Eastern Invasives Management Network
Workshop # 3, March 2003

Chesapeake Rivers Project, Virginia

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.

(1) Reduce the acreage of invasive *Phragmites australis* to <5% of the total acreage for the marshes and <5 % for the hardwood/swamp forests of the Tidal Freshwater System target; also, no stands of *P. australis* are larger than 0.4 ha.
(2) Reduce *Murdannia keisak* to <10% relative cover in the herbaceous layer within the tidal freshwater system.
(3) For the Upland Terrestrial Forest System and Calcareous Forest targets, *Alliara petiolata*, *Lonicera japonica*, *Microstegium vimineum*, and *Ligustrum sinese* are absent (or do not lower the diversity or abundance of native species).

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?

When assessing the threat of wetland and aquatic invasive plants such as *P. australis* and *M. keisak* within the Chesapeake Rivers project area, we would need to assess the abundance and/or distribution of these invasives in the lower reaches of the Rappahannock, Dragon/Piankatank, and York Rivers, which are downstream from the project area, with a minimum assessment buffer of 5 km beyond the project area boundary. The tidal effect could transport these invasives upstream to the project area. For the forest invasives, it would be good to know the average maximum dispersal distance for each species, if possible. Otherwise, minimally include a 5-km wide buffer zone when assessing invasive threats.

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

(1) Form a working group of federal, state, and local government agencies, NGOs, and private landowners to halt the spread of invasive *P. australis* within the tidal freshwater system of the project area.

(2) Incorporate weed control into publicly funded cost-share programs and promote to private landowners.
(3) Coordinate annual aerial spraying of *P. australis* for multiple landowners across project area to reduce cost of control.
(4) Develop state policies that will determine ecologically sound detection and prevention measures to prohibit the introduction and slow the spread of new invasive species.
(5) Determine the status of the invasion of high priority invasives, the degree of threat to conservation targets, and develop regional plans to effect control.

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.

(1) Measure total acreage (and individual stand area when possible) of *P. australis* in tidal freshwater systems in the Rappahannock, York, Mattaponi, Pamunkey, Piankatank Rivers, and Dragon Run by aerial photography/reconnaissance every 5 years.
(2) Use the vegetation macroplots established by Virginia Natural Heritage within the tidal freshwater systems throughout the Mattaponi and Pamunkey Rivers to monitor changes in relative cover of *M. keisak*. These plots are at a minimum of 20x20 m in size; to monitor relative cover of M. keisak, use smaller subplots to sample within the macroplots. We also would need to establish similar macroplots (and subplots) along the Rappahannock River and possibly Dragon Run. One issue: the Heritage vegetation macroplots are not randomly positioned, but are subjectively positioned instead.
(3) For the Upland Terrestrial Forest System and Calcareous Forest targets, estimate the road distribution (based on presence/absence data) of invasive species (in particular, *A. petiolata*, *L. japonica*, *M. vimineum*, and *L. sinese*) along 0.25-5 mile increments along all roads within the Chesapeake Rivers Project Area. Most of this project area is private land so it may difficult to develop a sampling design to monitor invasives within forested tracts.