

## Introduction

Many harmful exotic species entered the U.S. as early as the 17th century but they were not recognized as injurious at the time. These species included a large number of plants that were recognized as noxious weeds decades and even centuries later. Perhaps the most dramatic adverse effects of invasive species in the U.S. was first demonstrated by insects such as the gypsy moth which escaped confinement in Massachusetts in 1869 and defoliated oak trees. Another injurious insect, the cotton boll weevil, entered the U.S. from Mexico prior to 1892 and destroyed much of the Texas cotton crop. As agriculture flourished, so did invasive species. The first federal legislation to deal with the agricultural-related problems was passed in 1912. Still, during the rest of the 20th century the numbers of accidental and intentional introductions of insect and other agricultural and forest pests increased many fold. In more recent years, large increases in worldwide travel and trade, have rapidly increased the rate of new introductions.

Beginning in the 1980s, exotic invasive species were recognized as having much broader adverse impacts, and in 1990, the U.S. Congress passed legislation that created the interagency Aquatic Nuisance Species Task Force (ANSTF) to deal with the introduction and spread of invasive species in the nations waterways. In 1993, the report of a study on harmful nonindigenous species requested by the U.S. Congress and prepared by the Office of Technology Assessment was published. This report clearly documented that invasive species had become a major national problem by adversely affecting not only agriculture and forestry, but aquatic resources, natural ecosystems, biodiversity, and commerce. In 1994, the Executive Branch of the U.S. government established, through a memorandum of understanding, the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) to assist in coordinating federal activities and fostering partnerships with state and local governments and the private sector. In May, 1997, Vice President Al Gore, in response to a request from congressional leaders and a letter signed by more than 500 concerned scientists and managers, directed key federal agencies to make recommendations for a coordinated attack on the problem. As a follow-up to Vice President Gore's actions, an

Executive Order on Invasive Species was signed by President Bill Clinton on February 3, 1999.

On the international level, the first major conference on alien species was convened by the Norwegian government and various United Nations (UN) agencies in 1996. The conference highlighted the implications of invasive species in conservation, sustainable development, and world trade and led to the development of the Global Invasive Species Program (GISP). Although this was the first widely attended international meeting, a number of specific related activities have been underway for some time. For example, the Office International des Epizooties (OIE) which deals primarily with animal diseases has been in operation at the international level for several years. Also, the International Plant Protection Convention (IPPC) was established in 1952 in association with the Food and Agricultural Organization of the UN and strengthened considerably in 1997 when the Convention was amended to accommodate the Agreement on the Application of Sanitary Measures that resulted from the Uruguay round of trade agreements under the World Trade Organization.

Recent efforts to broadly examine databases on invasive species began with a workshop on nonindigenous plant databases convened at the request of FICMNEW by the U.S. Geological Survey's (USGS) Florida Caribbean Science Center in Gainesville, Florida, on September 23–24, 1997. This workshop covered 17 databases dealing primarily with plants. Plant species comprise the largest single group of documented alien invasive species and represent about one-half of the known total. For example, a preliminary literature search by the National Agricultural Library, in which some 500 titles could be readily categorized, indicated that about 50 percent of the citations dealt with plants, 30 percent with invertebrates, 10 percent with vertebrates, and 10 percent with microorganisms. Similarly, among the 12 most unwanted organisms named by The Nature Conservancy, 50 percent are plants, 33 percent invertebrates, and 17 percent vertebrates. Thus, the U.S. Department of Agriculture (USDA) and the Department of Interior (DOI) invited the Charles Valentine Riley Memorial Foundation (RMF) to coordinate a workshop under the primary sponsorship of federal agencies from

USDA and DOI. The workshop was conducted to accomplish the following objectives:

- Provide an *inventory* of invasive species databases with emphasis on organisms other than plants, summarizing important properties including program purpose, focus and specialty, database software and format, data elements, biological and geographical coverage, accessibility of data sets, and sharing of databases.
- Strengthen *interpersonal relationships* among individuals developing and maintaining databases.
- Encourage additional *collaborative efforts*.
- Assemble information that can be used to bring *recognition* to current and planned programs that manage invasive species databases or monitor invasive organisms.

The workshop, which was held in Las Vegas, Nevada, on November 12–13, 1998, in association with the American Phytopathological Society and Entomological Society of America, served as the basis for these proceedings. The introductory section for these proceedings which contains an international perspective, a discussion of the problem and of the U.S. Executive Order on Invasive Species, and an agricultural and forestry perspective is followed by a section which includes a description of the workshop process, the abstracts of 34 databases, and a listing of over 25 additional databases. The final section addresses different perspectives on the status of databases, needs, and opportunities.