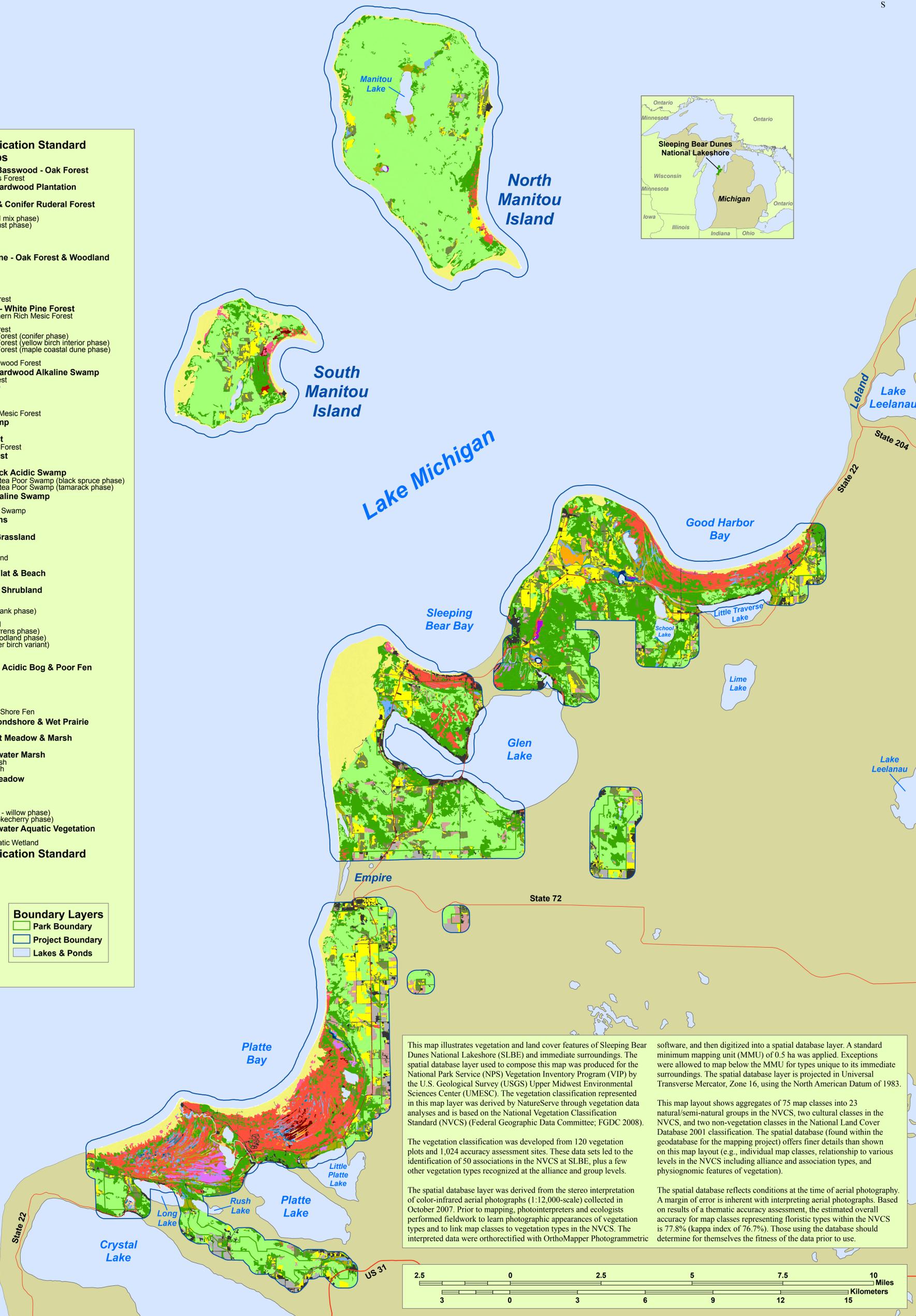




Vegetation of Sleeping Bear Dunes National Lakeshore



- National Vegetation Classification Standard**
Natural/Semi-natural Groups
- **North-Central Beech - Maple - Basswood - Oak Forest**
 Beech - Maple - Northern Hardwoods Forest
 - **Northern & Central Conifer & Hardwood Plantation**
 Conifer Plantation
 - **Northern & Central Hardwood & Conifer Ruderal Forest**
 Conifer Ruderal Forest
 Hardwood Ruderal Forest (hardwood mix phase)
 Hardwood Ruderal Forest (black locust phase)
 Conifer - Hardwood Ruderal Forest
 - **Great Lakes Pine Barrens**
 Great Lakes Dune Pine Forest
 - **White Pine - Red Pine - Jack Pine - Oak Forest & Woodland**
 Jack Pine - Northern Pin Oak Forest
 Red Pine - Aspen - Birch Forest
 Red Pine / Blueberry Dry Forest
 White Pine - Red Oak Forest
 White Pine - Aspen - Birch Forest
 White Pine / Blueberry Dry-Mesic Forest
 - **Northern Hardwood - Hemlock - White Pine Forest**
 Sugar Maple - Ash - Basswood Northern Rich Mesic Forest
 Aspen - Birch - Red Maple Forest
 Northern Red Oak - Sugar Maple Forest
 White-cedar - Boreal Conifer Mesic Forest (conifer phase)
 White-cedar - Boreal Conifer Mesic Forest (yellow birch interior phase)
 White-cedar - Boreal Conifer Mesic Forest (maple coastal dune phase)
 Hemlock Mesic Forest
 Great Lakes Hemlock - Beech - Hardwood Forest
 - **Northern & Central Conifer & Hardwood Alkaline Swamp**
 Red Maple - Ash - Birch Swamp Forest
 Black Ash - Mixed Hardwood Swamp
 Central Tamarack Poor Swamp
 White Pine - Red Maple Swamp
 White-cedar - Black Ash Swamp
 Hemlock - Yellow Birch Swamp Wet-Mesic Forest
 - **Northern & Central Shrub Swamp**
 Gray Alder Swamp
 - **Jack Pine - Black Spruce Forest**
 Jack Pine / Blueberry / Feathermoss Forest
 - **White Spruce - Balsam Fir Forest**
 Spruce - Fir - Aspen Forest
 - **Eastern Black Spruce - Tamarack Acidic Swamp**
 Black Spruce - Tamarack / Labrador-tea Poor Swamp (black spruce phase)
 Black Spruce - Tamarack / Labrador-tea Poor Swamp (tamarack phase)
 - **Eastern Tamarack - Conifer Alkaline Swamp**
 Northern Tamarack Rich Swamp
 White-cedar - (Mixed Conifer) / Alder Swamp
 - **Northern & Central Sand Barrens**
 Bracken Grassland
 - **Eastern Ruderal Shrubland & Grassland**
 Conifer Ruderal Shrubland
 Deciduous Ruderal Shrubland
 Conifer - Deciduous Ruderal Shrubland
 Ruderal Grassland
 - **Eastern North American Lake Flat & Beach**
 Inland Freshwater Strand Beach
 - **Great Lakes Dune Grassland & Shrubland**
 Great Lakes Beachgrass Dune
 Great Lakes Beach (blowout phase)
 Great Lakes Beach (erodable sand bank phase)
 Interdunal Wetland
 Great Lakes Juniper Dune Shrubland
