

# **Appendix F**

## **Pale Swallow-Wort Control Plan**

Pale Swallow-Wort (*Cynanchum rossicum*)  
Control Plan for Upland Areas of Galloo Island

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## **1.0 INTRODUCTION**

The Hounsfield Wind Farm Project is a commercial scale wind farm project proposed by the Upstate NY Power Corp. (Upstate Power). The project includes the construction and operation of 84 wind turbines, the installation and operation of associated collection lines, and related facilities including docking facilities, ship channel construction, helipad, living quarters, parking areas, and operations and maintenance facilities on Galloo Island (the “Project”).

In addition to the construction activities associated with the project as set forth above, the transmission of the electricity will require construction and operation of an approximately 50.6-mile transmission line, together with interconnection facilities (substations) and other related facilities, linking Galloo Island with the New York State power grid. The construction and operation of the 50.6-mile transmission line is subject to the review jurisdiction of the New York State Public Service Commission (PSC) under Public Service Law Article VII. As such it is a Type II action under SEQRA (6 NYCRR §617.5(c) (35)) and therefore not subject to SEQRA review (6 NYCRR §617.5(a)) and is not included within the “Project”.

Galloo Island has no permanent residents however it has been inhabited periodically and developed since at least 1812. As such, a majority of the land has been altered by human activities (e.g., cedar forestry, agricultural crop growth, sheep grazing, etc.).

The construction of the project will likely occur over a three-year period. Construction will begin with the slip, temporary housing, and support systems. The following two years will include construction of the access roads, permanent housing, Wind Turbine Generators (WTG), and supporting infrastructure. Construction will occur both on land and in the waters of Lake Ontario. Materials and equipment will be delivered to the island by ship or barge.

The construction of the Hounsfield Wind Farm will require a number of permits from the New York State Department of Environmental Conservation (NYSDEC). These permits include but are not limited to Article 15 placement of fill in a state navigable water and Article 24 work or fill in a state regulated wetland. These permits triggered the SEQRA review of which the NYSDEC is the lead agency. As part of the mitigation indentified for the SEQRA review, this upland invasive species control plan has been prepared. Based on habitat assessments performed for the EIS, pale swallow-wort (*Cynanchum rossicum*) has been identified by far as the most significant invasive species issue on the island. Therefore, the upland invasive species control will focus on the issue.

### **1.1 Purpose**

This plan details the goals and methods for pale swallow-wort control on Galloo Island. Control of pale swallow-wort is being proposed by the project sponsor as mitigation for impacts to the island from the construction and operation of the Hounsfield Wind Farm.

Pale swallow-wort is a highly aggressive invasive species. It can form extensive patches, crowding out native plant species and significantly decrease biodiversity. This can then have an impact on various wildlife that inhabit the area, including grassland birds. It can be particularly competitive with native plants in areas with shallow soils over limestone bedrock; a common characteristic over much of Galloo Island.

Eradication of pale swallow-wort is difficult once it is established due to the fact that it forms a knobby mass of underground roots<sup>1</sup>. The plant usually emerges in the spring and flowers from June to July, followed by the production of seed pods. It then dies back to the ground during winter. Areas in direct sun will produce significantly more seeds than those that are in the shade<sup>2</sup>. The seeds can be spread by the wind as well as direct transfer, such as infested machinery. Seed dispersal usually occurs from late July into fall.

## **1.2 Goal**

The goal of pale swallow-wort control on Galloo Island will be two-fold. The first goal will be to prevent spreading swallow-wort seeds off of Galloo Island. The other goal involves reducing the existing concentration of this invasive species on the island. The goal will be to reduce the areal spread of pale swallow-wort by 20% each year for five years.

## **2.0 IDENTIFICATION**

The growth and spread of pale swallow-wort is a dynamic seasonal event, and as a result a baseline survey will be conducted to document the concentration at a time of year the plant is flowering. This survey will be completed as close to the commencement of construction as possible. A map will be created and distributed to the NYSDEC. This map will be used to establish the baseline condition of the invasive species and will be used to identify post-construction effects. Individual plants will not be identified, rather areas that show a 20% density of plants within the herbaceous layer (or understory) will be documented.

