

6-1-2003

## Partnerships for Natural Resource Education: Differing Program Needs and Perspectives of Extension Agents and State Agency Staff

Martha C. Monroe  
*University of Florida*, mcmonroe@ufl.edu

Susan K. Jacobson  
*University of Florida*, jacobsons@wec.ufl.edu

Alison Bowers  
*University of Florida*



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

---

### Recommended Citation

Monroe, M. C., Jacobson, S. K., & Bowers, A. (2003). Partnerships for Natural Resource Education: Differing Program Needs and Perspectives of Extension Agents and State Agency Staff. *The Journal of Extension*, 41(3), Article 5. <https://tigerprints.clemson.edu/joe/vol41/iss3/5>

This Feature Article is brought to you for free and open access by the Conferences at TigerPrints. It has been accepted for inclusion in The Journal of Extension by an authorized editor of TigerPrints. For more information, please contact [kokeefe@clemson.edu](mailto:kokeefe@clemson.edu).



June 2003 // Volume 41 // Number 3 // Feature Articles // 3FEA3



PREVIOUS  
ARTICLE



ISSUE  
CONTENTS



NEXT  
ARTICLE

## Partnerships for Natural Resource Education: Differing Program Needs and Perspectives of Extension Agents and State Agency Staff

### Abstract

An evaluative survey of 45 Extension agents and 59 state forestry agency staff in Florida 1 year after a joint in-service training provides insight into the program needs for both groups as they develop public education programs on wildland fire. Results analyzed three primary barriers to program implementation: educational, logistical, and attitudinal, providing insight into the needs for both groups as they develop public education programs. Providing a toolkit of materials and resources reduces logistical and educational barriers and assists agents with program delivery in a new topic area. Supervisor support may be key to reducing additional barriers that agents perceive.

### Martha C. Monroe

Assistant Professor  
School of Forest Resources and Conservation  
Internet Address: [mcmonroe@ufl.edu](mailto:mcmonroe@ufl.edu)

### Susan K. Jacobson

Professor  
Department of Wildlife Ecology and Conservation  
Internet Address: [jacobsons@wec.ufl.edu](mailto:jacobsons@wec.ufl.edu)

### Alison Bowers

Program Assistant  
School of Forest Resources and Conservation

University of Florida  
Gainesville, Florida

The Cooperative Extension Service is respected for its ability to convey science-based information to citizens. The institution is accustomed to updating farmers on the latest in pest research and new seed varieties (Woods, 2002a) or assisting homeowners and communities with horticultural problems. It effectively works in areas where county agents and state specialists have background, information, and experience.

Emerging and unfamiliar issues, however, provide a new set of challenges. Partnerships between government agencies and external organizations can synergistically increase staffing, expertise and perspectives to deal more effectively with resource management issues and the public (Endicott, 1993; Rocha & Jacobson, 1998). A partnership for public outreach between the Cooperative Extension Service (CES) and the Florida Division of Forestry (DOF) allowed us to examine this process in the context of wildland fire.

This article analyzes what Extension agents and DOF field staff need when communicating to the public about a novel resource management issue and compares their perspectives based on survey results. The findings and recommendations should be helpful when introducing any new topic through Cooperative Extension or when partnering with other agencies.

The Florida CES is well equipped to work in agriculture, the state's second largest income producer. The Institute of Food and Agricultural Sciences has a strong history of working with industry to invent frozen orange juice concentrate (Woods, 2002c), conquer tomato yellow leaf curl virus (Woods, 2002b), and reinvent disease-resistant peanuts (Nordlie, 2002).

Unlike in other agricultural states, however, information about Florida pests, diseases, crop variants, and climatic concerns are not often relevant throughout the region. The information tends to be Florida-specific. It may not be cost-effective for industries to invest in such limited applications. Thus, the Florida CES and the Florida Agricultural Experiment Station play critical roles in providing farmers and industry with important information to enhance their productivity. This emphasis on agriculture permeates the CES, creating a large group of county agents knowledgeable about plant and animal commodity agricultural issues but less familiar with natural resource concerns.

