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Desert Bioscape Training Influences Master Gardeners' Practices

Angela M. O'Callaghan

University of Nevada Cooperative, ocallaghana@unce.unr.edu

ML Robinson

University of Nevada Cooperative Extension, robinsonm@Unce.unr.edu



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Abstract

Teaching desert-appropriate horticultural techniques to Las Vegas residents may save millions of gallons of water. Master Gardener volunteers receive such instruction through the Desert Bioscape program. A survey of Master Gardeners found many of them incorporated the training into their own landscapes and some teach these principles at community classes. A majority of respondents (92%), do not teach classes, but are neighborhood resources for desert landscape information.

Angela M. O'Callaghan

Area Extension Specialist, Social Horticulture
ocallaghana@unce.unr.edu

M.L. Robinson

Area Extension Specialist, Water
robinsonm@unce.unr.edu

University of Nevada Cooperative Extension
Las Vegas, Nevada

Introduction

Las Vegas' water comes from the Colorado River and is stored in Lake Mead, whose volume has declined sharply because of drought and the demands of an increased population. The population of Las Vegas may exceed 2,000,000 by 2005 (City of Las Vegas, 2004), a 400% increase since 1980. New residents usually come from environments dissimilar to Southern Nevada, located in the Mojave Desert. Driest of the North American deserts, the Mojave receives 10.5 cm rainfall annually. Precipitation, light intensity, soil characteristics, and native vegetation differ from other parts of the US.

The University of Nevada Cooperative Extension program Desert Bioscape (Robinson, 1998) teaches desert-appropriate landscaping approaches. It includes 15 hours of classes on native and desert-adapted plants, local wildlife, and integrated pest management (IPM).

It is critical that Southern Nevada residents learn water-efficient practices. Residents use 67% of Southern Nevada's water, with roughly 25% wasted through inefficient landscape irrigation (Southern Nevada Water Authority, 2003). Most (60%) Las Vegas homes are owner-occupied, thus outreach to homeowners could have a significant effect on decreasing water waste. The water authority calculates that appropriate plant selection and landscape design could save approximately 113,000,000 gallons of water annually. Master Gardeners can both teach and model such water-efficient practices.

The Master Gardeners of Southern Nevada

University of Nevada Cooperative Extension (UNCE) established the Southern Area Master Gardener program in 1992. Master Gardeners receive 70 hours of training in horticultural subjects. Like much of Southern Nevada's population, most moved to the area from other environments.

Master Gardeners are recruited through mass media and word of mouth. Teaching water-efficient landscaping in underserved areas is as important as in ones that are more affluent. In the past 3

years, recruitment from communities of color has been a priority. The volunteer pool is now more ethnically and economically diverse. Participants join primarily for horticulture information, but many desire to contribute to the community (Boyer, Waliczek, & Zajicek, 2000; Schrock, Meyer, Ascher, & Snyder, 2000). Each trainee pledges a minimum of 50 hours annually, either at the help desk or in a community based project. Several projects involve teaching at community centers, libraries, club meetings, etc.

Desert Bioscape

A significant portion of the Master Gardener curriculum emphasizes desert ecology, under the title "Desert Bioscape." It is a practical approach to landscape establishment and maintenance. The standard style for Master Gardener training is to provide functional materials to be used in a home setting. Desert Bioscape instruction has been delivered to approximately 350 Master Gardener trainees since 1997.

Cooperation with Other Las Vegas Valley Agencies

The Water, Horticulture, Environment, and Economics team of Cooperative Extension works closely with the Southern Nevada Water Authority (SNWA) and the Las Vegas Valley Water District (LVVWD), teaching classes and serving on advisory boards. Master Gardeners form the docent corps of the LVVWD's Desert Demonstration Gardens and staff SNWA events. In all situations, they use the information gained via the Desert Bioscape materials of the Master Gardener training.

Determining Usefulness of Desert Bioscape

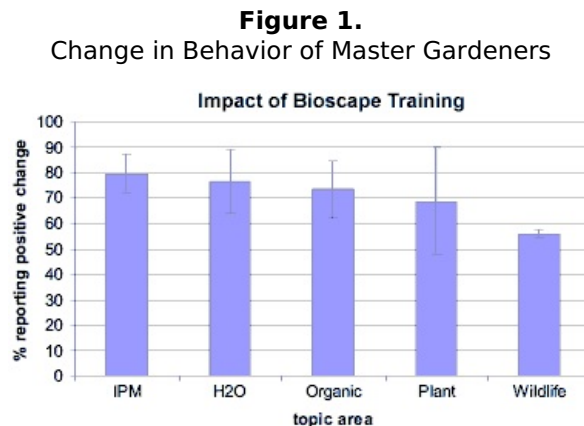
The goal of the Desert Bioscape program is to encourage local residents to create sustainable, water-conserving landscapes. To determine whether Desert Bioscape training could effectively affect the public at large, we decided first to ascertain whether Master Gardeners who had already received the training were utilizing this information. While other Las Vegas residents have taken Desert Bioscape, Master Gardeners have been tracked over several years and were thus more accessible. They are an important part of UNCE outreach to the community; hence, their incorporation of the program material into their own landscapes seemed a good starting point for taking Desert Bioscape to a wider audience.

A survey containing questions on horticultural/gardening practices as well as questions on general Master Gardener topics was sent to 318 persons who had completed the program and were on the mailing list. Forty-eight percent (153) were returned. Most respondents were currently certified Master Gardeners.

The survey asked about changes in five areas:

- Using Integrated Pest Management (IPM)
- Water conservation
- Organic gardening practices
- Plant selection and health
- Incorporation of non-plant wildlife

The results, all positive changes, are charted in Figure 1 (n=153).



Two summary questions asked about changes they had made in their home landscapes. Eighty-two percent replied positively to the statement: "I use fewer chemical fertilizers and pesticides, and have added more desert native or native-like plants to conserve water."

Furthermore, 88% affirmed that their landscapes are more sustainable as a result of taking the training. Two questions related to information dissemination. Although only 18% of respondents had actually taught classes, a large majority (141 = 92%) stated they are resource persons for

neighbors attempting to make their yards more desert-appropriate: "I now understand that our yards are small ecosystems that we, as well as our neighbors, must interact with. This knowledge influences what I do and don't do in the yard" (89% affirmative).

Conclusions

Instructing desert residents about creating a sustainable landscape requires a curriculum and the means to deliver it. The Desert Bioscape program provides training for the unique conditions of the Las Vegas area. Master Gardener volunteers are important community educators. That Master Gardeners have integrated the training into their own horticultural practices indicates that Desert Bioscape can improve public awareness and use of desert horticulture techniques. It is important that these highly trained volunteers expand their teaching of the program. This survey will be further developed and sent to rural areas to determine if the results are similar.

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