Eastern Invasives Management Network
Workshop # 3, March 2003

Quinebaug Highlands, CT

1. State clearly what conditions (invasive species distribution, abundance, etc) 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.

The initial site conservation plan for the Quinebaug Highlands listed the overall threat of invasive species as low. A variety of invasives are known throughout the project's core forest area of 34,000, and while it is our hope to begin control of certain populations, it is equally important to ensure these species do not begin to proliferate to an extent that they would become a threat rated higher than low. To that end, it would be important to develop a regular monitoring schedule, whereby the current threat level of invasives could be tracked. Following initial control efforts, are the problem species still present? Are they expanding? Knowing what method of dispersal each plant has is important, whereby we could seek to limit those pathways in addition to controlling the plant itself.

Other factors need to be considered, such as the role of deer herbivory; can selective browsing by deer prevent successful forest regeneration, creating conditions favoring invasives? Is prescribed fire recommended for both invasive control and forest regeneration?

To maintain the current low threat level, it is important to minimize disturbance to the 34,000 acre core forest area. Significant tracts are already protected (Yale University forest, State DEP holdings), though neither party is likely to take a hands off approach to their lands. With the initial invasive species assessment done by TNC in 2001 (and follow up in 2002), we have done a certain amount of analysis (soils, past land use, etc.) and have identified several areas we will recommend as potential old growth forest stands, where no active management (harvest, research) would take place. Discussions along these lines are just beginning.

In areas that will be manipulated, having access for monitoring conditions after the fact is essential, to detect any new infestations before invasives become truly established.

An internship for 2003 is planned for a student to work with Conservancy staff to review the existing 2 years of data from our invasives assessment in Quinebaug, and make field inspections to recommend (and begin implementing) control measures. Similar to our effort to identify potential old growth forest areas, we used GIS to help identify 5 work zones, where some control would have the greatest benefit for our conservation targets. Beyond these 5 areas, we would also like to have site specific control done in a handful of spots, where invasives are known, but in low enough numbers to suggest control now means much less chance of problems later on: an ounce of prevention is a pound of cure.

Looking at the matrix forest as a landscape scale conservation target, our primary focus for control will be forest interior locations for woody invasive species control (barberry, especially,

though euonymous is also present). There are some dense stands of barberry, but these are few and still relatively small.

We do have wetland conservation targets (fen habitat and Atlantic white cedar swamps), and while these are not facing serious threats from invasives, they do need to be monitored to ensure species such as phragmites, purple loosestrife and japanese knotweed do not become problems.

And in all of our assessments and planning for control of invasives, we need to ask ourselves what level of threat do these have to conservation targets? Do they merit control at this time? Plants alongside road frontage are not likely to attract as much of our attention as interior populations of barberry.

In short, with a current threat assessment of "low", our two highest priorities will be monitoring to avoid new infestations or significantly expanding ones, and control where it is feasible on a small scale to avoid future problems.

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?

The entire Quinebaug area is approximately 175,000 acres. Having a presence within this project area (with Project Director Bill Toomey), we are establishing contacts that will allow us to keep tabs on a fair amount of the *protected* land here. Our concern regarding invasives involves the whole project area, but given our focus on a 34,000 core forest area, the "outside" geographic area we will likely consider (including for practical reasons) is the overall 175,000 acre project area. (nice sentence)

Looking at pathways in to the 34,000 acre core forest is essential, whether it be along rivers, roads, etc. We cannot control seed dispersal and moving invasive populations, but by tracking the presence/absence of plants, we can better prevent new (or larger) invasions.

A project of the University of Connecticut and New England Wildflower Society is the Invasive Plant Atlas of New England (IPANE). This effort is using trained volunteers to visit and assess natural areas for the presence/absence of invasives species 9throughout New England), and the level of infestation, if invasives are present. Mapping known locations of invasives is an outcome of this project, which will better allow land managers to track invasives presence and spread.

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

- barberry control in forest interior to improve current conditions, prevent area from becoming a Medium threat.
- outreach to land owners on identification and threat of invasives.

- establish an invasives free zone and maintain that condition.
- monitor small patch natural community targets (e.g. Atlantic white cedar swamps) to ensure no new invasions occur
- take 2002 intern information, focusing on specific sites (particularly wetlands) and plan monitoring and/or control.

4. Identify at least one way that you could measure (monitor) progress towards the objective(s) 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.

With barberry as the primary invasive of concern in Quinebaug's core 34,000 acre forest landscape, it is expected that control efforts on certain populations will begin in 2003. Having identified (fairly well) the presence and density of this plant through a 2 year invasive species assessment, it is possible to replicate this assessment after several years of control. Did barberry remain in locations where it was identified in 2001 and 2002? Were populations reduced? Is it absent?

The initial assessment included roadsides, trails and forest interior plots, with the second year focusing on wetlands. Given the presence and higher densities of invasives along paved roads, with minimal impact to conservation target, initial efforts at control will focus on dirt roads, trails, forest interior areas and specific wetland sites. Follow up monitoring, then, would also focus on these areas.

In total, the 2001 assessment established 188 plots in both the road and forest interior surveys were established over the 34,000 acre Quinebaug Highland project area. Fifty-six of these 188 plots were next to dirt roads, twenty adjacent to trails, and forty-two were in the forest interior. While we could expand on the number of plots on dirt roads, trails and forest interior, at minimum we would propose using the 56, 20 and 42 existing plots as our true baseline. Following control, re-evaluating these study sites would provide a quantifiable measure of success for maintaining or reducing the threat of invasives species within Quinebaug's 34,000 acre core.