# Draft Wetland Inventory Report

*for the*

**Alabama Ledge Wind Farm**
**Genesee County, New York**

***Prepared for***

**Alabama Ledge Wind Farm, LLC**
**3 Columbia Place**
**Albany, New York 12207**

*Prepared by*

TETRA TECH EC, INC.

**September 2007**

## TABLE OF CONTENTS



## FIGURES



## TABLES



## ATTACHMENTS

## 1.0 INTRODUCTION

This report presents the results of a field inventory of wetlands and surface waters associated with the proposed Alabama Ledge Wind Farm (the Project) located in Genesee County, New York. Alabama Ledge Wind Farm, LLC (the Applicant) proposes to construct a wind-powered generating facility in the Town of Alabama, Genesee County, New York. The proposed Project will consist of up to 52 wind turbines, each with a maximum capacity of 1.65-2.0 megawatts (MW), resulting in a total capacity of approximately 85.8 - 104 MW. In addition to the wind turbines, the proposed Project involves construction of associated components including permanent meteorological towers, a system of gravel access roads, buried and overhead electrical collection and communication cable networks, an operation and maintenance building (O&M building) and a substation with an associated point-of-interconnect (POI) facility.

Wetlands within the Project area fall under the jurisdiction of the New York State Department of Environmental Conservation (NYSDEC) and the U.S. Army Corps of Engineers (ACOE). New York State's freshwater wetlands are protected under Article 24 of the Environmental Conservation Law, commonly known as the Freshwater Wetlands Act. The NYSDEC defines wetlands as "Those areas of land and water that support a preponderance of characteristic wetland plants that out-compete upland plants because of the presence of wetland hydrology (such as prolonged flooding) or hydric (wet) soils. Freshwater wetlands commonly include marshes, swamps, bogs, and fens" (NYSDEC, 2005). The ACOE does not recognize delineations performed outside of the growing season.

Wetlands provide critical habitat to a variety of plants and animals, which are often dependent upon the characteristic attributes of wetland ecosystems. In addition to wildlife value, wetlands offer hydrological benefits such as water quality improvement, floodwater retention, and erosion control. Therefore, alterations or the destruction of wetlands may result in a decline in water quality downstream or in adjacent lakes. In addition, wetlands have a recreational significance as they contribute to the aesthetic value of the landscape as well as provide habitat to numerous game species of fish and wildlife. For example, these areas provide important hunting, fishing, bird watching, photography and other recreational opportunities.

Data collected during the Project wetlands inventory will be used to supplement information presented in the environmental impact statement, pursuant to New York's State Environmental Quality Review Act. In addition, information gained from this inventory will identify sensitive habitats and allow the Project Sponsor to locate Project facilities in ways that minimize or avoid unnecessary impacts to wetlands and surface waters. This report provides a description of the Federal and State freshwater wetlands identified in the Project area. Included are a description of the Project site, methods used to inventory wetlands, information reviewed, field inventory results, and references. Copies of sketch maps and field notes recorded during the field effort are provided in Appendix A. Prior to construction a formal onsite delineation of wetlands and surface waters will be conducted.

## 2.0 SITE DESCRIPTION

The Project would be developed on a portion of 3,663 acres of leased private land within a larger study area composed of approximately 7,959 acres. The study area consist of approximately 84 percent agricultural land (6,654 acres). In addition to agricultural land, approximately seven percent (586 acres) of the Project area is forested land, 4 percent is developed land and the remaining five percent contains grassland, shrubland, open water, and wetland cover types..