The wildfires in 1998 and 1999 presented a new opportunity for Florida's CES. The fires affected every county in Florida. Many new residents, long-time farmers, condo dwellers, suburbanites, and businesses of many kinds experienced smoke, evacuation, or felt they were at risk of wildland fire (Jacobson, Monroe, & Marynowski, 2001). Even the famous Daytona 500 NASCAR race was cancelled. The economic impact of the 1998 fires was estimated to be at least \$620 million (Butry, Mercer, Prestemon, Pye, & Holmes, 2001).

In the 13 years since Florida had last experienced a major fire event, the state's population had grown by nearly 4 million people (Florida Research and Economic Database, 2002), many of whom were unfamiliar with the potential flammability of the landscape. Because landowners can help protect their property with vegetation-reduction techniques, appropriate housing materials, and on-going forest and landscape management activities on private as well as public lands (Firewise Web site: <<http://www.firewise.org/>>), there was and is an important public education role for Cooperative Extension.

### **Pedagogical Context**

Barriers to conducting educational programs in the environmental arena are well known. A study of teachers by Ham and Sewing (1987-88) revealed suites of barriers to conducting environmental education. Three main barriers relevant to the development of Extension programs about wildland fire could be:

1. Educational barriers: agents don't know enough about the wildland fire and how the topic can be conveyed;
2. Logistical barriers: agents don't have time, resources, or funding; and
3. Attitudinal barriers: agents don't have positive attitudes about natural resources or wildland fire.

The basic framework that has supported a wealth of social research in human behavior and behavior change would suggest that in addition to information and positive attitudes, people also require support from peers and supervisors to feel inclined to engage in a new behavior (Hernandez, 2000).

The research discussed here investigated opinions among CES and Florida Division of Forestry (DOF) staff 1 year after they participated in an Extension In-Service Training on wildland fire. We examined:

- Perceptions about the importance of educational programming about wildland fire,
- Perceptions of supervisory support, availability of resources and tools, and
- Barriers to conducting fire education programs.

The results helped identify what influenced people to conduct fire programs, what prevented this activity, and compared responses between the two agencies.

### **The Wildland Fire Training Program**

Recognizing that county agents did not have a bank of information about fire to draw from, state specialists worked with other state agencies and organizations to create a toolkit of resources for county agents. With funding from the Advisory Council on Environmental Education of the Florida Fish and Wildlife Conservation Commission, the School of Forest Resources and Conservation (UF) worked with the Florida Division of Forestry (DOF), the Florida Chapter of The Nature Conservancy, and the UF Department of Wildlife Ecology and Conservation to assess public perceptions, write Extension fact sheets, and develop other programmatic resources.

The resulting Wildland Fire Education Toolkit (Figure 1) was distributed to county Extension agents, DOF field staff, and county and city fire educators during three 1-day in-service training workshops in January 2000. The workshops provided background information about wildland and prescribed fire, defensible space, and ecosystems at risk and gave participants time to work together to develop a plan to identify at-risk communities, present educational programs, obtain media coverage, and establish demonstration areas. This team approach was designed to help counter any individual perceptions of educational, logistical, or attitudinal barriers.

**Figure 1.**  
Contents of the Wildland Fire Education Toolkit

#### A. Wildland Fire Toolkit Manual

- Background information on Floridians' attitudes about fire: <http://edis.ifas.ufl.edu/FR083> and <http://edis.ifas.ufl.edu/FR089>
- Descriptions of videos: <http://edis.ifas.ufl.edu/FR085>
- Sample presentation and script: <http://edis.ifas.ufl.edu/FR085>
- Press kit: <http://edis.ifas.ufl.edu/FR086>
- Case study of pilot demonstration area: <http://edis.ifas.ufl.edu/FR087>

