

I. Introduction.

Non-native invasive plants¹ are sweeping across America. No habitat is immune from this rapidly advancing scourge – croplands, rangelands, pastures, forests, wetlands, waterways, wilderness areas, parks and refuges, urban areas, and highway rights-of ways, are all under attack. In our agroecosystems, invasive plants reduce crop yields, and interfere with harvest operations. In our parks, refuges, forests, and waterways, they pose a serious threat to native plants and animals, and interfere with recreational activities of people. In natural areas, invasive plants can cause very significant changes in terms of composition, structure and ecosystem functionality. This is a long term threat to biodiversity, ecosystem stability, and the balance of nature that is not widely understood or appreciated. According to the Weed Science Society of America, weed losses and associated costs in the United States now exceed \$20 billion per year. Since introduced invasive plants account for about 65% of the total weed flora, their total economic impact on the U.S. economy equals or exceeds \$13 billion per year.

By 1950, at least 180,000 taxa of plants had been introduced to North America for various reasons. Of this total, about 3,700 species (or 20% of the total flora of 18,000 species) have become established outside of cultivation. Fortunately, only about 1% of all introduced species that become established outside of cultivation will become invasive. Unfortunately, by the time such invaders are recognized and actions are taken to prevent further spread, it is often too late, too expensive, or just plain impractical to eradicate them. Recognized strategies for preventing the introduction and spread of new invasive plants include: *exclusion at ports of entry, early detection, reporting, identification* of suspected new species, *rapid assessment* of confirmed new species, and *rapid response* (including containment, eradication, and prevention of movement to new sites), as appropriate.

Prevention of Introduction, the First Line of Defense. The first line of defense against foreign invasive plants is the port of entry inspection program that is conducted by the USDA Animal and Plant Health Inspection Service. This system, employs about 2,800 Plant Protection and Quarantine Officers at all U.S. ports of entry to inspect imported commodities for prohibited invasive species, including listed Federal Noxious Weeds (95 taxa). The tremendous volume of freight that is imported into the country makes this a difficult challenge under the best of circumstances. The advent of containerized cargo which revolutionized long distance shipment of commodities in the 1970s, made exclusion of foreign pests, including invasive plants, through port of entry inspections more difficult than ever.

¹ Under Executive Order #13112 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.”

Early Detection, Rapid Assessment, and Rapid Response, the Second Line of Defense. In order to effectively prevent the establishment and spread of invasive plants that elude the federal exclusion system or begin to spread from cultivation, we need to establish a formal second line of defense to detect, report, identify, assess, and rapidly respond to all new invasive plant species. Such a system would ensure that new invasive plants do not languish in obscurity during their lag phase of population growth. Without such a system, many new invasive plants that enter the country will go unnoticed, spread to new areas, and increase the weed toll that is paid by every person. That toll appears in the form of higher taxes, higher food and fiber costs, and a loss of aesthetics and functionality in the natural world.

These are the proceedings of a workshop that was held in Ft. Collins, Colorado, in June, 2000, to lay the groundwork and to obtain stakeholder input for creating a National Early Warning, Rapid Assessment, and Rapid Response System for Invasive Plants in the United States.