a strong dominant in the canopy layer.	Mapped
10	Red oak - sugar maple forest	11	Red oak – sugar maple forest	COLOR: gray (visible white leaf litter under canopy) CROWN SIZE: large CROWN SHAPE: irregular TEXTURE: coarse	Mapped using a combination of photo interpretation signature and biophysical setting. Red oak is not separable on the photography in leaf off conditions. Mapped on upper south facing exposed slopes.	Mapped
12	Northern (laurentian) igneous / metamorphic moist cliff scrub	60	Northern (laurentian) igneous / metamorphic moist cliff scrub	COLOR: dark gray (darkness from photo shadows) CROWN SIZE: small CROWN SHAPE: narrow TEXTURE: coarse	Mapped as extremely narrow units along steep facing cliffs generally trending north.	Mapped
13	Mountain ash - mountain maple forest	-	-	Photo interpretation signature not established.	Not mapped, generally occurring below the minimum mapping unit.	Not mapped, MMU
14	Aspen - balsam poplar lowland forest	-	-	Photo interpretation signature not established.	Not mapped, several individual balsam poplar trees observed near Caribou Creek west of Siskiwit Bay. Below minimum mapping unit.	Not mapped, MMU

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16	White cedar - yellow birch forest	21	White cedar - yellow birch forest (cedar – birch phase)	COLOR: orange (cedar) dark gray (yellow birch) CROWN SIZE: medium to large CROWN SHAPE: irregular – large & spreading (yellow birch) conical (cedar) TEXTURE: very coarse	Mapped in mesic settings on north facing neutral or concave slopes where yellow birch is codominant with cedar in the canopy layer.	Mapped
		50A	White cedar – yellow birch forest (mixed phase)	COLOR: orange (cedar) dark gray (yellow birch), similar to PI 21 except with a component of lighter gray from paper birch. CROWN SIZE: medium to large CROWN SHAPE: irregular – large & spreading (yellow birch) conical (cedar) TEXTURE: very coarse	This signature is similar to PI type 21, but is mapped in slightly less mesic settings over larger areas. Signature type generally includes a paper birch component. Generally noted west of the Island Mine Trail.	Mapped
18	White cedar – black ash swamp	-	-	Photo Interpretation signature not established.	Grouped to Complex 200.	Complex
19	White spruce woodland	-	-	Photo Interpretation signature not established.	Grouped to Alliance 300. (White Spruce Woodland Alliance)	Alliance
22	Balsam fir / Canada yew woodland	90	Balsam fir woodland	Photo Interpretation signature not established.	Mapped on Passage Island based only on plot information. No photo interpretation signature established.	Mapped (locally)
23	Spruce – fir – aspen forest (open variant)	53A	Spruce – fir – aspen open forest	COLOR: generally pink CROWN SIZE: medium CROWN SHAPE: conical TEXTURE: coarse	A woodland similar to PI type 25 but with a more significant component of spruce in the canopy layer and a higher canopy density.	Mapped
25	Black spruce / Labrador tea poor swamp	-	-	Photo Interpretation signature not established.	Mapped to Complex 100.	Complex
26	Black ash - mixed hardwood swamp	-	-	Photo interpretation signature not established.	Mapped to Complex 200.	Complex
27	Red maple - ash - birch swamp forest	49	Red maple – ash – birch swamp forest	COLOR: dark gray CROWN SIZE: medium CROWN SHAPE: irregular TEXTURE: smooth	Noted in field reconnaissance only once in small depressions, photo interpretation signature not well established. Noted as rare type on island. Mapped sparingly (under 10 polygons) based on reconnaissance data.	Mapped (locally)
28	Great Lakes boreal talus woodland	-	-	Photo interpretation signature not established.	Not mapped. No PI signature established – noted as rare type on island.	Not mapped, MMU
29	Boreal rocky shrubland	27	Boreal rocky shrubland	COLOR: gray CROWN SIZE: small CROWN SHAPE: irregular TEXTURE: fine	Mapped as a shrub type with densities generally below 60%. Noted on upper slopes and ridgetops.	Mapped
31	Common juniper rocky krummholz	26	Common juniper rocky krummholz	COLOR: orange CROWN SIZE: small CROWN SHAPE: rounded TEXTURE: mottled	Frequently mapped in rocky outcroppings often with a minor component of spruce. Generally noted in the eastern portion of the island.	Mapped
