Integrating Invasive Species Data from the Western Hemisphere

I3N, the IABIN Invasives Information Network, fosters scientific and technical cooperation for sharing data.

Invasive alien species (IAS) are one of the main causes of biodiversity loss and threats to agriculture. Successful early detection, prevention, and management of IAS and their impacts require international cooperation and sharing of information, technology, and tools. In the Americas, IAS information is often nonexistent, unavailable, inaccessible, or incompatible with other data sets. The IABIN Invasives Information Network (I3N), the first Thematic Network established by the Inter-American Biodiversity Information Network (IABIN), facilitates cooperation on IAS information discovery, collection, management, and distribution, and provides education and training on the use of tools developed and freely distributed by the I3N. Coordinated by the National Biological Information Infrastructure (NBII) of the United States Geological Survey (USGS), the I3N is an internationally recognized example of successful national and regional collaboration and sharing on an issue of global significance.

> The Conference of the Parties to the Convention on Biological Diversity "… welcomes the 'I3N' and calls on the Global Environment Facility, Parties, Governments, and relevant organizations to support and participate in these initiatives." (CBD Decision VI/23)

Starting an IAS Network for the Americas

Initiated in 2002 as a series of pilot projects sponsored by IABIN and funded by the U.S. State Department and USGS, the NBII began to develop tools for the collection and exchange of IAS information in the Americas. IABIN adopted I3N in 2004 as part of a 5-year grant from the Global Environment Facility (GEF) to facilitate biodiversity information sharing in the Americas. To support the continued growth of the I3N pilot project and as coordinating institution, the NBII developed and hosted a trilingual I3N Web site, a search tool, an online collaboration community, and an I3N e-mail listserv — all of which continue to operate in support of the I3N today. Due to the success of the I3N, organizations in Bangladesh, Belgium, China, Ethiopia, Gambia, Ghana, Morocco, Portugal, Seychelles, and Sri Lanka have now indicated their interest in using the I3N tools.

I3N Database on Invasive Alien Species Template

The *I3N Database on Invasive Alien Species* template (available in Spanish, Portuguese, and English)

Green = I3N Participants
Brown = Institutional Interest

Contact information for National Leads can be found at <i3n.iabin.net>

allows network members to collect and share standardized information on IAS taxonomy, introduction, biology, ecology, impacts, control methods, occurrence (including geographic data), contacts, projects, and references. Developed through a partnership between the NBII, I3N-Brazil, and I3N-Argentina, the


Photo credit: USGS

Invasive pigs are reported by all I3N countries.

I3N Database template incorporates multiple capabilities in a single tool, allowing I3N members to collect, manage, export, and exchange standardized data. The tool's free availability eliminates the need to purchase software and hire computer programmers and design consultants to develop a national IAS database — a barrier that is often cited as a limiting factor in the development of national IAS information databases in the Americas.

The I3N provides free Internet hosting and global Internet access to IAS records created by member countries, who are encouraged to publish their IAS records using a freely-available Web template either on their own Web site, or on the central I3N Web site. This makes the records available to the I3N search tool, which allows users to search all of the online I3N data sets simultaneously.

Standards

The *I3N Database* template was designed to comply with the Dublin Core and Darwin Core Metadata Standards, suggests the Integrated Taxonomic Information System (ITIS) as a taxonomic authority, and incorporates standardized vocabulary for habitat terminology developed by NatureServe. The taxonomy and
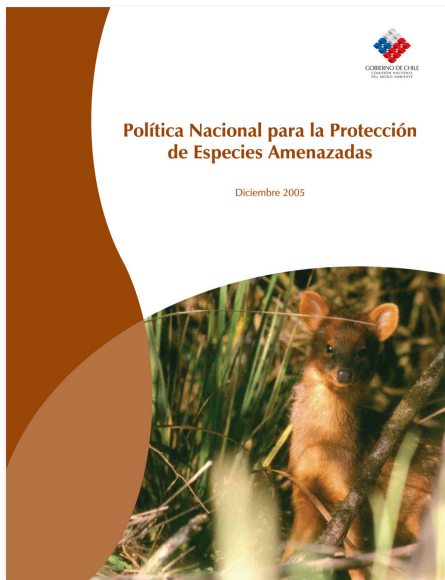
I3N participants support national policy processes.

Retaining Data Ownership
Local expertise in collecting, managing, and disseminating invasive species information is essential. Because data on IAS in any one country represent the efforts of a heterogeneous group of participants, I3N supports a distributed network of in-country data providers, rather than a centralized system. Each country's information is controlled by that country but is provided to the international public through the Internet in a standard format.

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habitat terms can be tailored to a particular country. Compliance with these basic standards ensures that data sets created using the *I3N Database* template are compatible and, therefore, exchangeable among network members and other international data providers.

Making Data Accessible and Searchable

The *I3N Database* template allows database owners to export their IAS records in the widely accepted Extensible Markup Language (XML). The template is delivered with built-in functionality for generating XML-tagged species fact sheets, and for producing trilingual reports consisting of detailed or summary species lists, projects, and contacts from the database. Users can also modify the template to produce reports tailored to their specific needs. The XML tags are based on the Dublin Core Metadata Standard as adapted through consultations with IAS experts.

The XML-tagged files can be published on a Web server. The data providers retain complete control over their databases and can add, change, hide, and delete information at will. I3N members decide how to publish and display the information, which they can do on their own Web site or, free of charge, on the I3N Web site maintained by the NBII. The I3N search tool (available in Spanish and English) harvests the information and

provides a free-text search of IAS information formatted in HTML, XML, PDF, text, and other common word processing and spreadsheet files.

GEF Grant

I3N participated in a $6 million, 5-year IABIN project funded by the Global Environmental Facility (GEF). With GEF funding, the I3N revised the database and created the Web template; provided training on their use in 16 countries; administered data content building grants; and brought standardized IAS information systems online; created a decision support tool for invasive plant risk assessment; and continues to work to expand the network to new countries.

A Vision for the Future

Participants will continue to discover unsuspected IAS in their countries, develop national IAS lists, and forge mutually supportive relationships with neighboring countries. Additional grants are being sought to build pilot IAS early detection and learning networks near ports of entry. The I3N model to share standardized IAS information has been endorsed by both the members of the Convention on Biological Diversity and the Global Invasive Species Information Network. I3N will continue to expand its network as well as offer funding, training and information services, and new products to help address IAS in the Americas.

For More Information

Visit the network's home page: <http://i3n.iabin.net>.
Subscribe to the I3N listserv:
Send an e-mail to <I3NLIST@nbii. gov> with a blank subject line and "subscribe i3nlist" (without the quotes) in the body of your message.
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