Eastern Invasives Management Network
Workshop # 3, March 2003

Sandy Neck/Barnstable Harbor, MA

1) What conditions would have to prevail to allow you to reduce (or maintain) the invasive species threat rating (s) on your conservation area to MEDIUM or LOW. Use condition statements to form objectives for your conservation area and where possible state them in quantitative terms. For invasive species threats currently rated as VERY HIGH, state the conditions that would have to prevail in order for it to be rated one level lower.

2001 site conservation planning results

- dune/forest/swale system = VERY HIGH (Phragmites was in 55 of 133 swales (about 10 acres) plus about 5 acres in immediately adjacent marsh – much more further away in marsh)
- saltmarsh = MEDIUM (many acres at upper edge of saltmarsh, but unmeasured at this time, low priority)

Conditions for ranking dune/forest/swale = MEDIUM

- Removal of all Phragmites in swales with native (non-poison ivy) species (estimate of 29? of 55 swales)
- Purple loosestrife and other invasives are kept out of system. All of *Panicum amarulum* is removed. Black pine is either girdled or determined to be a non-threat.
- Ongoing town program exists to keep invasives from moving into new areas.

2) Since invasive species can move into your conservation area from outside you probably need to consider conditions in upstream areas, upwind areas or a buffer zone surrounding it. What area(s) beyond the bounds of your conservation area do you believe should be included when assessing invasive species threats?

We know that the Phragmites in the far saltmarsh will be an ongoing source population, however, it is too extensive to control easily and is low priority because of probable limited impacts to the marsh. We may control the Phragmites in the marsh immediately adjacent to the site to limit the source population, but the swale control is first priority. We also know that many invasives are already on Cape Cod so we need to be on the lookout for the usual suspects, particularly for bird dispersed species (e.g. oriental bittersweet). The parking area is a possible source of weeds so increased awareness and vigilance in this area of the site will be important.

3) Identify 3 to 5 strategies that will allow you to achieve the objective(s) you identified in question 1.

a) Develop permanent invasive control program at this site within the town; assist town to obtain funding for control and monitoring.
b) Do traditional control of Phragmites in swales with native species (cut & drip).
c) Attempt spray control in very dense swales to see if it is possible to restore these swales to native vegetation. If not, we may have to abandon these swales.

d) Communicate with cottage owners and other key stakeholders at site with the goal of gaining their support to assist in convincing the town of the importance of investing in and continuing the project.
e) Recent research results indicate that N levels may be elevated above normal levels in this system. If the groundwater is contaminated we need to determine where the source is located. The source will determine strategy for next steps.

4) Identify at least one way that you could measure (monitor) progress towards the objectives you identified in question 1. Be as specific as you can about the species, factor, or indicator to be monitored and the kind of data (e.g. cover, density, concentration, total area covered, etc) to be gathered.

a) The simplest way to monitor progress overall is to count the number of swales with Phragmites that are treated. In 2002 we treated 14 of the 55 swales invaded by Phragmites (25%). Preliminary kill rate seemed to be about 80-90%, but this will have to be confirmed during the next growing season. However, this does not get at native community recovery.

b) In addition, in 2002 we initiated a pilot monitoring project. One of the goals was to reduce stem density by 50% in treated swales.

Sampling Objective:
We want to be 90% certain of detecting a 50% decrease in density between 2002 and 2003 and I am willing to accept a 10% chance that I will make a false change error.

a) Intensively monitor three treated swales and 2 controls (also with Phragmites)

1. Plots

i. Establish permanent baseline with rebar at each end and GPS rebar locations.
ii. Randomly pick 20 plots (.5m squared) off of random transects off this baseline.
iii. Count number of Phragmites stems in each plot, estimate % cover of native plants and % cover of Phragmites thatch, estimate average height of Phragmites in plot
iv. Describe swale (e.g. all Phragmites, Phragmites coming up through natives, amount of thatch
v. Treat Swale if needed and measure again next year