

# III. National Early Warning and Rapid Response System for Invasive Plants

## Proposed Strategies for Early Detection, Reporting, Rapid Assessment, and Rapid Response to New Invasive Plants in the United States of America.

*A Concept Paper by:*

**Randy G. Westbrooks<sup>1</sup>, Deb C. Hayes<sup>2</sup>, and William P. Gregg<sup>3</sup>**

Early Warning Sub-Committee  
Early Warning Workshop Steering Committee  
Federal Interagency Committee for the Management of Noxious and Exotic Weeds  
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**Introduction.** To help counter the threat posed by introduced invasive plants, a National Early Warning and Rapid Response System is needed to ensure that new and emerging invasive plants in the United States are reported, assessed, and addressed as soon as possible. Timely knowledge about new county, state and national plant records will enable local, state, and federal officials, as well as private land owners to take appropriate action against new invasive plants<sup>4</sup>. This concept paper was developed as a first step in creating the proposed system. It includes:

- I. [The Story of Common Crupina in the Northwest](#)
- II. [Strategies for Addressing All Types of Invasive Species](#)
- III. [Guiding Principles for Early Warning and Rapid Response](#)
- IV. [Functional Elements of a National Early Warning System.](#)

Additional steps in developing a National Early Warning System will be to:

\*\* Conduct a National Early Warning System Workshop.

\*\* Develop a National Early Warning Action Plan for review by FICMNEW and consideration by the National Invasive Species Council.

\*\* Cooperate with state and local partnerships to implement the approved NEWS Action Plan for Invasive Plants. [Top](#)

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<sup>1</sup> Invasive Plant Coordinator, U.S. Geological Survey, Department of the Interior, Whiteville, NC.

<sup>2</sup> Invasive Species Coordinator, U.S. Department of Agriculture, Washington, D.C.

<sup>3</sup> Invasive Species Coordinator, U.S. Geological Survey, Department of the Interior, Reston, VA.

<sup>4</sup>Under Executive Order #13112 that was signed by President Clinton on February 3, 1999, an invasive species is defined as.... *an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.*

## I. THE STORY OF COMMON CRUPINA IN THE NORTHWEST. [Top](#)

Common crupina (*Crupina vulgaris* Cassini), a perennial composite from southern Europe, was first noticed in the northwestern U.S. in 1968 in Idaho County, Idaho, about six miles east of Grangeville along Highway 13 on the Sammy vonBargen Ranch<sup>5</sup>. The plant was first collected at the site on July 26, 1969. In 1970, a cursory survey of the area revealed that a vigorous stand of the plant dominated an area of about 40 acres<sup>6</sup>. By 1981, when common crupina was listed as a Federal Noxious Weed and the University of Idaho undertook an eradication feasibility study, the infestation had increased to 23,000 acres in west central Idaho. The study, which was completed in 1988, concluded that common crupina



*Weeds Won't Wait!*

*could indeed be eradicated* from the United States. By September, 1991, when a federal/state task force finally met in Lewiston, Idaho, to discuss the funding of a cooperative eradication project, common crupina had spread to 55,000 acres in Idaho, 8,000 acres in Oregon, 400 acres in Washington state, and 20 acres in California. At that meeting, due to environmental concerns about the impact of pesticides on sockeye salmon in the Salmon River, no consensus was reached by involved agencies, and the crupina eradication effort was abandoned. Since that time, crupina has continued to spread, and efforts to find a suitable/effective biological control agent have been unsuccessful (to date). Needless to say, if the original 40 acre infestation of crupina had been reported and summarily eradicated in 1968, the long term impacts of this introduced invasive plant on biodiversity and rangeland productivity in the Northwest could have been avoided..... The moral of the story is that invasive species need to be detected early, reported, assessed, contained, and eliminated whenever possible.....

## II. STRATEGIES FOR ADDRESSING INVASIVE SPECIES. [Top](#)

In order to develop a National Early Warning System for Invasive Plants, it is important to understand how early warning and rapid response fit into a coordinated framework for dealing with invasive species. The primary strategies for addressing invasive species include prevention, early warning and rapid response. Since prevention through regulatory exclusion is estimated to

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<sup>52</sup>The first known population of common crupina in the U.S., which was collected in Boston, MA, in 1877, did not survive (Pers. Comm., Cindy Rochet, USFS, Medford, OR).

