

Supplemental Map Information (User Report) Outline

Project ID: R05Y13P13_Rapid_Update_R5_Coastal

Project Title or Area: Rapid Update to the National Wetlands Inventory for Selected Areas of Intertidal Wetlands in Region 5

Photo-interpretation: Conservation Management Institute (Contractor)

Source Imagery (type, scale and date):

- True Color, 1 meter, National Agriculture Imagery Program (NAIP). NAIP image dates vary by state as follows: Massachusetts 2008, Maine 2011, New York 2011, New Jersey 2013, Pennsylvania 2010, Maryland 2011, Virginia 2012.
- ESRI World Imagery, 0.3 meter: Maine 2010, New York 2011, Virginia 2011, Maryland 2010, Pennsylvania 2011, Massachusetts 2011.
- Maine Orthoimagery: Low Tide Down East 2009.

NAIP collected from the Geospatial Data Gateway (<http://datagateway.nrcs.usda.gov/>)

Maine Statewide Ortho WMS Services accessed at:

<http://mapserver.maine.gov/wms/mapserv.exe?map=c:/wms/orthos.map&>

ESRI World Imagery accessed at map service <http://services.arcgisonline.com/arcgis/services>

Collateral Data (include any digital data used as collateral): NRCS Digital Raster Graphic (DRG), SSURGO soil data, NWI data, Maryland Department of Natural Resources wetlands, Massachusetts Department of Environmental Protection wetlands.

Maryland wetlands collected from Maryland Department of Natural Resources

[\(http://dnrweb.dnr.state.md.us/gis/data/\)](http://dnrweb.dnr.state.md.us/gis/data/)

Massachusetts wetlands collected from Massachusetts Department of Environmental Protection

<http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/depwetlands112000.html>)

NWI data collected from National Wetlands Inventory (<http://www.fws.gov/wetlands/Data/Data-Download.html>)

SSURGO soil data and DRG available on Geospatial Data Gateway

[\(http://datagateway.nrcs.usda.gov/\)](http://datagateway.nrcs.usda.gov/)

Inventory Method (original mapping, map update, techniques used): The NWI rapid update for select regions in Region 5 was created by editing polygons in the pre-existing NWI or State wetland data, depending on location. Massachusetts State data was overall spatially current and

acceptable, but wetland attributes required conversion to Cowardin wetland coding system. These Massachusetts state wetland maps were reattributed using Cowardin codes while spatial edits were kept to a minimum. State wetland data for Maryland was already attributed in Cowardin, but required spatial updates. For all other locations (Maine, New York, Pennsylvania, Virginia), the most recent NWI was overlaid with contemporary imagery and photo-interpreted to create updated polygons and attributes. Ancillary datasets consisted of SSURGO hydric soils and DRG topographic maps. Special modifiers were added where applicable to describe disturbed and altered wetlands and deepwater habitats: ditching, impoundment, excavation, artificial water control.

Classification (Cowardin wetlands, riparian, uplands, hydrogeomorphic, etc.): We used the Cowardin et al. (1979) system for wetlands and deepwater habitats.

Data Limitations: None

General description of the Project Area: North-central lake-swamp-morainic plains, New England lowlands, 147,300 mi² (381,500 km²)

Land-surface form.--Most of this province has low relief, but rolling hills occur in many places. Lakes, poorly drained depressions, morainic hills, drumlins, eskers, outwash plains, and other glacial features are typical of the area, which was entirely covered by glaciers during parts of the Pleistocene. Elevations range from sea level to 2,400 ft (730 m).

This stand of beech and hemlock illustrates mixed deciduous- coniferous forest in the Laurentian Mixed Forest Province, Allegheny National Forest, Pennsylvania.

Climate.--Winters are moderately long and somewhat severe, but more than 120 days have temperatures above 50F (10C). Average annual temperatures range from 35 to 50F (2 to 10C). A short growing season imposes severe restrictions on agriculture; the frost-free season lasts from 100 to 140 days. Snow usually stays on the ground all winter. During winter, the province lies north of the main cyclonic belt; but during summer it lies within this belt, and the weather is changeable. Average annual precipitation is moderate, ranging from 24 to 45 in (610 to 1,150 mm); maximum precipitation comes in summer.

