

resented (Table 2). In addition samples were also received from other states as well as from foreign countries (Table 2).

The effectiveness of the diagnostic laboratory is also demonstrated by the 49 new host records, 38 in ornamentals, 7 in tropical fruits and 4 in vegetables, that were discovered in the first 20 months of operation (Table 3).

Samples are processed within 2 to 3 days and the growers often have an answer to serious problems within a week if a disease organism has to be cultured. It is estimated that nearly one-half of the nurseries in Dade County have come in contact with the laboratory either through its services or the application of laboratory results and recommendations. The next step will be to computerize the results of the

Table 3. New host records found through the Plant Disease Clinic in 1990-1991.

Crops	Number of new host records
Ornamentals	38
Tropical Fruits	7
Vegetables	4

laboratory work so as to determine which diseases and insects appear more frequently and at what time of the year. Through coordination of this information, an integrated pest management system can be applied.

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CREATING A LANDSCAPE FOR WILDLIFE

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Abstract. Since its inception in 1990, the Florida Wildlife Habitat Program has involved more than 2,000 households statewide in landscaping practices to benefit wildlife. Participants are sent a packet of publications designed to increase their understanding of wildlife and an application form to be completed and returned once their landscape has a wildlife garden at least 10 square yards in size and composed of 50% plants native to Florida. Completed applications are evaluated, and satisfactory landscapes are certified. An evaluation mailed to nearly 700 participants who had not yet returned their certificate applications indicated that the educational materials had helped to improve wildlife habitat conditions in most landscapes, but that the certification procedure needed to be refined.

Florida's population is undergoing major changes both in terms of overall density and demographics. This changing population presents many challenges in terms of environmental education, among which is the need to educate an urbanizing public about the relationship between wildlife and habitat. Based on an in-depth analysis of the Florida situation, Duda (1987) reached the conclusion that, "of all demographic variables, it appears as though the level of education is the most sensitive indicator of appreciation, concern, affection, knowledge and respect for animals and the natural environment." Nearly 85% of Florida's population resides in urban areas. This condition presents an edu-

cational dilemma in that urban residents are the group least likely to sacrifice environmental and wildlife values for economics, but also they are the least knowledgeable about wildlife and their needs (Duda, 1987). Teaching the importance of habitat to the conservation of wildlife is a great challenge. Urban residents think largely in terms of individual animals, not in terms of populations (Kellert, 1976). Therefore, a program that broadens the public's concept of wildlife is necessary, and an effective approach would be one that permits the public to visualize the benefits of habitat management to individual animals residing near their home.

Wildlife gardening has received much media coverage nationally in recent years and has drawn the attention of the public. Often, however, there is little distinction between attracting these wildlife and creating the habitat necessary to support them. Additionally, it often is difficult for the public to transpose general gardening information to correspond with Florida's unique wildlife and gardening conditions.

Because of these considerations, the Florida Wildlife Habitat Program (FWHP) was developed in 1990 through the efforts of the Cooperative Urban Wildlife Program, a cooperative effort of the Institute of Food and Agricultural Sciences (IFAS), University of Florida, and the Nongame Section of the Florida Game and Fresh Water Fish Commission. FWHP was modelled similarly to the Backyard Wildlife Program of the National Wildlife Federation, but was designed to provide information specific to Florida. The objectives of the FWHP are to: (1) educate the public about wildlife and their habitat needs, and (2) improve wildlife habitat in developed areas.

The FWHP is intended to be an educational program that involves participants in activities that increase awareness and produce visible habitat enhancement results. To achieve this, program design had to permit participation by a large segment of the public while being capable of producing results consistent with the public's expectations.

Material and Methods

Guidelines for FWHP were developed by the authors after consultation with staff involved with the National Wildlife Federation's Backyard Wildlife Habitat Program

and the Nongame Section of the Florida Game and Fresh Water Fish Commission. Guidelines were intended to be nonrestrictive and simple, yet provide positive benefits to wildlife.

Participants are asked to create and (or) maintain a wildlife garden area at least 10 square yards in size. Because plant selection is important to wildlife, participants also are asked to use at least 50% plants native to Florida within their wildlife garden, and to choose those plants based on the types of wildlife that they wish to attract.

