



Perspectives of Nursery Professionals on Invasive Plants and the St. Louis Voluntary Codes of Conduct

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(in alphabetical order)

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Introduction

Although many introductions of invasive species are unintentional, most harmful invasive plants have been intentionally introduced (Pimentel 2005, Reichard and White 2001). Today, problematic invasive plants continue to be imported for ornamental and landscaping purposes through the horticulture trade (NRC 2002, Cal-IPC 2004).

There are several avenues of prevention of invasive introductions through horticulture: government regulations, education, and self-regulation. Unique characteristics of the horticulture trade indicate that self-regulation, such as voluntary codes of conduct, may be a viable option to curb horticultural introductions of invasive plants. In 2001, representatives of government, the horticulture trade, academia, the gardening public, and botanic gardens drafted the St. Louis Voluntary Codes of Conduct (CPC 2001). In particular, voluntary codes of conduct for Nursery Professionals outlined several preventative measures to reduce sales of invasive plants.

Given these recent efforts, we chose to research behavior and attitudes of nursery professionals toward invasive species, preventative measures, and the St. Louis Voluntary Codes of Conduct.



Red sesbania (*Sesbania punicea*), seen here invading the American River parkway, was introduced via horticulture.

Objectives

- Examine awareness and attitudes of nursery professionals regarding invasive species and the role of the horticulture trade.
- Examine attitudes and behavior of nursery professionals regarding preventative measures, in particular:
 - Consistency between current behaviors and preventative measures
 - Willingness, motivation, and obstacles to engage in these measures
 - Correlation between particular business characteristics attitudes and behaviors.
- Assess awareness of and willingness to adopt the St. Louis Codes of Conduct.

Methods

Telephone survey of nursery professionals

- Survey Population: San Francisco Bay Area (9 counties), wholesale and retail nurseries and growers.
- Surveyed owners, managers or employees in charge of plant purchasing.
- 25 multi-part closed-ended questions.
- 54 surveys completed.



*Preventative Measures

(based on the St. Louis Voluntary Codes of Conduct for Nursery Professionals)

- Evaluate horticultural plants to determine whether they are likely to become invasive
- Monitor plants to assess whether they may be invasive
- Interact with experts to determine which plants are or might become invasive
- Interact with experts to determine alternatives to plants that might be invasive
- Try to breed alternatives to invasive plants
- Phase out plants that nursery associations, scientists, and other experts determine to be invasive
- Encourage customers to use noninvasive plants

Results

Awareness of invasive species is very high

- 100% of respondents had heard the term "invasive species."
- 98% of respondents had heard of invasive plants becoming problems in wildlands or natural areas.
- 93% of respondents agreed with the statement "invasive plants are an important environmental concern."

Awareness of the role of the horticulture trade is also high

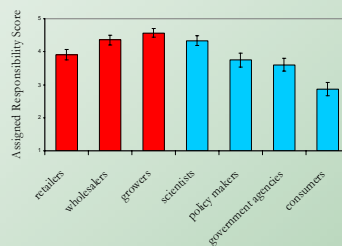
- 81% responded that nurseries sell invasive plants or plants that may become invasive.
- 81% agreed with the statement "the horticulture trade plays a role in the introduction of invasive plants."

Awareness of the St. Louis Voluntary Codes of Conduct is very low

- 93% had NOT heard of the St. Louis Voluntary Codes of Conduct for nursery professionals.

Who should be responsible for preventing plant invasions via the horticulture trade?

Respondents assigned a level of responsibility (1-5, with 5 = most responsible) to each of 7 groups, independent of the other groups.



What motivates or deters nursery professionals from engaging in preventative measures?

Encouraging Factors Most Cited

- Concern for the environment (89%)
- Cultivating a "green" business image (74%)
- Consumer demand (69%)

Discouraging Factors Most Cited

- Lack of information (65%)
- Limited personnel (59%)
- Too time consuming (57%)



Participation in Preventative Measures: Active, Willing, and Unwilling Groups

Despite a lack of awareness of the Codes, 28% stated they have engaged in the majority of the preventative measures. We call this group "active" in prevention.



• "Active" group (28%): report having engaged in at least 4 out of 7 preventative measures.

• "Inactive" group (72%): report having engaged in 3 or fewer of 7 preventative measures.

We further classified "inactive" respondents into "willing" and "unwilling" categories:

- "Willing" group (41%): report willingness to engage in most preventative measures
- "Unwilling" group (31%): report that they would not engage in most preventative measures

"Active" group more encouraged by:

Cultivating a "green" business image*
Concern for the environment*

"Inactive" group more discouraged by:

Lack of incentive*
Expense*

*p<0.05, Wilcoxon nonparametric one-way t-tests

Summary of Results

Our results suggest that nursery professionals are highly aware of invasive species, and the role of the horticulture trade in invasive plant introductions. Despite very low awareness of the Codes, some nursery professionals have already engaged in some preventative measures. These "active" respondents were more encouraged by environmental reasons, than inactive respondents, who were more discouraged by financial obstacles. There may also be a segment of nursery professionals willing to engage in preventative measures.

Survey respondents found the horticulture trade, as a whole, more responsible for preventing introductions than non-industry groups. Moreover, scientists were also given a high responsibility score, whereas consumers were held least responsible.

Recommendations

Outreach

- More outreach for preventative measures is needed.
 - Knowledge of the Codes makes some nursery professionals (52%) more likely to engage in preventative measures.
- "Willing" group may merit the most attention for future outreach efforts.

Information Access

- "Lack of information" was most often cited as an obstacle to engaging in preventative measures: detailed information should be readily available.
- Use *Sunset Western Garden Book* to publish specific information about invasive plants.
 - JWG*B is referenced by 72% of respondents who make plant labels
- Scientists and NGO partnerships should play a key role in generating, synthesizing and disseminating information to nursery professionals.



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