



**CESU Final Report Summary for Wetlands of the Eastern and Southern Shores  
of Lake Ontario: Project Completion Report  
W912HZ-11-2-0017**

**Purpose:** The present study was initiated to establish baseline conditions for major coastal wetland types from Braddock Bay in the west to Cape Vincent. These conditions would serve as one benchmark for monitoring the effect of any future changes in water level regulation on coastal wetlands. By classifying wetlands into various types, the study results could also aid in random selection of wetlands for detail vegetation assessment and monitoring in the future.

**Location:** Braddock Bay in the west to Cape Vincent, Lake Ontario

**Methods:** The study involved a combination of field investigations, interpretation of aerial imagery, and various data analyses through geographic information technology and laboratory analysis of soil samples. The results of this study are presented in three chapters: 1) inventory, 2) vegetation, and 3) soils.

**Results:** The wetlands inventoried by this project were aquatic beds, emergent types (marsh and wet meadow), mixed emergent-shrub swamps, and shrub swamps. While the target mapping unit was 0.5 acres, many wetland areas were identified that were much smaller than this size. Within the study area, approximately 11,420 acres of vegetated wetlands were inventoried. Cattail marshes were the predominant wetland type, accounting for nearly 4,800 acres. This total represented about three-quarters of the study area's marshes, and possibly more as cattails may be well-represented in the "other marsh" type which did not possess the typical cattail photo-signature. Overall, marshes made up 82 percent of the emergent wetlands, occupying over 6,300 acres of the 7,687 acres of marshes and wet meadows. There was nearly 1,200 acres of emergent wetland where marsh and wet meadow were intermixed showing the effects of fluctuating water levels that characterize Lake Ontario.

Over 125 species of plants were observed growing in the wetlands examined (Appendix B). Among the most frequently observed species were duckweed (*Lemna minor*), European frog-bit (*Hydrocharis morsus-ranae*), white water lily (*Nymphaea odorata*), narrow-leaved cattail (*Typha angustifolia*), hybrid cattail (*Typha x glauca*), broad-leaved cattail (*T. latifolia*), big bur-reed (*Sparganium eurycarpum*), reed canary grass (*Phalaris arundinacea*), bluejoint (*Calamagrostis canadensis*), lake sedge (*Carex lacustris*), buttonbush (*Cephalanthus occidentalis*), speckled alder (*Alnus incana* ssp. *rugosa*), and swamp loosestrife or water-willow (*Decodon verticillatus*). Invasive species of note were European frog-bit, hybrid cattail, water chestnut (*Trapa natans*), purple loosestrife (*Lythrum salicaria*), and multiflora rose (*Rosa multiflora*).

The values obtained from the soil analyses undertaken vary greatly based on the type of

wetland the samples were taken from, and the location along the lake shore (southern shore, areas 1, 2, 3 vs. eastern shore, area 4). This variability does not allow general conclusions to be drawn, even within geographic area, but suggests many correlations and possibilities for future work. This study does, however, provide enough detailed information so that future studies can focus on specific wetland ecosystems, allowing replication of plots based on existing soil data. These data will also serve as a baseline (or point in time) to measure future changes against.

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