

Scirpus longii (Long's bulrush) Survey

RARE, THREATENED AND ENDANGERED (RTE) SPECIES PROJECT

Site Location: Eastern Massachusetts
Client: Confidential Client
Date: 2010

O'Reilly, Talbot & Okun Associates (OTO) conducted a rare plant survey at a contaminated site in eastern Massachusetts. Review was provided by the Natural Heritage and Endangered Species Program (NHESP).



Due to the presence of hazardous chemicals in an area of fill material at the site, it was determined that limited remediation would be needed. As part of the proposed remediation, debris would be removed, fill material along the banks of the adjacent major river would be stabilized, and native riparian zone vegetation would be established. Upon completing their review of the project, the NHESP indicated that the cleanup could potentially affect individuals of the state-listed Threatened wetland plant species *Scirpus longii* Fern. (Long's bulrush) and associated habitat. Given the potential for adverse effects, the NHESP required that a survey be conducted by a qualified botanist.

Following NHESP approval of the OTO botanist and survey methodology, cover types were identified on the Site. Within each cover type, sample plots were used to characterize the vegetation and descriptive metrics were reported including: (1) species richness; (2) percent cover; (3) relative dominance; (4) relative frequency; and (5) an Importance Value (*IV*). Other vegetation data included structural attributes such as diameter at breast height (dbh). Habitat data were collected including percent solids and total organic carbon (TOC) of wetland soils; percent rubbed fiber content; water depth; and water quality data: temperature (°C); conductivity ($\mu\text{s}/\text{cm}$); dissolved oxygen (mg/L); pH; oxidation-reduction potential (ORP as mV); and turbidity (nephelometric turbidity units, NTUs).

Based on the presence of woolgrass (a species similar to Long's bulrush) and known habitat requirements, the survey for Long's bulrush was conducted within emergent dominated portions of a shrub swamp. The survey did not identify the presence of Long's bulrush. Likely reasons for the absence of Long's bulrush cited by OTO included: eutrophication; competitive interactions with the invasive species *Lythrum salicaria* (purple loosestrife); anthropogenic disturbance; and potentially, the "wetness" of the shrub swamp, which is dominated by the obligate wetland shrub species *Cephalanthus occidentalis* (buttonbush).

The NHESP agreed with the findings of the OTO survey and concluded that the proposed project would not result in a prohibited "take" of Long's bulrush.