32	Thimbleberry shrubland	-	-	Photo Interpretation signature not established.	Not mapped – generally below minimum mapping unit size.	Not mapped, MMU
33	Great Lakes basalt/diabase cobble-gravel lakeshore, shrub zone	-	-	Photo Interpretation signature not established.	Not mapped – typically below minimum mapping unit size.	Not mapped, MMU

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34	White cedar – balsam fir / leatherleaf / black crowberry krummholz	83	White cedar – balsam fir / leatherleaf / black crowberry krummholz	Photo Interpretation signature not established.	Mapped using plot information on Passage Island only.	Mapped (locally)
35	Canada yew mixed shrubland	88	Canada yew mixed shrubland	Photo Interpretation signature not established.	Mapped using plot information on Passage Island only.	Mapped (locally)
36	Speckled alder swamp	28	Speckled alder swamp	COLOR: gray CROWN SIZE: medium to small CROWN SHAPE: irregular TEXTURE: medium to fine	Mapped primarily as linear polygons often adjacent to cedar wetlands or sedge meadows.	Mapped
37	Sweet gale shrub fen	-	-	Photo Interpretation signature not established.	Not mapped, not discernable on leaf off photography. Grouped with Complex 100	Complex
38	Poverty grass barrens	30	Poverty grass barrens	COLOR: light TEXTURE: smooth but irregular	Mapped on rocky ridges where rock is the primary signature; sparse grasses may or may not be visible on the photography.	Mapped
39	Great Lakes basalt/diabase cobble-gravel lakeshore	63	Great Lakes cobble / gravel lakeshore	COLOR: variable TEXTURE: irregular	Mapped sparingly where shoreline width exceeds MMU requirements.	Mapped
		67A	Great Lakes cobble / gravel lakeshore – (undifferentiated gravel)	COLOR: variable TEXTURE: irregular	Mapped sparingly where shoreline width exceeds MMU requirements. Note: PI types 63 & 67A have been combined.	Mapped
40	Bluejoint eastern meadow	31	Bluejoint eastern meadow	COLOR: light TEXTURE: fine	Mapped using the photo signature and biophysical relationships. Generally found around the edges of larger meadows, especially in higher elevations.	Mapped
41	Northern sedge wet meadow	-	-	Photo Interpretation signature not established.	Not mapped. Relates to TNC Project Code 58.	Complex
42	Northern poor fen	-	-	Photo Interpretation signature not established.	Not mapped. Relates to TNC Project Code 59.	Complex
44	Boreal calcareous seepage fen	-	-	Photo Interpretation signature not established.	Not mapped. Relates to TNC Project Code 58.	Complex
45	Great Lakes shoreline bulrush - cattail marsh	-	-	Photo Interpretation signature not established.	Not mapped, generally below minimum mapping unit size. Community is rare, sampled only once on the Island.	Not mapped, MMU
46	Midwest mixed emergent deep marsh	-	-	Photo Interpretation signature not established.	Not mapped, generally below minimum mapping unit size. Noted as an uncommon type on the Island.	Not mapped, MMU
47	Water horsetail - spikerush marsh	-	-	Photo Interpretation signature not established.	Not mapped, generally below minimum mapping unit size. Noted as an uncommon and extremely narrow type on the Island.	Not mapped, MMU
48	Twig rush wet meadow	-	-	Photo Interpretation signature not established.	Not mapped. Relates to TNC Project Code 58.	Complex
49	Midwest pondweed submerged aquatic wetland	-	-	Photo Interpretation signature not established.	Not mapped, not discernable on early spring photography. Relates to TNC Project Code 98.	Complex
50	Northern water lily aquatic wetland	-	-	Photo Interpretation signature not established.	Not mapped, not discernable on early spring photography. Noted as uncommon on the Island. Relates to TNC Project Code 98.	Complex
51	Great Lakes basalt (conglomerate) bedrock lakeshore	61	Great Lakes bedrock lakeshore	COLOR: variable TEXTURE: irregular	Mapped sparingly where shoreline width exceeds MMU requirements.	Mapped
		67	Great Lakes bedrock lakeshore – (undifferentiated bedrock)	COLOR: variable TEXTURE: irregular	Mapped sparingly where shoreline width exceeds minimum mapping unit requirements. Note: PI types 61 & 67 have been combined.	Mapped
52	Great Lakes basalt/diabase cliff	-	-	Photo Interpretation signature not established.	Not mapped, generally below minimum mapping unit size (too narrow). Noted as uncommon on the Island.	Not mapped, MMU