<sup>63</sup>Stickney, P. 1972. *Crupina vulgaris* (Compositae: Cynareae), new to Idaho and North America. Madrono 21:402.

be about 5% effective, the critical importance of early warning and rapid response to new invaders cannot be overstated.

**A. Preventing introduction is the preferred strategy and the first line of defense against foreign invasive species.** The first line of defense includes:

- Production of commodities for export in certified pest free zones in other countries.
- Preclearance of commodities for export at foreign ports of export.
- Inspection and clearance at U.S. ports of entry.
- Safeguarded movement of contaminated commodities to proper disposition.

(These are the traditional strategies that have been used to minimize the introduction of foreign agricultural pests in the United States).

**B. Early warning and Rapid Response form the second line of defense against introduced invasive species.** The second line of defense includes:

- *Early Detection*, or finding an established population of an invasive species at or near its inception.
- *Reporting/submitting a voucher specimen* of the established infestation to appropriate agencies.
- *Identification of specimens* submitted by the detection network by reliable taxonomists.
- *Vouchering of confirmed specimens* as a historical record.
- *Gathering of information about the target species* through literature reviews.
- *Rapid Assessments*, including distant and on site scientific and technical support for planning and implementation of on the ground initiatives.
- *Rapid Response*, including:
  - *On the Ground Action*. Early involvement of all impacted stakeholders to:
    - Discuss the problem
    - Develop a strategic plan of action
      - Containment (strategies for preventing further spread)
      - Eradication (total elimination from target sites)
    - Identify/Assemble available technical methodologies
    - Identify funding sources.
    - Implement the action plan.
    - Quality Assurance/Quality Control through periodic assessment of progress.
    - Modification of the action plan per QA/QC findings. [Top](#)

**III. GUIDING PRINCIPLES FOR EARLY WARNING AND RAPID RESPONSE TO INVASIVE SPECIES.** The development of a National Early Warning System for Invasive Plants must be guided by certain principles and value judgments. Some general observations about invasive species, as well as some of the more obvious guiding principles are provided below to encourage philosophical discussions and vetting of ideas.

**General Observations:**

\*\* Invasive alien species are a growing threat to the world economy, the environment, and human health, and thus are important considerations in achieving sustainable use of the world's resources.

\*\* Preventing the introduction and spread of invasive species is more cost effective than controlling them after they have become established.

\*\* Continued homogenization of the Biogeographical Realms will lead to a further decline in biodiversity. In order to protect biodiversity, the biological integrity of the Biogeographical Realms must be maintained.

\*\*No person has the right to move a species from where it occurs to where it is not wanted, or where it will cause environmental or economic damage.

\*\* The biology of an invasive plant is not negotiable. If a plant has a chance to reproduce and spread, it will. Mitigative actions must be based on the biology of the target species, not the calendar or fiscal year.

#### **Guiding Principles for Early Warning and Rapid Response:**

\*\* **Early Detection and Reporting.** Early detection and reporting of invasions requires the education, participation, and cooperation of specialists, resource users, and the general public.

\*\* **Containment, and Eradication.** Invasions are contained, and eradicated where ever possible, and as soon as possible following establishment.

\*\* **Regional Prevention and Mitigation.** Actions to prevent and mitigate invasions take into account differences in species invasiveness in different habitats and regions of the U.S.

\*\* **Roles of Government and the Private Sector.** All levels of government and certain private interests have well defined roles in the shared responsibility for reporting and assessing invasions.

\*\* **Field Assessments.** Assessments require accurate scientific information and reliable methods that are widely tested and accepted by practitioners.

\*\* **Standards for Information Management.** Common standards govern the reporting, documentation and management of data on invasive species.

