Eastern Invasives Management Network
Altamaha River Bioreserve

Threat Abatement Priorities and Strategies

Key Ecological Factors

For the first workshop you listed and described your conservation targets. Now, please list and briefly describe the 'key ecological factors' necessary for long-term viability of up to 3 of your system targets (communities, matrix communities) that are threatened by invasive plants.

In this region, three conservation targets that are affected by invasive plants include mussels, river and floodplain forests, and small stream riparian forests. The key ecological factors that promote the long-term viability and success of these targets include (but are not limited to) water quality/quantity, competition, and regeneration/reproduction. Water quality/quantity affects all three listed conservation targets. Mussel survivorship, dispersal, and reproduction are all dependent on this ecological factor, and it is well understood that mussels are key indicators of water quality. Both river and floodplain forests and small stream riparian forests are directly linked to water quality/quantity for survivorship, dispersal, and reproduction also. Three important bullet items where invasive plants directly affect these key ecological factors are listed below:

- Lack of competition (floodplain and riparian forests – invasive plant growth)
- Eutrophication from organics (mussels, fish)
- Inability to reproduce (floodplain forests and riparian forests – tallow; estuarine and river aquatic plants - hyacinth)

Competition from invasive plant growth (in this case Chinese tallow-tree in floodplain/riparian forests and water hyacinth in the river) is very high when conditions are ideal within these two conservation targets. With the growth rates of these two invasives being very high, native vegetation is easily displaced.

Eutrophication from plant material breakdown has become an apparent factor for oxbow lakes and sloughs in the floodplain where Chinese tallow-tree invades. The large numbers of tallow trees that grow in a given population produce a large biomass of leaf material. The breakdown process for this leaf is very quick, and so organic accumulation in oxbow lakes and sloughs is very high when these trees are present. This can smother mussels as well as eutrophicate (nutrient load) waters, causing anoxic conditions and thus kill both mussels and fish species.

Reproductive capabilities with certain native species are limited when invasives are present. This occurs from both basic competition for light, nutrients, and space, but also from chemical capabilities found in some invasives. Chinese tallow-tree, for example, produces toxins that are released into the soil, which in turn limit reproduction of other plants.

Current Threat Abatement Priorities

List your current priorities for invasive plant threats at your conservation area. This may be by species (or groups of species) and/or by locations within your conservation area. Indicate how these priorities are tied to your conservation targets and, where appropriate, to the key ecological factors upon which they depend.

Due to the limited effects of invasive plant species on conservation targets, priorities have been ranked by invasive species. Priorities for invasive species are

a) Establishment of an invasive network for invasive location reporting,
b) Monitoring of key invasives,
c) Eradication of key invasives

These priorities are based on researched and observed impacts on conservation targets, as well as strategies for threat abatement developed from experience, peer input, and research.

Have your priorities changed since we last met in December, 2001? If so, point out how and indicate why they have changed.

No; priorities still follow population locating, population monitoring, and population eradication.

Have any of the species or infested locations which were formerly regarded as high priorities been given lower priority? If so, describe why. If not, select a species or infested location and make an argument for lowering its priority (play devil's advocate).

- Chinese tallow-tree (high priority)
- Water hyacinth (high priority)
- Kudzu ~ Could be given lower priority based on the limited occurrences in the lower Altamaha watershed
- Privet ~ Could be given lower priority based on the limited occurrences in the lower Altamaha watershed

Threat Abatement Strategies

Describe the strategies that you have developed thus far for abating high priority invasive species threats. Include any strategies designed to prevent new invasions or to quickly detect and control new species or populations that do become established. Describe your vision of success for these strategies. If they succeed, what will your conservation area be like.

- Large-scale removal of Chinese tallow-tree (tree cutter) with herbiciding to remove or control the core known populations

- Invasives reporting network in lower Altamaha watershed with boat ramp/hunt club sign posting, large brochures, a 1-800 reporting phone number, and invasive workshops to inform landowners of invasive problems
- Hyacinth physical removal via boats through work parties.

Do you have any plans to measure the success of your strategies? If so describe them briefly.

- Annual occurrence monitoring of invasives
- Reporting that occurs through the 1-800 phone number
- Landowner and resource-user participation