# STATE of the STRAIT

## ECOLOGICAL BENEFITS OF HABITAT MODIFICATION







DETROIT RIVER AND WESTERN LAKE ERIE

2010

**Cover photos:** DTE's River Rouge Power Plant in Michigan by Chris Lehr/Nativescape LLC; Lower left: Legacy Park in Windsor, Ontario by Essex Region Conservation Authority; Lower middle: Elizabeth Park in Trenton, Michigan by Emily Wilke/Detroit River International Wildlife Refuge; Lower right: Fort Malden in Amherstburg, Ontario by Essex Region Conservation Authority.

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# 5.13 STATE OF DETROIT RIVER BALD EAGLES (HALIAEETUS LEUCOCEPHALUS) WITH CANADIAN BIRTH CERTIFICATES

Introduction

The Essex County Field Naturalists' Club and Bird Studies Canada undertook a project in partnership with the Detroit River Canadian Cleanup Public Outreach Committee and the City of Windsor in creating a unique opportunity to monitor bald eagles (*Haliaeetus leucocephalus*), a provincially-endangered species that nests on the Detroit River.

The project was designed to improve the capabilities of local and regional monitors and biologists to better understand and assess the health of nesting bald eagles on the Detroit River using satellite telemetry, banding and blood analysis. Even though the relative productivity of eagles on the Detroit River (and Essex County) had significantly increased, there were no known local birds returning to established or newly occupied territories. The satellite tracking program would assess survivorship after fledging and post-season dispersal. The project also was designed to provide the residents of the region an opportunity to "log into" the lives of specific eagles as a medium for greater public understanding of the Detroit River as an Area of Concern; as well as increasing awareness of ongoing environmental issues.

To accomplish this for specified nest sites along the Detroit River and at Point Pelee National Park, habitat improvement measures were undertaken to secure bald eagles in preferred nest sites and provide safer access for the monitoring team to assess active nests.<sup>1</sup> This was intended to be accomplished by constructing artificial platforms in currently occupied nest territories. Monitors realized that bald eagles occupying breeding territories had built nests in trees compromised by age and weather damage, as these typically were the biggest trees available to them. Almost all were eastern cottonwoods (*Populus deltoides*) and several nest failures in three separate locations resulted from the failure of the tree.

Bald eagles had returned to the Detroit River and all the major wetlands of Essex County with the exception of Point Pelee National Park. When nest sites were plotted using aerial geomatic images, it was discovered that there was some commonality to nest location and a preference had been identified. Of nine nesting territories in Essex County, seven were in close proximity to a very large water body (Lake Erie, Lake St. Clair or the Detroit River) and positioned on the barrier beach of an associated wetland complex or within the wetland itself. The other observed preference was that nests occurred at elevations of 22 m or greater aboveground. Of the five nest sites on the Detroit River, two had tree failures causing the loss of eggs or chicks for that breeding season.

<sup>1</sup> This extended abstract only discusses the habitat enhancement portion of the associated Destination Eagle Project in keeping with the theme of the 2009 State of the Strait Conference.

#### Methods

Sites for the prospective artificial nests were assessed on available quality trees with the opportunity to install a platform at least 21.3 m aboveground, close to open water and wetland habitat, and where bald eagles were currently occupying territory. Sites for



Figure 1. Suitable leaf arrangement was necessary to allow the constructed nest to be placed close to the tree's trunk.

artificial platforms were developed for Peche Island (City of Windsor) and Point Pelee National Park. Boblo Island (Town of Amherstburg) was also considered but difficulties in finding a suitable nest location and tree ultimately resulted in structurally reinforcing the existing nest tree, particularly the major limb supporting the nest itself. The National Park site was an exception to the site selection criteria in that bald eagles had not nested in the park for over 60 years and it was determined that recruitment to an artificial platform was not going to have the same degree of success as having established birds use a platform erected in their current breeding territory.

Trees were selected based on their location, general health and structure. Structurally, the tree needed to have a limb arrangement to allow the nest platform to be placed close to the main trunk (Figure 1) and provide (or have limbs removed) a suitable open canopy which allowed an approach in and out of the nest for adults. The intersection of the main trunk and scaffold limbs also needed to be greater than 21.3 m. The platform itself is a 0.91 m × 0.91 m square, constructed of 6.35 cm angle iron welded at the corners with a 15.24×15.24 cm welded wire mesh (concrete mesh) welded into the bottom. The metal framework and mesh were painted flat black to

make it less conspicuous and protect it from rusting. The platform is loosely U-bolted to two 5.1×15.24 cm pressure-treated wood "rails" which are bolted through the tree trunk and scaffold limb with threaded rod. The tree climber(s), once the platforms were installed, then had nest material hoisted to them. Two large (1.5 m or greater) limbs are attached to the frame of the platform (with plastic tie wraps) at diagonal corners

overhanging the frame. This and the open mesh of the bottom of the frame were then filled with course sticks and increasingly less course material up to the final "nesting layer," which was mainly composed of leaf litter and soft twigs (Figure 2). A light line was placed in the tree to allow a climbing rope to be attached from the ground and pulled up for later access by the monitoring team.

#### **Results and Discussion**

It has generally been recognized that the local (Essex County) bald eagle population has been expanding, with relatively high productivity. It has also been observed that breeding territory abandonment, specifically on Peche Island, has been observed after four consecutive years of nest failure, due to loss of the nest tree. The construction of artificial nests from



Figure 2. Leaf litter was placed in the constructed nest.

a habitat enhancement perspective has helped to secure breeding birds in habitats with compromised conditions and in one case, Point Pelee National Park, recruited a breeding pair of birds to an otherwise unoccupied territory.

Peche Island did not have adults occupy the artificial nest structure because they had relocated elsewhere in the territory, but the platform is serving as a foraging perch. Fish and bird remains are routinely found in and under the platform. The location of the active nest in this territory is known. It is the intention of the monitoring team to reposition this nest to make it higher and hopefully attract the adults back to the island from the current mainland site, which is increasingly more disturbed.

Point Pelee National Park recruited a new breeding pair of adults to the artificial nest in the first season it was erected. Bald eagles occupying nest sites in that region were known to have nested, thus proving the recruitment of a new pair. The platform was unoccupied during the second season, but a pair of eagles was regularly observed.

Boblo Island had two naturally occurring nest locations. One tree failed and the other has remained the active nest site in 2007 and 2008. It has not been possible to place a platform at Boblo because there are no trees of suitable height. However, the current nest tree has been assessed and some structural reinforcement (limb removal/cabling) added to help prevent the nest from failing.

Despite the success of recruiting a pair of bald eagles to Point Pelee National Park, it is unlikely that habitat enhancement, specifically the construction of artificial nesting platforms, will attract bald eagles to breed. The habitat features surrounding the site may prove not to be suitable for bald eagle nesting. However, habitats that have eagles foraging or loafing may have a much better chance of recruitment. Habitat enhancement has proven to be a good tool to retain nesting pairs in marginal habitats and increases productivity by creating a secure nest or improving the structure of the nest tree.

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