The Project is located in the Town of Alabama in the northwest portion of Genesee County, New York (Figure 1). The Project area is bound by Macomber and Slusser Roads to the east, Galloway Road to the south, Alleghany Road to the west, and Ham Road to the north. The substation is located just south of

Judge Road and west of Gorton Road adjacent to the existing National Grid (formerly Niagara Mohawk Power Corporation) 115 kV transmission line. Project elevations range from approximately 700 to 900 feet above mean sea level. Most of the Project area drains into the Oak Orchard-Twelvemile drainage basin through two named creeks located within the Project area: Brinningstool Creek and Whitney Creek. Both creeks are tributaries to Oak Orchard Creek to the north, which then flows into Lake Ontario. Some southern portions of the Project area drain into the Niagara drainage basin through Tonawanda Creek, located approximately one mile to the south of the Project location, which then flows west into the Tonawanda Channel of the Niagara River.

Interstate highway 90 (the New York State Thruway) is present within two miles south of the Project site oriented in an east-west direction. State highways, major local roads, and minor local roads bisect the Project area. State highway 77 (Alleghany Road) borders the western side of the Project boundary oriented in a north-south direction. State highway 63 (Judge Road) bisects the site in the northern portion of the Project boundary oriented in an east-west directions. Major local roads within the Project area include Maple Road, Townline Road, Ledge Road, and Wight Road.

## 3.0 METHODS

Methods described in the 1995 New York State Freshwater Wetlands Delineation Manual (Browne *et al.* 1995) were used to field inventory wetlands within areas potentially affected by the Project. For this inventory, boundaries were delimited primarily based upon visual inspection of vegetation and hydrology. Following completion of the inventory, the conceptual layout of the Project facilities was revised to avoid and/or minimize impacts to wetlands identified during the field effort and an additional desktop analysis was conducted delineate wetland and surface water boundaries associated with any relocated feature. Field and desktop wetland inventories serve to identify probable locations of wetlands that may be affected by construction and operation of the Project. For purposes of understanding the magnitude of these affects, the area of wetlands that are crossed by the Project layout was calculated using dimensions described in Table 1.

### 3.1 Information Review

Desktop information reviewed prior to field mobilization included U.S. Geological Survey 7.5-minute topographic maps, NYSDEC Freshwater Wetland and Stream Maps, National Wetland Inventory (NWI) Maps that were associated with the Project, and the Genesee County Soil Survey (USDA SCS, 1969).

### 3.2 Wetland Inventory Methods

A field review of the on-site wetlands was conducted from October 17, 2006 through October 25, 2006. All wetlands were identified within 250 feet of the proposed WTG locations, within a 75-foot wide corridor for the proposed access roads and buried electrical collection lines, and within a 150-foot wide corridor for overhead transmission lines. Wetland boundaries were determined by visual inspection of vegetation and hydrology. The identified wetland boundaries were marked in the field with pink surveyor flagging, and the corresponding GPS waypoints were recorded using a Trimble© GeoXT™ handheld unit. Data collection was limited to recording the dominant vegetation and cover type(s) and sketches of the wetland boundaries. Cover types assigned to wetlands were based on the NWI classification hierarchy (Cowardin *et al.*, 1979). Cover types were assigned by determining the most abundant cover type in the wetland. A wetland was assigned multiple cover types if more than one class comprised at least 30 percent aerial coverage. Copies of sketch maps and field notes recorded during the field effort are provided in Appendix A.

## 3.3 Stream Inventory Methods

Streams that crossed turbine locations, access roads, road widenings, or buried or overhead electrical collection lines were identified in the field and recorded on stream datasheets. Characteristics including width, depth, substrate, and bankside vegetation were noted. Wetland drainages were noted on sketch maps but not recorded on stream sheets unless definite features of streambed and bank were observed. If a stream was less than 5 feet wide only the location of the stream centerline was recorded; however, if the stream width was greater than five feet, the location of both banks was recorded. Stream locations were marked with pink surveyor flagging and the flagged points on the delineated centerlines or boundaries were recorded with the GPS unit.

