

NYSDEC-TD-2

Nine Mile Swamp

Ecological Description and Proposed NYRI Power Line Construction Impact Analysis

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Ecological Description

Nine Mile Swamp (Swamp) is a large freshwater wetland complex located in the towns of Brookfield in Madison County and Sangerfield in Oneida County. It is protected under Article 24 of the New York State Environmental Conservation Law (ECL) and is assigned wetland identification number OF-9. Its wetland classification is Class I in Madison County and Class II in Oneida County. Based on the DEC regulatory wetland map, the wetland area covers 1556 acres and according to the National Wetland Inventory (NWI) map, the wetland consists primarily of a forested/shrub wetland cover type with the remainder as emergent wetland.

Most of Nine Mile Swamp has been inventoried by the New York Natural Heritage Program (NYNHP) and has been documented as "A large northern white cedar swamp" on either side of the Sangerfield River. The river, a marsh headwater stream, is bordered by a narrow band of shallow emergent marsh and shrub swamp that grades into a narrow band of floodplain forest which is surrounded by the northern white cedar swamp. The Swamp is bisected by two roads and a railroad. Agricultural fields border the margin of the Swamp. The portion of the Swamp south of Swamp Road is part of an 1100 acre natural area unbisected by roads." One additional comment regarding the resource states (from the NY NHP inventory): "This is a large diverse swamp; few exotics; with a narrow buffer, bordered by agricultural fields." (NYNHP, 1999)

In Central New York, northern white cedar swamps occur on organic soils in cool depressions with poor drainage. Typically, the soil is continually saturated with a stable water table fed by springs or seepage of cold, mineral rich groundwater and often is high in calcium content. The main identifying characteristic of this community type is the presence of northern white cedar (*Thuja occidentalis*), comprising 30% or more of the forest canopy layer. (Reschke, 1990) The NYNHP has assigned northern white cedar

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swamp as a biological community with a state rarity ranking of 'S2', indicating that it is considered very vulnerable in New York State. Some of the threats identified are introduction of exotic species, sedimentation from adjacent land uses, and logging of the timber. (NYNHP, 2008)

Staff from DEC Region 7 Bureau of Habitat conducted a site visit to the Proposed right of way (ROW) on November 17, 2008 to gain first hand knowledge of the wetland resource in order to better assess the impacts of the NYRI proposal. Staff accessed the Proposed Route by a railroad (RR) vehicle traveling south on the tracks beginning at Loomis Road and ending at Wickwire Road. In addition to determining the accuracy of the mapped wetland boundaries, the site visit allowed DEC staff to verify existing conditions of the proposed route and directly observe the ecological characteristics of the wetland area proposed to be impacted.

The mapped DEC wetland boundaries in the project footprint were consistent with the boundaries observed on the ground, except in two areas. South of Swamp Road and West of the RR, an abandoned agricultural field is in successional transition to wet field and scrub/shrub wetland vegetative cover types (Figure 1). The other map inaccuracy is located further south between NYRI station numbers 33 and 34 where the map depicts the wetland boundary shifting from one side of the tracks to the other (Figure 2). In both cases the NWI wetland map more accurately depicts the actual wetland boundaries for which DEC has jurisdiction.

Based on the NYNHP map the location of the northern white cedar swamp community type was found to be accurate and consistent with the forested wetland cover type identified on the NWI map (Figure 3). In the areas where the forested swamp cover type was adjacent to the RR ROW, there was a rapid transition from cleared ROW to mature forest without any transition vegetation or edge effects (Photo 1).



Photo 1. Looking West from RR

DEC staff also observed that the actual maintained width of the RR ROW was not consistent with the description in the NYRI applicaion. The NYRI application indicates that the RR maintains a 66 foot wide ROW free of woody vegetation. The actual cleared area currently being maintained is 30 to 40 feet wide (Photo 2).



Photo 2. Looking South

The areas of forested wetland representing the northern white cedar swamp plant community are characterized by having high tree species diversity and habitat quality. The dominant trees species observed were northern white cedar, red maple, eastern hemlock, white pine, and balsam fir, which is a locally rare species. The forest composition and structure indicated that it was at a mature stage of ecologic succession. We observed the following classic indicators that this is a mature forest and climax plant community: trees were of varying age classes; the canopy height was variable; many dead and down trees were present; and the forest floor was undulating. Large individual specimens of white pine (ca. 30 inch diameter) were commonly observed among the smaller trees. These features of forest structure and composition contribute to making the area excellent habitat for variety of native wildlife and plant species. Abundant deer sign was observe along the RR tracks as well as indications that the area is actively used by hunters.

