

## COASTAL FISH & WILDLIFE HABITAT RATING FORM

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Name of Area: **Derby Hill**

Designated: **October 15, 1987**

County: **Oswego**

Town(s): **Mexico**

7½' Quadrangle(s): **Pulaski, NY**

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| <u>Score</u> | <u>Criterion</u>   |
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| <b>0</b>     | Ecosystem Rarity (ER)<br>Upland fields, woodlands, and bluffs, not a rare ecosystem type.  |
| <b>0</b>     | Species Vulnerability (SV)<br>No endangered, threatened or special concern species reside in the area.   |
| <b>33</b>    | Human Use (HU)<br>A valuable site for observation of migratory birds; a major source of population data in northeastern US, and one of the most popular birdwatching areas in New York.                                      |
| <b>0</b>     | Population Level (PL)<br>Concentrations of raptors observed here during spring are unusual in New York State, but the species seen here are probably concentrated at many locations along the eastern shore of Lake Ontario. |
| <b>0.8</b>   | Replaceability (R)<br>Concentrations of migrating hawks are irreplaceable, but replacement of the public viewing area may be possible.   |

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SIGNIFICANCE VALUE = [( ER + SV + HU + PL ) X R]

= **26**

## **DESIGNATED HABITAT: DERBY HILL**

### **LOCATION AND DESCRIPTION OF HABITAT:**

Derby Hill is located along the southeastern shore of Lake Ontario, approximately four miles north of the Village of Mexico, in the Town of Mexico, Oswego County (7.5' Quadrangle: Pulaski, N.Y.). The fish and wildlife habitat is a small drumlin, containing abandoned fields, woodlots, and active agricultural lands. Derby Hill drops off abruptly into Lake Ontario, from an elevation of 316 feet above mean sea level (approximately 60 feet above the lake). This area includes most of the 60 acre Derby Hill Bird Observatory, which is owned and operated by the Onondaga Audubon Society. Derby Hill is generally surrounded by rural residential and agricultural land uses.

### **FISH AND WILDLIFE VALUES:**

Derby Hill is the highest point of land along the shoreline of eastern Oswego County. Its location on the southeastern shore of Lake Ontario places it within a major corridor for spring hawk migrations in New York State. As raptors migrating north from southerly wintering grounds approach the lake, they veer eastward, and follow the shoreline. Thus, the southeastern corner of Lake Ontario becomes a funnel through which tens of thousands of birds pass between March and May. Derby Hill represents only a small segment of the spring hawk migration route, and probably offers little in the way of useful habitat for birds. However, it is one of the few locations where major hawk concentrations have been documented. As many as 60,000 raptors have been observed at Derby Hill during a single season. The average number recorded from 1979-1983 was approximately 50,000 birds per year, more than were reported from any other location in New York State. Species commonly sighted at Derby Hill include broad-winged hawk, sharp-shinned hawk, and red-tailed hawk, along with lesser numbers of red-shouldered hawk (T), northern harrier (T), osprey (T), bald eagle (E), and golden eagle (E). In addition to raptors, many other birds, such as waterfowl, jaegers, gulls, and terns, can be observed here, especially during fall migrations (September - October, primarily).

Derby Hill is one of the most important hawk watching sites in the northeastern U.S. During spring migrations, birdwatchers from throughout New York and several adjacent states arrive to observe and count migratory birds. The most popular viewing areas are the "north lookout", overlooking Lake Ontario, and the "south lookout", located along Sage Creek Road about one-quarter mile north of N.Y.S. Route 104B. Data collected here and at other locations in North America are used by wildlife agencies and scientific organizations to monitor and investigate trends in raptor populations. The Onondaga Audubon Society also sponsors environmental education activities at Derby Hill.

### **IMPACT ASSESSMENT:**

A **habitat impairment test** must be met for any activity that is subject to consistency review under federal and State laws, or under applicable local laws contained in an approved local waterfront revitalization program. If the proposed action is subject to consistency review, then the habitat protection policy applies, whether the proposed action is to occur within or outside the designated area.

The specific **habitat impairment test** that must be met is as follows.

In order to protect and preserve a significant habitat, land and water uses or development shall not be undertaken if such actions would:

- destroy the habitat; or,
- significantly impair the viability of a habitat.

*Habitat destruction* is defined as the loss of fish or wildlife use through direct physical alteration, disturbance, or pollution of a designated area or through the indirect effects of these actions on a designated area. Habitat destruction may be indicated by changes in vegetation, substrate, or hydrology, or increases in runoff, erosion, sedimentation, or pollutants.

*Significant impairment* is defined as reduction in vital resources (e.g., food, shelter, living space) or change in environmental conditions (e.g., temperature, substrate, salinity) beyond the tolerance range of an organism. Indicators of a significantly impaired habitat focus on ecological alterations and may include but are not limited to reduced carrying capacity, changes in community structure (food chain relationships, species diversity), reduced productivity and/or increased incidence of disease and mortality.

The *tolerance range* of an organism is not defined as the physiological range of conditions beyond which a species will not survive at all, but as the ecological range of conditions that supports the species population or has the potential to support a restored population, where practical. Either the loss of individuals through an increase in emigration or an increase in death rate indicates that the tolerance range of an organism has been exceeded. An abrupt increase in death rate may occur as an environmental factor falls beyond a tolerance limit (a range has both upper and lower limits). Many environmental factors, however, do not have a sharply defined tolerance limit, but produce increasing emigration or death rates with increasing departure from conditions that are optimal for the species.

The range of parameters which should be considered in applying the habitat impairment test include but are not limited to the following:

1. physical parameters such as living space, circulation, flushing rates, tidal amplitude, turbidity, water temperature, depth (including loss of littoral zone), morphology, substrate type, vegetation, structure, erosion and sedimentation rates;
2. biological parameters such as community structure, food chain relationships, species diversity, predator/prey relationships, population size, mortality rates, reproductive rates, meristic features, behavioral patterns and migratory patterns; and,
3. chemical parameters such as dissolved oxygen, carbon dioxide, acidity, dissolved solids, nutrients, organics, salinity, and pollutants (heavy metals, toxics and hazardous materials).

Although not comprehensive, examples of generic activities and impacts which could destroy or significantly impair the habitat are listed below to assist in applying the habitat impairment test to a proposed activity.

Any activity that restricts or eliminates public access to Derby Hill, or obstructs views from the site, would adversely affect important human uses of the area. Existing areas of natural vegetation at Derby Hill should be maintained to provide potential resting, perching, or feeding sites that may attract birds within close view. Placement of tall structures on Derby Hill (or elsewhere along the eastern Lake Ontario shoreline) could result in significant mortality of birds migrating through the area.