Vegetation.--This province lies between the boreal forest and the broadleaf deciduous forest zones and is therefore transitional. Part of it consists of mixed stands of a few coniferous species (mainly pine) and a few deciduous species (mainly yellow birch, sugar maple, and American beech); the rest is a macromosaic of pure deciduous forest in favorable habitats with good soils and pure coniferous forest in less favorable habitats with poor soils. Mixed stands have several species of conifer, mainly northern white pine in the Great Lakes region, with an admixture of

eastern hemlock. Eastern redcedar is found in the southeast. Pine trees are often the pioneer woody species that flourish in burned-over areas or on abandoned arable land. Because they grow more rapidly than deciduous species where soils are poor, they quickly form a forest canopy; but where deciduous undergrowth is dense, they have trouble regenerating, and remain successful only where fire recurs. Fires started by lightning are common in this province, particularly where soils are sandy and there is a layer of dry litter in summer.

Soils.--The greatly varying soils include peat, muck, marl, clay, silt, sand, gravel, and boulders, in various combinations. Spodosols are dominant in New England and along the Great Lakes coast; Inceptisols and Alfisols dominate farther inland. The Alfisols are medium to high in bases and have gray to brown surface horizons and subsurface horizons of clay accumulation.

Fauna.--In winter, the shorttail weasel (ermine) and snowshoe hare turn white, as they do in polar provinces. The black bear, striped skunk, marmot, chipmunk, and two genera of jumping mice all pass the winter in hibernation. So do badger and the striped ground squirrel that live in the western parts of the province. Beaver and muskrat remain active all winter, working beneath the ice that covers the lakes and streams.

Ptarmigan also turn white in winter. Many other birds, especially insectivorous species, migrate south. Common summer resident birds include the white-throated sparrow, northern junco, and yellow-bellied sapsucker.

General Description of the Project Area: Appalachian Plateaus, New England lowlands, mid-Atlantic coastal plain, Piedmont Plateau, 104,500 mi² (270,700 km²)

Land-surface form.--This province includes topography of diverse nature and origin. The northern part has been glaciated. West of the Appalachian Mountains are the Appalachian Plateaus. The sedimentary formations there are nearly horizontal, a typical plateau structure, but they are so elevated and dissected that the landforms are mostly hilly and mountainous. Altitudes range from about 1,000 ft (300 m) along their western edge to somewhat more than 3,000 ft (900 m) on the eastern edge. East of the mountains is the Piedmont Plateau and coastal plain, where altitudes range from sea level to about 1,000 ft (300 m).

A grove of yellow-poplar in the Eastern Broadleaf Forest (Oceanic) Province, Chattahoochee National Forest, Georgia.

Climate.--The continental climatic regime here ensures a strong annual temperature cycle, with cold winters and warm summers. Average annual temperatures range from 40 to 60F (4 to 15C). There is year-round precipitation, averaging from 35 to 60 in (890 to 1,530 mm) per year. Precipitation is markedly greater in the summer months, when evapotranspiration is great and moisture demands are high. Only a small water deficit is incurred in summer, whereas a large surplus normally develops in spring.

Vegetation.--This province is characterized by a winter deciduous forest (sometimes called temperate deciduous forest) dominated by tall broadleaf trees that provide a dense, continuous canopy in summer and shed their leaves completely in winter. Lower layers of small trees and

shrubs develop weakly. In spring, a luxuriant ground cover of herbs quickly develops, but is greatly reduced after trees reach full foliage and shade the ground. Forest vegetation is divided into three major associations: mixed mesophytic, Appalachian oak, and pine-oak.

Mixed mesophytic vegetation, the deciduous forest with the greatest diversity, occupies moist, well-drained sites in the Appalachian Plateaus. Widespread dominants include American beech, tuliptree (also called yellow-poplar), several basswoods, sugar maple, sweet buckeye, red oak, white oak, and eastern hemlock, in addition to 20-25 other species. The best indicators of this association are buckeye and basswood.

The Appalachian oak association occurs east of the mountains. The dominant species are white oak and northern red oak. Chestnut formerly was abundant, but a blight has destroyed most of this species.

Pine-oak forest--sometimes called "Pine Barrens"--occupies dry sandy soils that are frequently exposed to naturally occurring fires along the northern Coastal Plain. There is a thick shrub layer beneath the pines. Atlantic white-cedar swamps occur on mesic sites.

Soils.--The pedogenic process associated with deciduous forest is podzolization, moderated by warm wet winters. As a result, soils are characteristically Alfisols. Toward lower latitudes, the tendency to laterization becomes stronger and Ultisols are encountered. Inceptisols are found on the plateaus. In the deciduous forests, a thick layer of leaves covers the ground and humus is abundant.

Fauna.--Important mammals include the whitetail deer, black bear, bobcat, gray fox, raccoon, gray squirrel, fox squirrel, eastern chipmunk, white-footed mouse, pine vole, shorttail shrew, and cotton mouse.