Overall, the area represents a remote, contiguous, large wetland ecosystem that has not sustained any major human impacts. It is very similar to the forest tracts commonly seen in the wilderness areas of the Adirondack Park. Pristine natural areas such as Nine Mile Swamp are uncommon in the highly developed and agricultural landscapes of central New York.

Impact Assessment

The proposed route of the NYRI transmission line bisects Nine Mile Swamp in a North to South alignment, adjacent to a RR ROW. The project proposal calls for the construction of utility poles and establishment/maintenance of a 100 foot wide right of way free of woody vegetation. Based on review of proposed plans and insights gained from the field site visit, DEC staff concludes that the construction of utility poles and cleared ROW as proposed by NYRI will have significant effects and impacts on the natural resources contained within Nine Mile Swamp. Impacts associated with the proposed transmission line will affect the individual vegetative cover types of the wetland complex to varying degrees, however the anticipated effects to the northern white cedar swamp are the most pronounced.

The current mature state of the white cedar swamp and associated biological richness and habitat quality has developed over several centuries. The wetland does not exhibit any sign of significant change due to land use and does not appear to have ever been converted to agricultural land. Any loss of this vegetative community will therefore represent a permanent loss relative to a human time scale. The anticipated effect of pole construction is the permanent conversion of the pole footprint into hardened infrastructure. Because some sections of the northern white cedar swamp exceed 2000 feet along the proposed ROW, there will be no way to avoid placement of pole structures in these areas since maximum pole separation is about 800 feet. The construction and maintenance of the proposed ROW will involve impacting roughly 4 linear miles of white cedar swamp. Currently the RR maintains a ROW of 30 to 40 feet as observed on site. The proposal for the transmission line requires a 100 foot wide ROW in which vegetation will be cleared. Based on the figures, the anticipated cumulative impact will be elimination of the existing plant community in a swath 60 to 70 feet wide and 4 miles long which calculates to 30 to 35 acres of surface area. This amount of loss of northern white cedar swamp would represent a significant fraction of this plant community type that currently exists in the region.

Another landscape level impact on the ecology of the area that was considered is the increased fragmentation of the plant community. The additional clearing of the existing RR ROW will create a much greater distance between remaining segments of the mature, climax community thereby increasing the negative impacts of fragmentation on all organisms in the community. Movement of some species of animals across the clearing, especially amphibians which require high moisture and shade conditions, will be restricted.

As well, the widening of the existing ROW is anticipated to cause changes in solar radiation penetrating the adjacent forest, which will result in a change to such aspects as soil moisture levels, plant community composition, and microclimate. The existing RR ROW does not appear to be causing such effects on the adjacent forest, most likely

because the clearing is not wide enough to result in a significant increase of solar radiation.

Mitigation for the loss of this amount and type of wetland vegetation is not possible. The structure, composition, biodiversity, and habitat quality described previously would not be able to be re-created in any meaningful time frame that would compensate for the loss of the existing wetland functions.

Other anticipated impacts from construction include the compression and mixing of layers of soil, which is highly organic and deep in this wetland. The resultant soil compaction potentially would affect the plant species which may be able to (or could) become reestablished. The uses of construction equipment, placement of fill, and other construction activities also have the potential to introduce non-native exotic species into the native plant community. Once the construction phase is complete, the potential for introduction of exotic species will continue to exist due to periodic maintenance involving cutting equipment and the fact that the open aspect of a wide cleared area increases capacity for wind blown seeds to enter the area. Currently, the area remains free of exotic species that have severely degraded other wetland complexes in the region, and therefore makes this area especially critical in regard to preventing establishment of exotic species.

The proposed project may also affect the aesthetic quality of the Nine Mile Swamp. As I have discussed, the Nine Mile Swamp is a large, pristine ecosystem with an extensive native plant community that is rare for this region. The unique combination of a large undeveloped landscape with high quality natural resources makes this an extremely valuable natural resource in the Department's view.

The anticipated impacts associated with the proposed project are considered by DEC staff to be substantial and represent a significant loss of a valuable wetland resource. Because mitigation for the loss of wetland area and function specific to this wetland type is not a possibility and the total cumulative impacts are too extensive to accept as proposed, the only way to adequately conserve the wetland resource is to seek a transmission route that avoids Nine Mile Swamp. NYRI has identified one such alternative route that follows an existing utility RoW to the west of the proposed route and it is the recommendation of DEC that the alternate route be utilized for this project.

