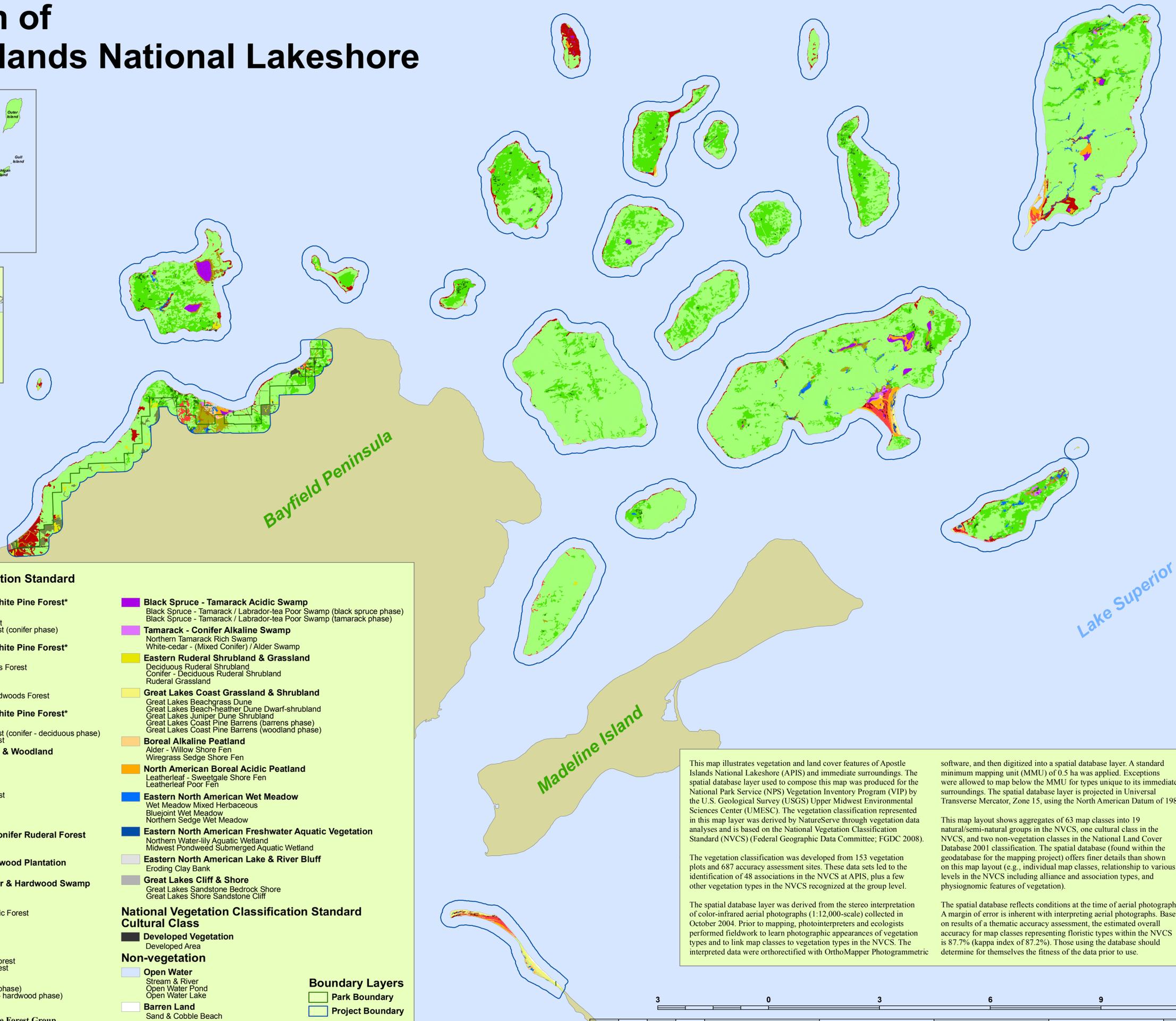
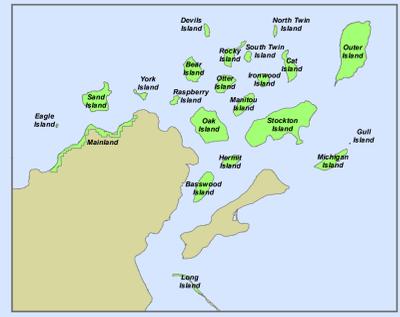




Vegetation of Apostle Islands National Lakeshore



National Vegetation Classification Standard Natural/Semi-natural Groups

- **Northern Hardwood - Hemlock - White Pine Forest* (Conifer Forests)**
 Great Lakes White Pine - Hemlock Forest
 White-cedar - Boreal Conifer Mesic Forest (conifer phase)
 Hemlock Mesic Forest
- **Northern Hardwood - Hemlock - White Pine Forest* (Deciduous Forests)**
 Maple - Yellow Birch Northern Hardwoods Forest
 Northern Maple - Basswood Forest
 Yellow Birch - (White Spruce) Forest
 Aspen - Birch - Red Maple Forest
 Aspen - Birch / Sugar Maple - Mixed Hardwoods Forest
 Northern Red Oak - Sugar Maple Forest
- **Northern Hardwood - Hemlock - White Pine Forest* (Conifer - Deciduous Forests)**
 White-cedar - Boreal Conifer Mesic Forest (conifer - deciduous phase)
 North-Central Hemlock - Hardwood Forest
- **White Pine - Red Pine - Oak Forest & Woodland**
 Jack Pine - Northern Pin Oak Forest
 Red Pine - Aspen - Birch Forest
 Red Pine / Blueberry Dry Forest
 White Pine - Aspen - Birch Forest
 White Pine / Blueberry Dry-Mesic Forest
 White Pine / Mountain Maple Mesic Forest
 Northern Pin Oak - (Bur Oak) Forest
- **Great Lakes Pine Barrens**
 Great Lakes Dune Pine Forest
- **Northern & Central Hardwood & Conifer Ruderal Forest**
 Hardwood Ruderal Forest
 Conifer - Hardwood Ruderal Forest
- **Northern & Central Conifer & Hardwood Plantation**
 Conifer Plantation
- **Northern & Central Alkaline Conifer & Hardwood Swamp**
 Red Maple - Ash - Birch Swamp Forest
 Black Ash - Mixed Hardwood Swamp
 White-cedar - Black Ash Swamp
 Hemlock - Yellow Birch Swamp Wet-Mesic Forest
- **Northern & Central Shrub Swamp**
 Gray Alder Swamp Shrubland
- **Jack Pine - Black Spruce Forest**
 Black Spruce / Feathermoss Forest
 Jack Pine - Aspen / Bush-honeysuckle Forest
 Jack Pine / Blueberry / Feathermoss Forest
- **White Spruce - Balsam Fir Forest**
 Balsam Fir - Paper Birch Forest (conifer phase)
 Balsam Fir - Paper Birch Forest (conifer - hardwood phase)
 Paper Birch / Fir Forest
 Aspen - Birch / Boreal Conifer Forest