Participants are recruited by using a variety of methods, including the news media, flyers and public programs. Interested persons mail information request forms to one of several offices nearest their home address. Currently, information requests are processed by the authors and by IFAS horticulture agents in Hillsborough, Osceola and Sarasota counties.

Information packets consist of various publications developed by the authors that cover a range of specific topics related to wildlife landscaping, a general wildlife landscaping booklet developed by the Nongame Section of the Florida Game and Fresh Water Fish Commission (Cerulean *et al.*, 1987), an introductory letter describing the FWHP and an application form.

Participants are expected to use the information to design a wildlife area in their landscape. Once their landscape is completed, they may fill out the application form and return it. If they have met the FWHP requirements, their landscapes are then certified and they receive a personalized certificate. Certified participants are placed on a mailing list to receive future publications as they are developed.

The application form consists of a section that includes questions on the types of wildlife that occur on the property and the steps taken to enhance the property for wildlife. An additional section requires the participant to diagram and label the plants within the wildlife area. Participants are asked to supply slides or photos of their wildlife landscape, but this is not required.

In 1991, a survey was sent to all participants in central Florida that had not yet returned their certificate application. The survey was intended to determine why the application had not been returned and to evaluate the program materials.

Results and Discussion

Interest in the FWHP has been great. During the year since its inception, 2,319 households have requested the information/application kits. Most of the requests have come from the densely populated urban counties in southern Florida (1,087 requests) and central Florida (832 requests).

In spite of the large number of program participants, however, few have returned their application to have their landscapes certified. In southern Florida, 2.4% ($n = 26$) have been certified, in central Florida, 6.0% ($n = 50$), and in northern Florida 24.0% ($n = 96$).

Relatively low certification rates are the result of a low application rate by the participants and not due to certification denial because of a failure to meet program requirements. To date, 20 applications were rejected for certification. In all instances, rejection resulted because the wildlife

areas did not contain the minimum percentages of native plants.

Certified wildlife habitats generally exceeded the minimal area of 10 square yards established by the program guidelines. Based on data from northern Florida, the mean size of 96 certified wildlife habitats was 495.7 square yards. Comparable data for other regions of Florida have not been completed, but are believed to be similar.

The evaluation survey was sent to the 782 individuals in central Florida who had not yet applied for certification. To date, 158 (20.2%) completed survey have been returned. Survey results show that half ($n = 79$) intended to return their applications in the future but were still completing their wildlife areas. Of the remaining respondents, most indicated that either the program requirements were too difficult to achieve (25%) or that the application form was too time consuming to complete (14%). Relatively few received the information packet and then decided against landscaping for wildlife (8%), or declined to participate further because the information was too confusing (3%).

Respondents were generally satisfied with the educational materials included in the information packet. Nearly 94% felt that these publications were above average. This suggests that even those participants who did not (and may never) apply for certification increased their awareness of wildlife - habitat relationships.

Survey results indicate that most participants used the information to modify their landscape. Even among those that indicated that they would not apply for certification, 51% ($n = 18$) altered their landscapes to benefit wildlife. Such results suggest that the impact of the FWHP cannot be measured solely by the number of landscapes that are certified.

The survey also suggested areas of the FWHP where modifications could be made to improve the program. Based upon these results, a fact sheet is being developed that will more clearly explain the overall goals and requirements of the FWHP. The purpose of this will be to clear up misconceptions that apparently exist among many participants. More effort also will be expended in providing more information on native plants; as many participants expressed some problems in selecting, using, and locating sources of natives. A third area for modification will be the program's amount of contact with participants following their receipt of the information packet. Many survey respondents indicated that their delay and (or) failure to apply for certification was, at least partially, due to the lack of contact with anyone involved in the FWHP after receipt of written materials. A periodical newsletter is one method being developed to alleviate this concern.

Conclusions

Results to date indicate that many Floridians are eager to modify their existing home landscape to benefit wildlife if they are given materials that show them how to do it. These materials not only can serve to educate the public about wildlife and their habitat requirements, but they also can improve habitat conditions. Programs such as this, however, should be careful to develop clear and concise guidelines for the public especially if many options are available to them within the program's constraints. It also is important to consider the great importance of remaining

in contact with participants during the time that they are working towards their objectives.

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