#### B. Educators Guide to Fire in Florida (Division of Forestry publication for grades 4-8)

#### C. Video Library with 5 videos on wildland fire in Florida

#### D. Roadsign Sign (4' x 4' "Prescribed fire--Forest Health; Wildfire Prevention")

#### E. CD-ROM with 80 slides; Sample Presentation; Press Kit; and Reporting Forms

#### F. Multiple copies of publications:

- *Landscaping in Florida with Fire in Mind*; brochure: <http://edis.ifas.ufl.edu/FR076>
- *Where There's Fire There's Smoke: Air Quality and Prescribed Burning in Florida*; 4 pages: <http://edis.ifas.ufl.edu/FR058>
- *Effects of Fire on Florida's Wildlife and Wildlife Habitat*; 4 pages: <http://edis.ifas.ufl.edu/UW132>
- *Benefits of Prescribed Burning*; 2 pages: <http://edis.ifas.ufl.edu/FR061>
- *Prescribed Burning Regulations in Florida*; 4 pages: <http://edis.ifas.ufl.edu/FR055>
- *Developing Land in Florida with Fire in Mind: Recommendations for Designers, Developers, and Decision Makers*; 4 pages: <http://edis.ifas.ufl.edu/FR059>
- DOF Brochures: *Woodland Homes Fire Safety*; *Mobile Homes Fire Safety*
- DOF Doorhangers: *Good Fire/Bad Fire*; *Fire Safe in the Interface*
- DOF and USFS booklet: *The Natural Role of Fire*; 18 pages

Extension agents and staff from other agencies were encouraged to work quickly in their counties to conduct programs because the wildfire season started early that year. By May 2000 we had compiled an impressive set of results: 42 programs in 15 counties reached 2,200 citizens; an additional 37 media contacts led to sharing fire messages with a potential audience of 2.1 million residents. Fairs and exhibits drew approximately 23,000 contacts. A closer look at these numbers reveals that Extension agents were not the dominant deliverers of information: 11 were agents (22% of those who attended the in-service training) and 22 were DOF staff (37% of those who attended). An additional 13 other agency personnel (mostly county fire staff) also reported activity in this public education activity.

### Methods

One year after the in-service training, a survey was distributed to 104 workshop participants (45 Extension agents and 59 DOF staff) to better understand:

- Which components of the Toolkit they used,
- Which activities they implemented,
- Their incentives and barriers to conducting wildland fire educational activities, and
- Their recommendations for future Extension programs.

The survey consisted of 9 multi-part questions. One 13-item/5-point Likert scale focused on incentives, knowledge, and attitudes about wildland fire. A 20-item checklist listed possible outreach activities with the Toolkit. A 16-item/5-point rating scale rated possible barriers to conducting programs. And several closed and open-ended items asked for general impressions, improvements, needs, and factors that determine their involvement in public outreach on natural resource topics. A reminder postcard and two subsequent copies of the survey were sent to improve response rate (Dillman, 1978).

### Results

A total of 71 surveys were completed and used in the analysis. Several of the non-respondents had moved to a new position, and the survey did not reach them. Phone calls to 10 non-respondents indicated that they have similar perspectives and practices as the respondents, suggesting little non-response bias.

The respondents reported that the Toolkit was most useful for conducting public programs (57%), distributing fact sheets (48%), and sending news releases (45%). The least frequent use was for communicating on a list-serv (1%) and for creating flyers (7%). The only significant differences between CES and DOF respondents reflect different strategies that are used to convey information to the public. DOF staff were more likely to be interviewed by the media ( $\chi^2 = 7.07$ ,  $p < 0.01$ ) and to set up a display at an event ( $\chi^2 = 7.9$ ,  $p < 0.01$ ).

Even the tools that were not frequently used, however, were helpful to some respondents. Although slides and videos were only used by 28% of the agents, over 60% of the respondents rated both tools among the most helpful in another portion of the survey. The diversity of strategies employed by CES agents and DOF staff to convey information about wildland fire indicates that a toolkit with a variety of media is a helpful resource in a partnership.

Respondents provided positive comments about the Toolkit in the open-ended section of the survey. They were pleased to have the CD with photographs and requested additional copies of brochures to restock their kits. More videos, more slides, and more presentation outlines were mentioned as helpful additions.

The barriers that constrained participants from delivering programs on wildland fire were the same for DOF staff and CES agents. The largest barriers were time to prepare for programs and time to implement programs (rating 3.6 and 3.5 on a 5-point scale where 5 is a very important barrier). Items that have to do with resources, contacts, partners, and local experts were all rated as less important barriers (2.3, 2.2, 1.9, and 1.8, respectively, on the same 5 point scale). A factor analysis (Marradi, 1981) of the barriers reflected these differences by separating the time constraints into one factor and clumping all logistical and resource constraints together on a matrix of five factors.