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53	Paper birch / bush honeysuckle - fir forest	12	Paper birch / bush honeysuckle - fir forest	COLOR: light tan CROWN SIZE: narrow CROWN SHAPE: regular TEXTURE: fine	Mapped in post burn situations especially on the Feldtmann Ridge and portions of the Minong Ridge.	Mapped
54a	Aspen - birch / boreal conifer forest	13	Aspen - birch / boreal conifer forest (mixed aspen-birch phase)	COLOR: generally light, with some pink-red visible in the understory CROWN SIZE: medium CROWN SHAPE: variable TEXTURE: coarse	Mapped as a forest type (canopy generally over 60%) where the canopy layer is predominantly deciduous, usually more aspen than birch, with a visible understory of conifers, or where understory is not visible but is in close proximity to conifer types.	Mapped
		16B	Aspen - birch / boreal conifer forest (aspen phase)	COLOR: white CROWN SIZE: large CROWN SHAPE: irregular TEXTURE: coarse	Mapped where aspen is a strong dominant to the overstory (often clone-like in appearance) in a general area of mixed conifer – deciduous types.	Mapped
		25	Aspen – birch / boreal conifer forest (sparse canopy phase)	COLOR: Light brown to gray – exposed rock in places CROWN SIZE: small CROWN SHAPE: irregular TEXTURE: medium	Mapped as a sparse woodland with a dominant canopy of deciduous species and a minor component of spruce usually in the sub canopy.	Mapped
		53	Aspen – birch / boreal conifer forest (woodland phase)	COLOR: white (emergent aspen) over dominant magenta-pink (conifer understory) CROWN SIZE: small CROWN SHAPE: conical TEXTURE: fine (stippled)	Mapped where aspen and/or paper birch is a tall emergent to a dense understory of conifer. Most common in the eastern portion of the Island.	Mapped
54b	Aspen - birch / sugar maple - mixed hardwoods forest	15	Aspen – birch / sugar maple – mixed hardwoods forest (mixed phase)	COLOR: light gray to white CROWN SIZE: medium to large CROWN SHAPE: irregular TEXTURE: coarse	Mapped in transition areas between northern hardwoods and boreal types especially in the western portion on the lower slopes of the Red Oak Ridge. Aspen is generally a tall emergent to the northern hardwoods component.	Mapped
		16A	Aspen - birch / sugar maple - mixed hardwoods forest (aspen phase)	COLOR: white CROWN SIZE: large CROWN SHAPE: irregular TEXTURE: coarse	Mapped where aspen is a strong canopy component in an area where the northern hardwood species are common; occasionally visible in the understory.	Mapped
		55	Aspen - birch / sugar maple - mixed hardwoods forest (paper birch phase)	COLOR: light brown to white CROWN SIZE: small CROWN SHAPE: regular TEXTURE: fine	Mapped where paper birch is a dominant component to the overstory with a visible understory of sugar maple. Most common in the eastern portions of the Greenstone Ridge.	Mapped
55	Spruce - fir - aspen forest	19A	Balsam fir – aspen –paper birch forest	COLOR: magenta & gray CROWN SIZE: small CROWN SHAPE: narrow TEXTURE: coarse	Mapped as a mixed conifer (primarily fir) – deciduous type with at least 25% relative canopy cover of either.	Mapped
		20	White spruce - balsam fir - aspen forest	COLOR: magenta & white CROWN SIZE: small to medium CROWN SHAPE: irregular TEXTURE: coarse	Similar to signature PI type 19A, but with a strong canopy component of aspen mixing with the conifer species that are dominated by spruce.	Mapped
56	Spruce - fir and sugar maple - yellow birch mosaic	54	Spruce – fir and sugar maple – yellow birch mosaic	COLOR: mixed white & magenta CROWN SIZE: large CROWN SHAPE: variable TEXTURE: coarse	Mapped in areas where the mixing of conifers and sugar maple are clearly not ecotonal, often covering large areas.	Mosaic

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58	Sedge meadow complex	32	Sedge meadow complex	COLOR: white TEXTURE: fine to medium	Mapped to formation level in meadow environments. Early spring photography does not facilitate separating out the carex meadow types to alliance or association levels. Relates to TNC Project Codes 41, 44 & 48.	Complex
