New England Botanical Club – Minutes of the 965th Meeting

2 February 2001 Prepared by Lisa Standley, Recording Secretary pro tempore

The 738th meeting of the New England Botanical Club, being the 965th since the original organization, met in the Main Lecture Hall of the Biological Laboratories, Harvard University, Cambridge Massachusetts on Friday, February 2, 2001. President Lisa Standley called the meeting to order at 7 PM, with 41 members and guests present. Guests were introduced, followed by the announcement of one new member, Sean Blaney of the Atlantic Canada Conservation Data Center. She led a round of applause for Nancy Eyster-Smith to thank her for organizing January's successful potluck dinner. Lisa Standley also announced that copies of Robert Bertin's *Flora of Worcester* were still available, and that CD-ROM versions would be available at the March meeting. Nancy Eyster-Smith announced she had flyers for the New England Wild Flower Society's upcoming traveling symposium. Pat Swain described the Natural Heritage Program's Small Research Grant request for proposals. Pat Swain also noted that applications for the Graduate Student Award were due on March 1st and encouraged students engaged in research on the New England flora to apply. Barre Hellquist read the report of the Nominating Committee, and Lisa Standley reminded members that the Annual Meeting and election of officers would be held on March 2nd.

Paul Somers rose next to describe the upcoming meetings, and to introduce the evening's speaker, Dr. Stephanie Neid of the Massachusetts Natural Heritage and Endangered Species Program's BioMap project. Dr. Neid, a Midwesterner by birth, discussed the results of her doctoral research at the University of Minnesota, where she studied the effects of deicing salts on roadside vegetation. One of the objectives of her research was to identify native halophytes, especially grasses, that could be used to stabilize roadsides along the highly-salted Minnesota highways. Out there in the snowy heartland, the heavy use of sodium chloride on highways kills vegetation within 3 meters of the edge of pavement, leading to spring erosion. Minnesota DOT has been exploring grass seed mixtures that will withstand high soil salinity and restore native species along the highways.

Natural inland salt marshes – termed 'saline wet prairie' – occur in several locations in western Minnesota, particularly in the Red River Valley, the footprint of Glacial Lake Agassiz. Coastal New England botanists would feel at home in these saline seeps, where mud flats, *Salicornia, Distichlis spicata, Suaeda*, *Spartina* and *Hordeum jubatum* dominate. Stephanie used greenhouse-grown plants and seeds from two disjunct populations of *Distichlis spicata* and *Puccinellia nuttalliana*, as well as the cultivated *P. distans*, to determine how increasing concentrations of salt affect germination, growth, and flowering, and to determine if there were ecotypic differences between populations.

She learned that there are no significant differences among populations of *Puccinellia distans*, probably as a result of selection and controlled breeding. *P. distans* also is least affected by high salt concentrations, which accounts for its success in migrating along highways. Both *P. nuttalliana* and *Distichlis* showed considerable variation between populations in their response to salt, indicating that ecotypic differences have evolved. An electrophoretic isozyme 'fingerprint' supported this conclusion. With respect to the application of her findings, Stephanie concluded that *Puccinellia nuttalliana* has the potential to become an important plant for roadside revegetation and stabilization. Artificial selection may be useful for identifying the most salt-tolerant ecotypes and for promoting their salt tolerant qualities. *Distichlis*, which has very specific seed germination requirements and grows best at intermediate salt concentrations, may be less suited to roadside use unless rhizome planting techniques are used.

The meeting adjourned to refreshments and discussion at 8 PM.