

The South Florida Ecosystem Restoration Task Force and Working Group's invasive species arm, the Noxious Exotic Weed Task Team held a meeting on Detection of Invasive Exotic Plants February 12 – 14, 2003. There were 103 conference attendees. The conference had four goals and seven questions.

CONFERENCE QUESTIONS

1. What are the best methods for detecting invasive exotic plants?
2. At what scale(s) should they be detected, what population size or geographic areas are reasonable to map at different scales and will these methods serve the majority of different users and their needs?
3. What are the best ways to integrate the different scales and make them hierarchical so they may be expanded or collapsed in a GIS framework to make them “interoperable” or compatible?
4. Are current detection methods available (or can methods be developed) to determine which parts of the ecosystem are more vulnerable to invasion and why?
5. Can mapping data be used to help make predictions regarding the invasion of individual species and ecological features?
6. Given that many agencies are currently “doing their own thing”, how do we get agencies to accept and use an integrated system of methods to detect, map and assess invasive exotic species?
7. What kinds of situations are not applicable to remote sensing - so we don't waist our time and money there?

CONFERENCE GOALS

1. Develop a comprehensive report of the presentations and findings of this workshop. This report is intended to be a “user's manual” for developing and implementing a cross-agency program for detection, mapping and assessment of invasive exotic plants, that includes a sufficient number of different approaches and mapping scales to provide the majority of users with reliable, repeatable and inter-operable methods for detecting, mapping and assessing invasive exotic plants for the majority of different needs. It is not intended to solve all problems in detection of invasive exotic plants.
2. Bring experts in the fields related to detection, mapping and assessment together in a forum explicitly organized toward a common and practical goal for developing a useful and realistic set of integrated and inter-operable “tools” for agencies to use in detecting and assessing invasive exotic plants.
3. Use the results of this conference in other venues and conferences to develop an ongoing “interest group” to continue the necessary process of refinement and technological enhancement of detection and assessment methods.

4. Bring agencies together and encourage their use of compatible and interoperable methods for detection.

The first day covered the technical aspects of the different methods of remote sensing, imaging technologies, scaling and computer storage and retrieval considerations, and equipment. The second day covered existing applications of field and remote sensing and modeling applications to assist management in finding and managing invasive plant populations. The third day was a series of workshop discussion based on the previous topics, and the conference questions and goals. The workshop discussions related to the practical applications and approaches to using the methods, techniques and equipment to enhance existing programs and how to help agencies integrate these concepts into their work.

The results of the conference will be developed into a comprehensive report based on goal number one above. Conference participants provided valuable input and questions that will help guide the report products and recommendations. Three overarching issues became apparent during the discussions.

1. Remote sensing using imaging systems (photographs, thematic imagers, etc.) is generally not applicable or practical in instances where both very detailed and high resolution results are required, or where extremely large areas are being covered. In the case of extremely large areas of coverage, modeling seems to be developing as a practical alternative for providing tools for locating the most probable locations of exotics both for control and budget planning.

2. Simple, low-tech and low-cost tools are essential to field managers who are on the ground trying to find and control these species. In most instances the people who are out there doing the managing are not remote sensing specialists and have extremely limited budgets. The most important aspect for them is to find the plants and control them.

3. Existing low-tech field remote sensing methods are practical, cost-effective, and achieve basic agency aims; however there is general acknowledgement that the results of these methods are not sufficient to meet other critical information needs such as; consistency and repeatability of data collection, precision of species location data, retreatment information, ecological and landscape use relationships, and more rigorous areal extent and invasion rate calculations. In particular, more precision is needed in spatial coordinates for species locations. The expert panel members felt this was the most important improvement that could be made and was critical to future GIS spatial analyses and prediction.

These will be important points in providing direction and guidance during report preparation.