

This article was listed in Forest Nursery Notes, Winter 2008

70. Will some plants get "green cards?: current thoughts on invasive species.

Schutzki, R. E. International Plant Propagators' Society, combined proceedings 2006, 56:289-292. 2007.

Will Some Plants Get “Green Cards”?: Current Thoughts on Invasive Species[®]

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INTRODUCTION

Invasive plants have been a topic of discussion for the past several years and will continue to be in the future. We have witnessed legislation, plant bans, and all sorts of negative information across the country targeted at “non-native” plants. The intent of this article is to review some background on the invasive species issue and highlight information that will aid in our understanding and shape the way we address the issue. Our background review will focus on: Executive Order 13112; National Invasive Species Council, Regulatory Action; the two workshops titled “Linking Ecology and Horticulture to Prevent Plant Invasions” held in St. Louis and Chicago; Assessment of Plant Invasiveness; Research Needs; Position Statements by Stakeholders; and Key Concerns impacting the horticulture and landscape professions. The invasive plant issue is extremely complex and crosses many discipline and commodity boundaries. Each has their own perspective...their own interpretation...and their own agenda when addressing concerns over the classification, use, and impact of invasive plants.

EXECUTIVE ORDER 13112, FEBRUARY 1999

Executive Order 13112 set the foundation and provided the framework from which invasive plant councils and other related groups have emerged. Executive Order 13112 states as its purpose “to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.” The Executive Order is directed at Federal Agencies and federal public lands, however it solicits cooperation and collaboration with stakeholders in public, commercial, and private sectors. As green industry members, being familiar with the stated purpose and terminology within the Executive Order will aid in our addressing the issue. For the complete executive order visit: <http://www.invasivespecies.gov>.

NATIONAL INVASIVE SPECIES COUNCIL — MANAGEMENT PLAN (2001)

As directed by the President, the National Invasive Species Council was required to develop a management plan to act as a blueprint for Federal action “to prevent the introduction of invasive species, provide for their control, and minimize their economic, environmental, and human health impacts.” Importantly, it is stated that the “focus of the plan is on those non-native species that cause or may cause significant negative impacts and do not provide an equivalent benefit to society.” The Management Plan defines the problem and outlines action by Federal agencies in cooperation with stakeholders. It provides a reasonable framework from which we can address the issue. However, problems have arisen with individual interpretation of the intent of the Order when addressing concerns over the classification,

use, and impact of invasive plants and the subsequent action that should be taken. Individual discipline and commodity perspectives play a significant role in the way information is developed and promoted. For the complete management plan visit: <<http://www.invasivespecies.gov>>.

REGULATORY ACTION

Regulatory action existed prior to the Executive Order through federal and state noxious weed acts. Since the Executive Order there has been additional legislation at the state level banning plant species. The most notable has been the prohibitive legislation of Connecticut; however, Illinois, Minnesota, New Hampshire, and Michigan have regulated several terrestrial and aquatic species. A major concern with present legislation is the apparent lack of a scientifically based process justifying the regulation of a species, risk/benefit analysis, the lack of consideration for non-invasive cultivars and hybrids, and the lack of stakeholder input in the decision process.

ST. LOUIS DECLARATION 2001

In 2001 the Missouri Botanical Garden and Royal Botanical Garden, Kew, co-sponsored a workshop entitled "Linking Ecology and Horticulture to Prevent Plant Invasions." Workshop efforts resulted in the St. Louis Declaration that included findings, principles, and the draft voluntary codes of conduct for several key parties. This landmark workshop was conducted to bring the natural resource and horticulture communities together to discuss the issue and generate a plan for workable solutions. "The St. Louis Declaration was an important first step in responding to the global invasive plants species problem. The Findings and Principles were developed by the entire group to provide a consensus statement on the severity of the problem and outline a general approach to address it." For a complete set of the proceedings visit: <<http://www.centerforplantconservation.org/invasives/home.html>>.