Bird populations are large. The turkey, ruffed grouse, bobwhite, and mourning dove are game birds in various parts of the province. The most abundant breeding birds include the cardinal, tufted titmouse, wood thrush, summer tanager, red-eyed vireo, blue-gray gnatcatcher, and Carolina wren.

Characteristic reptiles include the box turtle, common garter snake, and timber rattlesnake.

General Description of the Project Area: Atlantic and Gulf Coastal Plains, Florida, 173,800 mi² (450,100 km²)

Land-surface form.--This province comprises the flat and irregular Atlantic and Gulf Coastal Plains down to the sea. Well over 50 percent of the area is gently sloping. Local relief is less than 300 ft (90 m), although some areas are gently rolling. Most of the region's numerous streams are sluggish; marshes, swamps, and lakes are numerous.

A forest of live oak draped with Spanish moss in the Outer Coastal Plain Mixed Forest Province.

Climate.--The climate regime is equable, with a small to moderate annual temperature range.

Average annual temperature is 60 to 70F (16 to 21C). Rainfall is abundant and well distributed throughout the year; precipitation ranges from 40 to 60 in (1,020 to 1,530 mm) per year.

Vegetation.--Temperate rainforest, also called temperate evergreen forest or laurel forest, is typical in this province. Temperate rainforest has fewer species of trees than its equatorial or tropical counterparts, and hence larger populations of individual species. Trees are not as tall here as in low-latitude rainforests; leaves are usually smaller and more leathery, and the leaf canopy less dense. Common species include evergreen oaks and members of the laurel and magnolia families. There is usually a well-developed lower stratum of vegetation that may variously include tree ferns, small palms, shrubs, and herbaceous plants. Lianas and epiphytes are abundant. At higher elevations, where fog and clouds persist, the trunks and branches of trees are often sheathed in moss. A striking example of epiphyte accumulation at lower elevations is the Spanish "moss" that festoons the Evangeline oak, baldcypress, and other trees of the eastern Gulf coast.

Along the Atlantic coast, the extensive coastal marshes and interior swamps are dominated by gum and cypress. Most upland areas are covered by subclimax pine forest, which has an understory of grasses and sedges called savannas. Undrained shallow depressions in savannas form upland bogs or pocosins, in which evergreen shrubs predominate.

A word about the vegetation of the coastal Southeastern United States may prevent some misunderstanding. On forest maps of the United States and on numerous maps of world vegetation, this coastal zone is shown as having needleleaf evergreen or coniferous forest. It is true that sandy uplands have forests of loblolly and slash pine, and that baldcypress is a dominant tree in swamps; but such vegetation represents either xerophytic and hydrophytic forms in excessively dry or wet habitats, or second-growth forest following fire and deforestation. The climax vegetation of mesophytic habitats is the evergreen-oak and magnolia forest.

Soils.--Soils are mainly Ultisols, Spodosols, and Entisols. Temperate rainforest grows on a wide variety of upland soils, but most tend to be wet, acidic, and low in major plant nutrients. The soils are derived mainly from coastal plain sediments ranging from heavy clay to gravel, with sandy materials predominant. Silty soils occur mainly on level expanses. Sands are prevalent in hilly areas, but they also cover broad flats in central Florida.

Fauna.--This region provides habitat for a wide variety of animals. Except for a few isolated areas where black bear or the endangered Florida panther are found in small numbers, the whitetail deer is the only large indigenous mammal. Common small mammals include raccoons, opossums, flying squirrels, rabbits, and numerous species of ground-dwelling rodents.

Bobwhite and wild turkey are the principal game birds. Migratory nongame bird species are numerous, as are migratory waterfowl. Winter birds are diverse and numerous. The red-cockaded woodpecker is an endangered species.

Of the numerous species of reptiles found in this province, the American alligator is the largest.

Description of wetland habitats:

- Organize by Cowardin classification type:
- Wetland classification codes and corresponding community type(s):

Description of other habitats:

- Riparian
- Uplands

List of wetland plant species with indicator status:

Regional specialized conventions:

Other discussion of mapping issues (image quality, water conditions, etc.):

References:

Cowardin, L.M., V. Carter, F.C. Goulet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. Office of Biological Services, Fish and Wildlife Service, US Department of the Interior, Washington D.C.

US Forest Service Website, Ecosystem Provinces -
http://www.fs.fed.us/land/ecosysgmt/colorimagemap/ecoreg1_provinces.html
(viewed 09/25/13)