 Great Lakes Coast Pine Barrens (barrens phase)
 Great Lakes Coast Pine Barrens (woodland phase)
 Eastern Cottonwood Woodland (paper birch variant)
 Cottonwood Dune Open Woodland
 Sand Cherry Dune Shrubland
 - **Eastern North American Boreal Acidic Bog & Poor Fen**
 Leatherleaf Poor Fen
 - **Boreal Alkaline Peatland**
 Great Lakes Sedge Rich Shore Fen
 Woolly-fruit Sedge Shore Fen
 Leatherleaf - Sweetgale Shore Fen
 Shrubby-cinquefoil - Sweetgale Rich Shore Fen
 - **Atlantic & Gulf Coastal Plain Pondshore & Wet Prairie**
 Inland Coastal Plain Marsh
 - **Northern & Central Ruderal Wet Meadow & Marsh**
 Eastern Reed Marsh
 - **Eastern North American Freshwater Marsh**
 Northern Great Lakes Emergent Marsh
 Midwest Mixed Emergent Deep Marsh
 - **Eastern North American Wet Meadow**
 Wet Meadow Mixed Herbaceous
 Bluejoint Wet Meadow
 Northern Sedge Wet Meadow
 Upright Sedge Wet Meadow
 Dogwood - Willow Swamp (dogwood - willow phase)
 Dogwood - Willow Swamp (black chokecherry phase)
 - **Eastern North American Freshwater Aquatic Vegetation**
 Northern Water-lily Aquatic Wetland
 Midwest Pondweed Submerged Aquatic Wetland
- National Vegetation Classification Standard**
Cultural Classes
- **Agricultural Vegetation**
 Deciduous Orchard
 Crop Field
 Pasture Field
 - **Developed Vegetation**
 Developed Area
- Non-vegetation**
- **Open Water**
 Stream & River
 Open Water Pond
 Open Water Lake
 - **Barren Land**
 Sand & Cobble Beach
- Boundary Layers**
- Park Boundary**
 - Project Boundary**
 - Lakes & Ponds**



This map illustrates vegetation and land cover features of Sleeping Bear Dunes National Lakeshore (SLBE) 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 120 vegetation plots and 1,024 accuracy assessment sites. These data sets led to the identification of 50 associations in the NVCS at SLBE, plus a few other vegetation types recognized at the alliance and group levels.

The spatial database layer was derived from the stereo interpretation of color-infrared aerial photographs (1:12,000-scale) collected in October 2007. 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 16, using the North American Datum of 1983.

This map layout shows aggregates of 75 map classes into 23 natural/semi-natural groups in the NVCS, two cultural classes in the NVCS, and two non-vegetation classes in the National Land Cover Database 2001 classification. The spatial database layer (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 in 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 77.8% (kappa index of 76.7%). Those using the database should determine for themselves the fitness of the data prior to use.