CHICAGO 2002

A second workshop was held in Chicago the following year (2002) to build upon the groundwork established in St. Louis, assess the achievements made in voluntary adoption and implementation of the codes, and further explore key components of the issue. The Chicago Meeting generated two recommendations. "(1) Non-invasive alternative plants. When horticultural plants are recognized as invasive, one positive way to address the situation is to offer producers and users alternative (or "replacement") plants that meet their requirements but that are not invasive. (2) Regionality considerations. It is commonly agreed that the potential for a particular plant to behave "invasively" depends on the region in which it exists. This situation occurs with many plants species and means that any effort to address the invasive species problem must include consideration of what is called "regionality." For a complete set of the proceedings visit: <<http://www.centerforplantconservation.org/invasives/home.html>>.

ASSESSMENT OF PLANT INVASIVENESS

Plant invasiveness assessment protocols have their foundation within the natural resource community. R.D. Hiebert and J. Stubbendieck (1993) prepared the *Handbook for Ranking Exotic Plants for Management and Control*. Their ranking sys-

tem was based on two sections, significance of impact and feasibility of control or management. The section on significance of impact examined the current level of impact on natural processes and the character of the natural communities. It also recorded reproductive characteristics, dispersal ability, and competitive nature of the non-native plant. Feasibility of control or management questioned abundance, presence of a seed bank, vegetative regeneration, level of effort required, and side effects of control methods.

The purpose of this system was to provide an analytical approach for prioritizing control and management efforts directed at exotic plant species on public lands. This work has contributed significantly to the subsequent generations of assessment systems currently employed today.

There are several assessment systems currently in practice in Massachusetts, Florida, Michigan, and Natureserve. Most assessment systems address the following criteria: plant characteristics, biological and economic impacts (both positive and negative), control methods and efforts, and value. These systems focus on management priorities and are employed to make informed decisions about plants already present in natural ecosystems.

Predictive Models are being developed to evaluate the probability of whether a new introduction will escape cultivation and become invasive in natural ecosystems. Reichard and Hamilton (1997) developed a hierarchical predictive tree that divides species into three categories; admit, deny admission, and delay admission for further analyses. A second-generation model has been developed by Widrechner et al (2004). The Widrechner model improves upon the Reichard and Hamilton model however it is still under investigation.

RESEARCH

Research is currently being conducted on biology of invasion, ecological impacts of invasive species on natural ecosystems, and the characterization of invasiveness in horticultural species, hybrids, and cultivars. Breeding and selection programs for non-invasive qualities are also under way. Research is needed to provide scientific documentation from which credible decisions can be made.

Position Statements by Stakeholders. As a plant industry where do we stand on the issue? As an association representing a plant industry where do we stand on the issue? Listed below are links to position statements from several organizations, three related to conservation, one from a plant industry, and one from the public policy arena. Visit their websites and read what they have to say.

- The Nature Conservancy, <<http://www.natureserve.org/explorer/index.htm>>.
- Ecological Society of America, <<http://www.esa.org/pao/esaPositions/>>.
- Plant Conservation Alliance, <<http://www.nps.gov/plants/alien/apwgaction.htm>>.
- American Seed Trade Association, <<http://www.nasda.org/joint/ASTAinvasivespecies.htm>>.
- National Center for Public Policy Research, <<http://www.national-center.org/PRNPA544InvasiveSpecies.html>>.

The Invasive plant Issue. Some of the key concerns facing the plant industries are:

- Definitions and interpretations.
- Environmental, economic, and human health negative impacts.
- Environmental, economic, and human health benefits.
- Invasive plant lists.

CONCLUSION

So, where does this bring us? The Executive Order set the foundation and provided the framework from which we can address this issue. The two workshops were instrumental in bringing the natural resource and horticulture communities together to discuss the issue and agree upon ways in which we can contribute to workable solutions. The information presented, discussed, and generated provides useful insight into identifying: how we as an industry can have a positive impact on minimizing the impact of harmful invasive plants; how we as an industry can address the issue both within and outside our boundaries; and equally important what we as an industry should expect as a set of standards in dealing with the issue from broad-based collaboration with those outside our industry.

The horticulture and landscape professions have been chastised for contributing to the invasive species problem. Contrary to points mentioned in the Executive Order, we have not always been at the table when discussing the invasive plant issue, assessing the scientific and economic credibility of the information, and contributing to what would be considered reasonable and realistic solutions. As an industry we have tended to be more reactive than proactive. The time has come for us to be proactive and be involved in the solution.

ADDITIONAL REFERENCES

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