

**SAVEM--SAMAB's Southern Appalachian
Volunteer Environmental Monitoring Program**

Invasive Exotic Plant Monitoring Methodology Notes

I. Level I Monitoring Methodology

- A. Before a volunteer begins monitoring, a program design team member trains the volunteer. Hands-on field training is provided on:
 - 1. identification of primary plants of concern, at minimum
 - 2. operation of Global Positioning System
 - 3. recording observations on the Level I Data Sheet
- B. We record observations on 12 “Plants of Primary Concern,” determined through interviews with U.S. Forest Service and Great Smoky Mountains National Park biologists, Gary Kauffman, Dave Danley, and Kris Johnson. Plants include
 - 1. Tree of Heaven
 - 2. Princess Tree
 - 3. Mimosa
 - 4. Japanese Knotweed
 - 5. Privet
 - 6. Exotic Honeysuckle
 - 7. Multiflora Rose
 - 8. Oriental Bittersweet
 - 9. Kudzu
 - 10. Chinese Yam
 - 11. Japanese Stiltgrass
 - 12. Garlic Mustard
- C. Volunteers may record other invasive exotic plants not on this list. In our data, we list these plants collectively as “Other.” Data users can learn what specific plants are recorded under “Other” by contacting the program coordinator to access the original data.
- D. Volunteers collect Level I data on a transect—or line connecting two points. These lines, or segments, are typically associated with vectors such as:
 - 1. roads—primary, secondary, and Forest Service or Park roads
 - 2. rivers, streams, and riparian corridors
 - 3. railroad rights-of-way
 - 4. utility rights of way
 - 5. trails—hiking, horseback riding, cycling
- E. Monitoring segments are determined through consultation with volunteers and the program coordinator, and with input from the SAMAB invasive plant design team. Criteria for determining monitoring event locations include
 - 1. the vector is located in, is adjacent to, or courses through a gateway community of a national forest or national park
 - 2. the vector is in close proximity to both an area of known high invasive plant occurrence and a significant natural area as determined from Appalachian Trail Park Office and relevant state or Federal natural heritage surveys
- F. Relevant Tools and their Application
 - 1. Volunteers use, after receiving training, a Global Positioning System for recording the location of invasive exotic plants.

- a. Garmin GPS 12 has been the system of choice due to its ease of operation, durability, and waterproof characteristics
 - b. Garmin has phased out this model forcing the program to select another model for use in YR 2003
 - c. A waypoint is taken at the location of an identified invasive exotic occurrence along the subject-monitoring segment. This waypoint and its latitude and longitude coordinates and the corresponding invasive exotic plant species are recorded manually on the Level I Data Sheet.
 - d. At each waypoint, the volunteer visually assesses the area of the exotic plant occurrence for the presence of other invasive exotic plant species from the list of 12 Primary Plants of Concern. Any other plants observed within eyesight (usually 30 feet +/-) of the waypoint are also recorded on the Level I Data Sheet with this corresponding waypoint.
 - e. Waypoint coordinates are generally accurate within 30–50 feet
2. Volunteers in 2002 and 2003 have been trained on and are primarily using the Level I Data Sheet, which is designed for use in a transect, or line, survey. The data sheet prompts the volunteer to manually record the following:
 - a. Presence or absence of invasive exotic plant species. Presence or absence data is useful for:
 - helping to determine areas of focus for more detailed study
 - helping to determine strategies for control
 - b. Descriptor of area of occurrence or approximate number of stems
 - c. Waypoint number
 - d. Latitude/Longitude coordinates
 - e. General notes
 - f. Collection date
 - g. Monitoring team members' names
 - h. Begin and end time of monitoring event
 - i. State
 - j. County
 - k. Text description of monitoring segment location
 - l. Weather conditions
 3. Some volunteers may progress, in 2003 or at some future time, to using a Level II Data Sheet, which will be more detailed and likely reflect a plot survey methodology that determines the extent of plant invasions into natural areas from the segments monitored using Level I Data Sheet. The Level II Data Sheet is not yet developed.
 4. Flash Cards of each of the 12 Primary Plants of Concern are provided to each volunteer for field reference. Photographs and text descriptions of the plant are on the flash card.