If the activities associated with the proposed project were being reviewed as standard Article 24 permit application, it would receive a recommendation for denial to the Division of Environmental Permits because the project fails to meet the standards for permit issuance as provided by 6 NYCRR 663.5(e).

References

New York Natural Heritage Program. 2008. Northern White Cedar Swamp Community Guide. Accessed 12/4/08 from <http://www.acris.nynhp.org/guide.php?id=9910>

New York Natural Heritage Program. 1999. Master habitat database, Natural heritage filtered element occurrence. Accessed through department GIS server 12/4/08.

Reschke, Carol. 1990. Ecological Communities of New York State. Hew York Natural Heritage Program, NYS DEC, Latham, NY.

Figures

Mapped DEC Wetland Compared to
NWI Wetland
Site 1

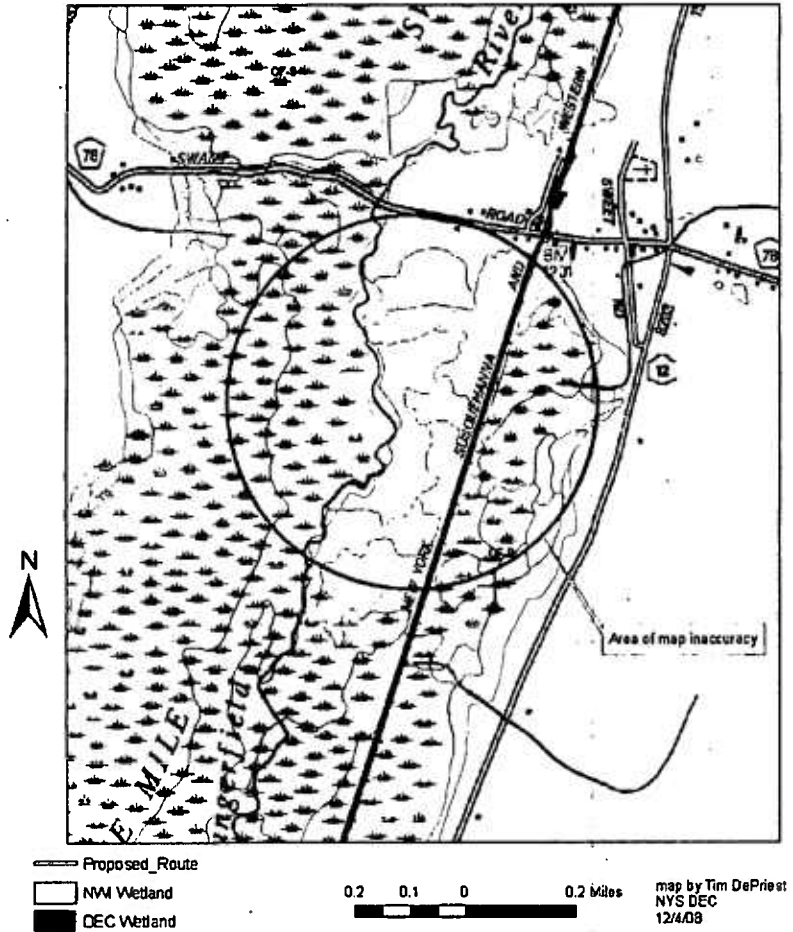


Figure 1.
Note: area appearing in light green on map indicates where DEC and NWI wetlands
overlay

