Eastern Invasives Management Network
Workshop # 3, March 2003

Allegany Forests Project, MD/PA

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.

The current iteration of the threats analysis for Allegany Forests was recently completed using expert opinion in a group planning process, without the benefit of any ecological models or other shared, formalized vision of how these systems work. Invasive Species (plants) is one of the top four threat across the entire site, behind the active threats of deer overbrowse and roads, and the historical threat of past land use (logging and conversion). Invasives were identified and ranked as a source of stress to three of our seven targets: **Riparian Zone Communities**, **Low-Mid Elevation Basic Mesic Forests**, and **Shale Barrens and Woodlands**. The list of sources of stress for the matrix forest target (**Low-Mid Elevation Dry/Dry-Mes Forest**) does not include invasive plant species, but there were a couple acknowledged sources that we didn't rank for this target because of space constraints. We do note in the sources documentation that weeds may be interrupting gap dynamics, and we have seen them exploiting disturbance regimes (increasing extent and density after fire). Understanding and managing weeds in the matrix forest is key if for no other reason than for the role this target plays in landscape-scale dynamics of dispersal and spread.

Riparian Zone Communities

Viability = Fair	size = fair condition = fair landscape context = good
Invasives threat = High	contributing to altered composition/structure, altered soil ecology, habitat disturbance

Low-Mid Elevation Basic Mesic Forests

Viability = Fair	size = good condition = poor landscape context = good)
Invasives threat = Medium	contributing to altered composition/structure, altered soil ecology, habitat disturbance

Shale Barrens and Woodlands

Viability = Good	size = good condition = fair landscape context = good
Invasives threat = High	contributing to altered composition/structure

Low-Mid Elevation Dry/Dry-Mesic Forest (Matrix)

Viability = Fair
size = good
condition = poor
landscape context = fair

Invasives threat = not ranked, see comments in text above

Conditions for threat reduction: Riparian Zone Communities

Target Description: A complex of habitats within the 100-yr floodplain of Potomac River and tributary streams (Sideling Hill, Fifteenmile, and Town Creeks). Includes forest communities occurring on sandy to silty alluvial soils, dry open sandy patches which are habitat for *Cicindela ancocisconensis*. (does not include, for now, WV side of Potomac, and west side of Town Creek). Supports A-ranked population of *Cicindela ancocisconensis*, and at least 8 rare or uncommon plant species. Provides critical buffer for Perennial Streams, and important for landscape connectivity.

If/when the following conditions are met, we could reduce the threat rank for invasive species for this target to *Medium*:

- Reduce and maintain cover of Japanese stilt grass (*Microstegium vimineum*) at or below 25% cover throughout the target, and ensure that "clean" areas (areas with cover $\leq$ 5%) make up over 75% of the total target area, including known locations of tiger beetle habitat and rare plants.
- Reduce and maintain density of multiflora rose (*Rosa multiflora*) and exotic bush honeysuckles (*Lonicera spp.*) to < 75 individuals/acre, and so that infested patches (density $\geq$ 75 individuals/acre) do not exceed 1/2 acre in size at any location.

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?

Taking a landscape-scale view of invasion dynamics *within* the 150,000 acre Allegany Forest Project area seems challenging enough, without contemplating inventory or monitoring areas beyond this scope!!

Given our concern about weeds in floodplain areas, the most obvious answer to this question is areas upstream. The entire Sideling Hill Creek and Fifteen Mile Creek watersheds are encompassed in the project area. Town Creek is the western boundary of Green Ridge Matrix Block, and the AF project area does not include the entire watershed, so we might want to consider upstream areas in the Town Creek watershed. The Potomac River and the C & O Canal are the southern boundary of the Matrix Block and the project area, and Interstate 68 forms the northern boundary of the Matrix Block, and bisects the project area. All three of these landscape features are very likely functioning as corridors for invasive species. Surveying or monitoring these corridors and/or the areas they connect to Allegany Forests would provide useful information about the level of infestation of species already known from Allegany Forests (i.e. likelihood of continued reestablishsment), and/or about the presence of potential invaders which are uncommon or not yet established at AF (threat from new or increased invasion).

This question could also be applied to planning weed threat abatement for different targets within the conservation area. For example, it may not make sense to address weed threats (at least for Microstegium) in the Floodplain Zone Communities, without assessing and addressing this species in the Low-Mid Elevation Basic Mesic Forests and along roads in the Matrix forest. Even within the conservation area, a target by target approach, without a landscape perspective, could frustrate or foil weed management efforts.

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

Strategies:

a) Spatial analysis and modeling that allows us to identify significant upstream/upslope sources of microstegium, in ravines and hollows (part of the Low-Mid Elevation Basic Mesic Forests target) and on roadsides (mostly Matrix forest target).

b) Develop, test, and promote best management practices for road and roadside maintenance, and for logging operations, which will interrupt vectors of spread from roadsides and upland forests into riparian zones.

c) Identify floodplain zone areas for control projects, giving priority to areas that are known locations of tiger beetle habitat and rare plants, and areas adjacent to know patches of Harperella (globally ranked target embedded in Perennial Streams target, and potentially imperiled by encroachment of microstegium into cobble bar habitat) AND that are not downstream or downslope from significant source populations (see strategy 'a'). Implement control measures.

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.

To monitor progress toward first of two necessary conditions for reducing invasives threat rank for Riparian Zone Communities:

- Estimate percent cover of Japanese stilt grass (*Microstegium vimineum*) in randomly selected temporary plots placed throughout the floodplain zone target (some stratification of sampling? to ensure adequate sampling of difference land ownerships, different community types...). Subjectively place additional plots in areas of known locations of tiger beetle habitat and rare plants.