59	Sedge / sphagnum meadow complex+	32A	Sedge / sphagnum meadow complex	COLOR: white to orange TEXTURE: fine to medium	Mapped to formation level, the presence of a sphagnum layer differentiates this type from PI type 32. Noted as rare type (1 sample) on the Island. Relates to TNC Project Codes 42	Complex
60	White cedar - sweet gale scrub fen	-	-	Photo Interpretation signature not established.	Not mapped, included in complex 100 or with the northern tamarack rich swamp.	Complex
62	Spruce - fir basalt bedrock glade	-	-	Photo Interpretation signature not established.	Not mapped, included in Alliance 300	Alliance
63	Boreal pine rocky woodland	51	Boreal pine rocky woodland	COLOR: variable, mostly exposed surface light CROWN SIZE: large CROWN SHAPE: variable depending on species composition TEXTURE: coarse	Mapped primarily on exposed ridges where pines make up at least 25% relative cover, but absolute cover is sparse, usually below 25%.	Mapped
65	Northern tamarack rich swamp	18	Northern tamarack rich swamp	COLOR: light CROWN SIZE: medium CROWN SHAPE: variable TEXTURE: coarse	Mapped only in areas west of Siskiwit Bay where the deciduous conifers are visible in a normally sparse canopy, usually over carex type meadows.	Mapped
66	Black spruce / alder rich swamp	-	-	Photo Interpretation signature not established.	Not mapped – Noted as rare on the Island (2 samples)	Not mapped, MMU
67	Leatherleaf - sweet gale shore fen	-	-	Photo Interpretation signature not established.	Not mapped, grouped up to Complex 100.	Complex
70	Leatherleaf bog	-	-	Photo Interpretation signature not established.	Not mapped, grouped up to Complex 100.	Complex
72	Timothy - (bluejoint) seminatural meadow	-	-	Photo Interpretation signature not established.	Not mapped, below minimum mapping unit and often associated with land use categories.	Not mapped, MMU
74	Yellow birch - (spruce) forest	50	Yellow birch – (spruce) forest	COLOR: dark gray-brown with red CROWN SIZE: large CROWN SHAPE: irregular - spreading TEXTURE: very course	Mapped primarily in the western portion of the island in mesic settings in a mixed (25% minimum relative cover of either conifer or hardwoods) canopy layer. Paper birch may be a minor component to the canopy.	Mapped
98	Water	98	Water	COLOR: dark blue to black TEXTURE: smooth	Note that all water boundaries have been adjusted to register to the digital orthophotos. Relates to TNC Project Codes 49 and 50 except for Lake Superior.	Complex
99	Urban/built-up	99	Urban/built-up	COLOR: variable TEXTURE: irregular	Refer to the Land Use variable (see Data Dictionary) for detailed urban/built-up categories. Note: Does not relate to TNC Project Code.	Mapped

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100	Wooded peatland complex	05	Black spruce / dwarf-shrub swamp complex	COLOR: sparse pink over orange (sphagnum) layer CROWN SIZE: very small CROWN SHAPE: irregular TEXTURE: coarse – variable	Mapped where a sparse component of conifers (spruce) is found over a visible 'peat' layer. Shrubs may or may not be visible depending on size and density. Relates to TNC Project Codes 25, 60, 66(?)	Complex
		29	Dwarf shrub fen complex	COLOR: generally orange CROWN SIZE: extremely small TEXTURE: smooth – some stipple	Mapped in areas where ericads are visible as a shrub component to a sphagnum ground cover. Relates to TNC Project Codes 37, 67 and 70.	Complex
200	Black ash (white cedar) – mixed hardwoods swamp complex	17A	Black ash (cedar) – mixed hardwoods swamp complex	COLOR: dark gray with some orange CROWN SIZE: narrow CROWN SHAPE: variable (conical in cedar) TEXTURE: fine to medium	Mapped in wet areas where canopy cover is mixed hardwood-conifer. Cannot distinguish two black ash swamp types. Relates to TNC Project Codes 18 and 26.	Complex
		17	Black ash - mixed hardwood swamp complex	COLOR: dark gray CROWN SIZE: narrow CROWN SHAPE: irregular TEXTURE: fine	Mapped in wet areas where canopy cover is predominantly deciduous although sub canopy may be conifer. Relates to TNC Project Codes 18 and 26.	Complex
300	White spruce woodland alliance	23	White spruce woodland alliance	COLOR: pink CROWN SIZE: medium CROWN SHAPE: conical but irregular TEXTURE: coarse	Mapped to the super alliance – cannot reliably distinguish glade type from woodland type due to overlapping densities. Relates to TNC Project Codes 19 and 62.	Alliance