**Mapped DEC Wetland Compared to
NWI Wetland
Site 2**

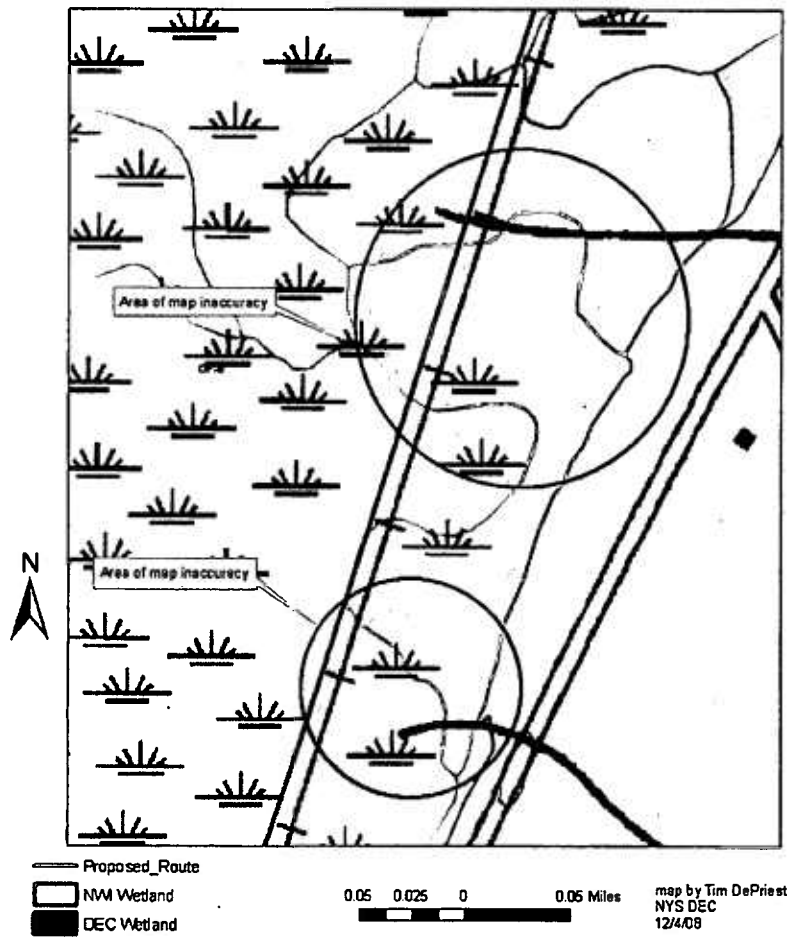


Figure. 2
Note: area appearing in light green on map indicates where DEC and NWI wetlands overlap

Northern White Cedar Swamp

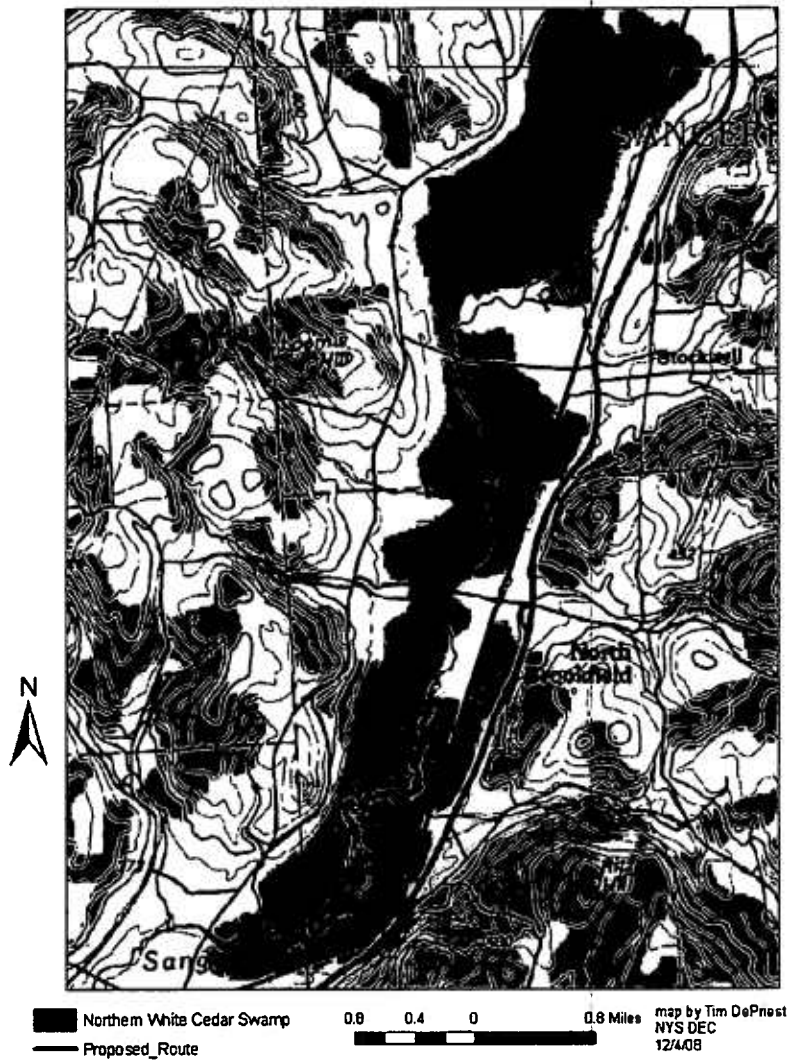


Figure 3. Location of northern white cedar swamp

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