Areas of high swallow-wort concentration were identified during habitat assessments for the environmental impact statement. Although ubiquitous on the island the highest concentrations are generally found in the center of the island. There is little evidence of the plant in the developed areas, agricultural area or southern most tip of the island.

The preconstruction assessment will involve all portions of the island under property control for the project. The assessment will classify areas of infestation as low – less than 20% presence; medium 20-40% presence; and high – greater than 40% presence.

## **3.0 CONSTRUCTION PHASE**

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<sup>1</sup> Plant Conservation Alliance's Alien Plant Working Group <http://www.nps.gov/plants/alien/fact/cyrol.htm>

<sup>2</sup>Fire Effects Information System <http://www.fs.fed.us/database/feis/plants/vine/cynspp/all.html>

### **3.1 Invasive Plant Removal and Control**

#### **3.1.1 Control Options:**

There are no known biological controls available. Control must be manual, mechanical or chemical. Manual control includes removal of the plant's seed pods before they open and then burning or land filling to prevent seed release, or removal of entire plants and then burning. Mechanical control such as mowing will not eradicate the plant but can be used to prevent a seed crop. To prevent a seed crop, cutting should be done from early to mid-July when there are small immature pods on the plant. Chemical control is the spraying of herbicides when the plant is actively flowering<sup>3</sup>.

Personnel should stay out of patches of the plant that are actively dispersing seeds. All machinery that has travelled through patches of the plant when it has maturing or dispersing pods should be cleaned.

#### **3.1.2 Chemical Control**

Areas identified as having high infestation within an area of 100 square feet will be treated through the use of chemical controls. Chemical control includes the use of two systemic herbicides: trichopyr esthers and glyphosates such as Garlon 4 and Roundup Pro, respectively. They should be applied when the plants are actively growing, after flowering has commenced. This application will be done by a licensed pesticide applicator.

#### **3.1.3 Mechanical Control**

Mechanical control may be used (in additional to chemical control) in areas that are scheduled for construction prior to the time when the plants would flower. Mowing will not eradicate the plant but can be used to prevent a seed crop. To prevent seed crop, cutting should be done from early to mid-July when there are small immature pods on the plant. If pods return and reach maturity during summer or fall they will be mowed again.

### **3.2 Sanitation/Machinery**

If construction equipment needs to cross through or work in areas identified as having concentrations of pale swallow-wort from late July to early fall, then all equipment shall be cleaned with portable power washers before continuing to other locations on the island. This will not be required if the equipment is using, and does not leave, an established gravel road.

All machinery and worker boots will be inspected and cleaned prior to leaving or arriving on the island. Specifically, any equipment leaving the island will be cleaned with a high pressure washer, and will then be driven to the dock along gravel roads. Any soil or debris will be removed and the equipment will be inspected to ensure cleanliness.

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<sup>3</sup> Plant Conservation Alliance's Alien Plant Working Group <http://www.nps.gov/plants/alien/fact/cyro1.htm>

## 4.0 Operation Phase

### 4.1 Restoration

After removal of pale swallow-wort, restoration consists of native species replanting that were in the area prior to disturbance. The recommended seed mixture is presented below. The NYSDEC will be consulted prior to restoration for further input on the final seed mixture.

**Table 4-1  
Recommended Seed Mixture**

<b>Percent by Weight</b>	<b>Species</b>	<b>Pure Live Seed (PLS)</b>
40	Annual Ryegrass ( <i>Lolium multiflorum</i> )	100
30	Perennial Ryegrass ( <i>Lolium perenne</i> )	100
30	Tall Fescue ( <i>Festuca arundinacea</i> )	100

### 4.2 Monitoring and Maintenance

Initial control efforts should concentrate on plants in the sunny areas since they will be the ones producing the most seeds. Control objectives consist of a 20% annual decrease in pale swallow-wort over a five year period which will be compared to the pre-construction baseline survey.

Following the pre-construction baseline survey, a monitoring survey will be done every year for five years. Following the survey, chemical treatment will be concentrated in areas of highest concentration and in areas where new infestations are noticed. Each year, a comparison of yearly results will be done with the initial assessment and the survey of the prior year to gauge effectiveness of control efforts.

During project operation, additional maintenance activities that occur in infested area will require the cleaning of the machinery and other in-ground equipment prior to leaving the island.