- **Black Spruce - Tamarack Acidic Swamp**
 Black Spruce - Tamarack / Labrador-tea Poor Swamp (black spruce phase)
 Black Spruce - Tamarack / Labrador-tea Poor Swamp (tamarack phase)
- **Tamarack - Conifer Alkaline Swamp**
 Northern Tamarack Rich Swamp
 White-cedar - (Mixed Conifer) / Alder Swamp
- **Eastern Ruderal Shrubland & Grassland**
 Deciduous Ruderal Shrubland
 Conifer - Deciduous Ruderal Shrubland
 Ruderal Grassland
- **Great Lakes Coast Grassland & Shrubland**
 Great Lakes Beachgrass Dune
 Great Lakes Beach-heather Dune Dwarf-shrubland
 Great Lakes Juniper Dune Shrubland
 Great Lakes Coast Pine Barrens (barrens phase)
 Great Lakes Coast Pine Barrens (woodland phase)
- **Boreal Alkaline Peatland**
 Alder - Willow Shore Fen
 Wiregrass Sedge Shore Fen
- **North American Boreal Acidic Peatland**
 Leatherleaf - Sweetgale Shore Fen
 Leatherleaf Poor Fen
- **Eastern North American Wet Meadow**
 Wet Meadow Mixed Herbaceous
 Bluejoint Wet Meadow
 Northern Sedge Wet Meadow
- **Eastern North American Freshwater Aquatic Vegetation**
 Northern Water-lily Aquatic Wetland
 Midwest Pondweed Submerged Aquatic Wetland
- **Eastern North American Lake & River Bluff**
 Eroding Clay Bank
- **Great Lakes Cliff & Shore**
 Great Lakes Sandstone Bedrock Shore
 Great Lakes Shore Sandstone Cliff

- ### National Vegetation Classification Standard Cultural Class
- **Developed Vegetation**
 Developed Area
 - **Open Water**
 Stream & River
 Open Water Pond
 Open Water Lake
 - **Barren Land**
 Sand & Cobble Beach

- ### Boundary Layers
- Park Boundary**
 - Project Boundary**

* Northern Hardwood - Hemlock - White Pine Forest Group
 The map classes within this group were used to classify over 90% of the mapped vegetation. To display the diversity within this group, the group has been split into three categories: Conifer Forests, Deciduous Forests, and Conifer - Deciduous Forests. These categories are not part of the National Vegetation Classification Standard.

This map illustrates vegetation and land cover features of Apostle Islands National Lakeshore (APIS) and immediate surroundings. The spatial database layer used to compose this map was produced for the National Park Service (NPS) Vegetation Inventory Program (VIP) by the U.S. Geological Survey (USGS) Upper Midwest Environmental Sciences Center (UMESC). The vegetation classification represented in this map layer was derived by NatureServe through vegetation data analyses and is based on the National Vegetation Classification Standard (NVCS) (Federal Geographic Data Committee; FGDC 2008).

The vegetation classification was developed from 153 vegetation plots and 687 accuracy assessment sites. These data sets led to the identification of 48 associations in the NVCS at APIS, plus a few other vegetation types in the NVCS recognized at the group level.

The spatial database layer was derived from the stereo interpretation of color-infrared aerial photographs (1:12,000-scale) collected in October 2004. Prior to mapping, photointerpreters and ecologists performed fieldwork to learn photographic appearances of vegetation types and to link map classes to vegetation types in the NVCS. The interpreted data were orthorectified with OrthoMapper Photogrammetric software, and then digitized into a spatial database layer. A standard minimum mapping unit (MMU) of 0.5 ha was applied. Exceptions were allowed to map below the MMU for types unique to its immediate surroundings. The spatial database layer is projected in Universal Transverse Mercator, Zone 15, using the North American Datum of 1983.

This map layout shows aggregates of 63 map classes into 19 natural/semi-natural groups in the NVCS, one cultural class in the NVCS, and two non-vegetation classes in the National Land Cover Database 2001 classification. The spatial database (found within the geodatabase for the mapping project) offers finer details than shown on this map layout (e.g., individual map classes, relationship to various levels in the NVCS including alliance and association types, and physiognomic features of vegetation).

The spatial database reflects conditions at the time of aerial photography. A margin of error is inherent with interpreting aerial photographs. Based on results of a thematic accuracy assessment, the estimated overall accuracy for map classes representing floristic types within the NVCS is 87.7% (kappa index of 87.2%). Those using the database should determine for themselves the fitness of the data prior to use.