\*\* **International Cooperation.** Since biological invasions are a global problem, documenting and assessing them requires international cooperation and information sharing. [Top](#)

#### **IV. FUNCTIONAL ELEMENTS OF THE PROPOSED NATIONAL EARLY WARNING SYSTEM FOR INVASIVE PLANTS.**

Ultimately the U.S. National Early Warning System for Invasive Plants will contain a number of elements that are implemented by different groups, organizations, or agencies. Functional elements and potential activity areas of the proposed system should include:

##### **A. Early Detection, Reporting, Identification, Vouchering, and Information Management.**

- **Early Detection Network.** A volunteer network of people in each state who observe, study, and collect plants in the USA.
- **Actively Involved Field Scientists.** Identification of field scientists/personnel who actively observe, study and collect plants in the USA.
- **Standardized Reporting Procedures.** Standardized information that should be included in reporting new plants.
- **Incentives for Early Detection and Reporting.** Incentives to encourage detection and reporting of new plants.
- **Local Points of Contact.** Established local points of contact (local offices that could promote detection and collection of new plants).
- **Designated State Botanists.** Designated State Botanists to:
  - assist in developing the State Detection Networks;
  - identify and voucher plants submitted by the Early Detection Network;
  - maintain voucher specimens of new county, state, and national records;
  - Develop identification aids and conduct training for network participants.
- **Web based Information Management System.** A web based distributive information management system that consists of a network of state and regional databases that can be simultaneously queried by one or more centralized search engines (e.g., the North American Biodiversity Information Network).

#### B. Interagency Partnering and Operations.

- **National Level Interagency Partnerships.** Established partnerships (e.g., FICMNEW, ANS Task Force, Native Plant Coalition Initiative, Invasive Weed Awareness Coalition) to cooperate in development and implementation of the National Early Warning System for Invasive Plants.
- **State Level Interagency Partnerships.** Established State Interagency Partnerships (State Invasive Species Councils, Weed Management Areas) to develop State Early Warning Systems, to coordinate on site assessments, and rapid response to new invasions.
- **Standardized Notification Procedures.** Development of standardized procedures for notifying local, state, and federal authorities about new invasive plants.
- **Strategic Planning at the State Level.** Development of State Level Invasive Plant Management Plans for Invasive plants.
- **International Cooperation to:**
  - facilitate sharing of information and expertise in addressing new invasive plants;
  - develop strategies for addressing internet sales of invasive plants.
  - develop a **Global Early Warning System for Invasive Species.**

#### C. Rapid Assessments.

- **Expertise to Provide Technical Support.** Development of capability (resource specialists) for providing online and distant technical assistance for assessing species invasiveness, potential impacts, and available response strategies.
- **Plant Invasiveness Classification System.** Development of a classification system based on invasiveness and regulatory categories that permits land managers to assess the threat of a specific taxa in a specific ecosystem to determine a proper course of action.
- **On site Evaluations.** On site rapid assessment and technical assistance for appropriate

responses using standardized methods and procedures.

- **Delineation of Roles.** Determination of federal, state, universities, and local roles in assessments.

D. **Rapid Response** to confirmed outbreaks of invasive species.

- **Action Plans.** Protocols and contingency plans for rapid response to new infestations.

- **State and Federal Coordination.** Guidance and coordination in conducting response actions.

- **Funding Mechanisms.** New mechanisms for funding rapid response initiatives.

E. **Public Outreach and Access to Information.** In order to detect, assess, and rapidly respond to new incursions of invasive plants in the United States, it is critical that the power of the internet be harnessed. Ultimately, the goal is to provide one stop shopping on the internet for information on invasive species issues.

- **Public Outreach.** A national public outreach and awareness campaign to raise awareness of the problem, and to engage the general public in early detection of new plants.

- **Information Management.** Development of a distributive information management system consisting of web-based databases that collect and maintain information relevant to documenting and assessing invasive plants in North America.

- **Centralized Internet Gateway.** Creation and management of an Internet Gateway/Site to link and query internet plant databases, receive new reports, disseminate alerts to high risk areas, and issue periodic online summaries of recent reports of new invasions.

- **Online Directory.** Creation of an online directory of invasive plant specialists.

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