## 3.4 Naming Conventions

Wetland and surface water naming conventions were used to standardize the way field inventoried features were recorded on datasheets, as GPS waypoints and during the desktop review. In the field inventory, wetlands identified within 250 feet of a WTG were identified as T wetlands, wetlands identified within the 75-foot right-of-way of an access road or road widenings were identified as AR wetlands, wetlands within the 75-foot buried electrical collection line corridor were identified as IC wetlands, and wetlands within the 150-foot overhead electrical collection line corridor were identified as TL. T wetlands were further identified by the turbine number with which they were associated, while wetlands identified in access roads and buried collection lines were assigned the number associated with the nearest WTG. Alphabetical suffixes were sequentially added when multiple wetlands or waterbodies were identified within the facility of interest. For example, a wetland within 250 feet of WTG 2 would be identified as T2-A, and a second wetland found within the access road outside of the 250-foot radius leading to WTG 2 would be identified as AR2-B. Stream names are consistent with the above description but include the suffix, "-ST" to differentiate between streams and wetlands. In the desktop review, wetlands and stream names were assigned as outlined in the field inventory, but contain the code "DR" to designate its origin from the desktop review.

## 3.5 Desktop and GIS Analysis

Wetlands and surface waters crossed by the Project layout were delineated using desktop delineation methods. This method compiled information from the NYSDEC Freshwater Wetlands and Streams mapped data (dated 1989), the NWI mapped data (dated 1977), USGS 7.5-minute topographic base maps (Oakfield 1976 and Akron 1981 quadrangles), recent aerial photography of Genesee County (dated 2003), and the Natural Resources Conservation Service (NRCS) soils maps for Genesee County (dated 1969) (mapped soil unit information was scanned into digital format and geo-referenced over the Project area). Using GIS ArcMap 9.1 software, these datasets were analyzed to identify probable locations of wetlands and surface waters. Wetlands delineated within 250 feet of a WTG were identified as T wetlands, wetlands delineated within the 75-foot right-of-way of an access road or road widenings were identified as AR wetlands, those within the 75-foot buried electrical collection line corridor were identified as IC wetlands, and those within the 150-foot overhead electrical collection line corridor were identified as TL wetlands.

# 4.0 RESULTS

Wetlands and surface waters crossed by the Project were identified in a two-tiered processs. First, a field-based inventory of wetlands and waterbodies was conducted for all Project facilities where access was available. Information from this field inventory was reviewed in GIS and used to modify the Project layout with emphasis on reducing impacts to wetlands and surface waters. A desktop review of the revised Project layout was then conducted to evaluate the potential impacts to wetlands and surface waters. This desktop review was then conducted on only those portions of the Project that were not reviewed in the field. A map of field inventoried and desktop delineated wetlands, based on the V11 Layout is provided in Figure 2.

## 4.1 Wetlands Associated with the Project Layout

Wetland cover classes identified in the Project site included palustrine forested (PFO), palustrine scrub shrub (PSS), palustrine emergent (PEM), palustrine unconsolidated bottom (PUB), palustrine aquatic bed (PAB), and PFO/PSS and PSS/PEM complexes, though not all cover classes would be impacted by the proposed Project. Most wetlands occur within the turbine laydown work areas (n=9 wetlands), with slightly fewer wetlands occurring in the access road rights-of-way (n=6) and buried electrical collection rights-of-way (n=4). One wetland was identified within the overhead electrical collection line rights-of-way, and no wetlands were identified within the footprints of the proposed substation and general laydown areas. The total acreage of wetlands that were identified within the Project access roads, buried electrical collection lines, overhead electrical collection lines, and WTG locations totaled 016, 0.38, 2.07 and 1.73 acres, respectively. Eight of the field reviewed wetlands were associated with mapped NWI wetlands, and three were associated with NYSDEC classified wetlands. These wetlands are detailed in Table 2.

A large wetland (224.4 acres) located in the southeast portion of the project is designated a prior converted cropland. Prior converted croplands (PC) are wetlands that were drained, dredged, filled, leveled, or otherwise manipulated, including the removal of woody vegetation, before December 23, 1985, to make production of an agricultural commodity possible. To be designated as PC these wetlands must also not meet the specific wetland hydrologic criteria, have had an agricultural commodity at least once prior to December 23, 1985, and have remained in agricultural production since December 23, 1985. Activities in prior converted cropland are not regulated under Section 404 of the Clean Water Act.

## 4.2 Surface Waters Associated with the Project Layout

Three perennial surface waters were identified within the Project area which would be affected by construction of various Project components. These waters included portions of Whitney Creek and unnamed tributaries to Oak Orchard Creek and Tonawanda Creek. Surface waters were identified within turbine, access road, and buried electrical collection network locations. Table 3 lists each watercourse crossed by the Project layout and lists the NYSDEC Stream Classification. Policies to preserve and protect New York lakes, rivers, streams and ponds are established under the Environmental Conservation Law (Article 15). New York designates surface freshwater resources based on best usage classifications and standards (6NYCRR Part 701) or on wild, scenic and recreation value (6NYCRR Part 666). Wild, Scenic and Recreation Rivers were not identified at the Site.

Certain waters of the State are protected on the basis of their classification pursuant to 6NYCRR Part 608 Protection of Waters. Protected waters include waters with the classifications and standards of: AA, AA(t), A, A(t), B, B(t) or C(t). State water quality classifications of watercourses within the Project area fall into one category, Class C streams. Classification C is for waters supporting fisheries and suitable for non-contact activities. Waters with C classifications may also have a standard of (t), indicating that it may support a trout population. No waters within the Project area with classifications of C have a standard of (t). Although Classification C perennial streams are not afforded protection under Article 15 of the New York Environmental Conservation Law, these streams would be subject to regulation by the ACOE under Section 404 of the Clean Water Act. In addition, small lakes and ponds with a surface area of 10 acres or less, located within the course of a stream, are considered to be part of a stream and are subject to regulation. NYSDEC stream locations are depicted in Figure 1.

## 4.3 Vegetation Associated with the Project Layout

Only dominant vegetation comprising at least 50 percent relative abundance was recorded in field notes. Vegetation observed in wetlands within the Project area included canopy species such as red maple, shrub species such as silky dogwood and willow species, and herbaceous species such as sedges, ferns, and rushes. Table 4 lists major plant species observed within wetlands during the field wetlands inventory.

## 5.0 RECOMMENDATIONS

Tetra Tech recommends that the Applicant conduct a complete wetland delineation using the 1987 ACOE three-parameter approach (i.e., presence of wetland vegetation, wetland hydrology, and hydric soils) during the 2007 growing season to verify the locations and extent of boundaries of wetlands and streams crossed by the Project. Field verification will allow wetland biologists to identify hydrologically connected and isolated wetlands, as well as to verify that all wetlands and waterbodies identified in the field inventory and desktop review meet the requirements of all three wetland parameters used in the ACOE delineation methods.

## 6.0 REFERENCES


Browne, S., Crocoll, S., Goetke, D., Heaslip, N., Kerpez, T., Kogut, K., Sanford, S., and Spada, D. 1995. *New York State Freshwater Wetlands Delineation Manual*. New York State Department of Environment and Conservation, July 1995. 35 pp plus appendices.

Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. *Classification of wetlands and deepwater habitats of the United States.* U. S. Department of the Interior, Fish and Wildlife Service FWS/OBS-79/31. Washington, D.C. 131pp.

New York State Department of Environmental Conservation (NYSDEC). 2005. Fresh Water Wetlands Program Division Information. Internet address: www.dec.state.ny.us/website/ dfwmr/habitat/fwwprog.htm.

Reed, P.B., Jr. 1988. *National list of plant species that occur in wetlands: Northeast (Region 1*). U.S. Fish and Wildlife Service, Biological Report 88(26.14). 111 pp.

United States Department of Agriculture, Soil Conservation Service (USDA SCS). 1969. Soil Survey of Genesee County, New York.

# Figures

# Tables

# Appendix A