The most important incentives that supported the respondents' use of the Toolkit to educate the public about wildland fire were beliefs that:

- Prescribed fire is an important land management tool (4.7 on a 5-point scale),
- It is important for their organization to provide public information on wildland fire (4.4), and
- Wildland fire is an important issue in their county (4.3).

Only two (out of 13) items showed a significant difference between CES and DOF respondents. In both cases, DOF staff more strongly agreed that their supervisors believe providing public programs on wildland fire is part of their jobs ( $\chi^2 = 17.4$ ,  $p < 0.001$ ) and that it was important for their organization to provide public information on wildland fire ( $\chi^2 = 22.6$ ,  $p < 0.0001$ ).

One question asked respondents to reflect on the factors that help determine whether they would provide public programs on other natural resource topics. The most important factors were an expression of interest from the program constituents (4.3 on a 5-point scale) and direction from the ultimate supervisor (3.9 on same scale). CES agents expressed significantly stronger preferences for two factors than their DOF counterparts, namely, (1) expressed interest from constituents ( $\chi^2 = 12.11$ ;  $p < 0.05$ ) and (2) easily accessible resource people ( $\chi^2 = 10.14$ ,  $p < 0.05$ ). DOF staff, on the other hand, are more likely to conduct such programs with direction from their ultimate supervisor ( $\chi^2 = 9.60$ ,  $p < 0.05$ ).

## Discussion

The organization of the two institutions, CES and DOF, as well as the agencies' missions help explain the differences in the initial response to using the Toolkit and providing wildland fire programs. The CES is organized from the bottom up; county agents complete their Plan of Work at the end of the previous year to include the activities they will coordinate in the current year. Despite our attempts at marketing the program, few agents were able to drop their previous commitments to design new activities so quickly. The DOF, on the other hand, responds from the top down. If a supervisor tells staff to do fire programs this week, that is indeed what they do.

The DOF also has highly visible state authority for wildland fire suppression, so the public and their staff more readily accept their role in fire education. That perception might explain why one County Extension Director was reported to discourage an agent from attending the in-service, because wildland fire was "someone else's job."

These differences in organizational structure and perceived responsibility also were seen in the attendance record for the in-service workshop. DOF staff were instructed to attend, so 60 showed up. When the annual voluntary registration period for in-service training closed, only 14 agents were on the list. A memo from the Dean of Extension expressing her expectation that every county send a representative resulted in 42 of the 67 counties attending.

In both agencies, people attended the in-service who may not have been initially interested in using the Toolkit. Being forced to attend training may not be the best strategy for building long-term support for a program, but it may also be the only way to begin a novel program in an institution without a track record or publicly expected responsibility in this area.

The differences in program activities and motivations reported in the survey results certainly reflect these key differences between the two institutions' responsibilities and structures. Importantly, though, despite these organizational differences, at the individual level there was no significant difference between the two groups in the responses to statements like:

- "I believe providing public programs on wildland fire is an important priority for me;" and
- "My supervisor believes providing public programs on wildland fires is an important priority for me."

Thus, within the Extension service, agents can accept the fact that wildland fire may not be as

important to the mission of the organization, but they may still believe that, in the context of their county and the public they serve, it is an important part of their work.

## Conclusion

New programs and new issues are difficult to add to the already full plate of county Extension agents. Among the barriers to conducting new programs, logistical barriers (i.e., no program materials, no contacts, no resources) can be reduced by providing a toolkit of program resources and partnering with a relevant agency. The agents and staff who attended an in-service training on wildland fire in 2000 and responded to our survey indicated that the Wildland Fire Toolkit provided needed resources. These resources were useful to both DOF staff and CES agents, even though they have different patterns of working with the public.

The distribution of the Toolkit was conducted through an in-service training with a variety of staff, which was an excellent strategy to introduce people to each other and to a new issue. Presumably, this training and the subsequent activity with local partners reduced the educational and attitudinal barriers that might have existed. The most significant barrier, the lack of time, is not something a specialist can easily address. Having the support of supervisors at all levels, however, will assist agents in their justification of why other important programs were given less attention.

If a specialist wishes to launch a new program outside the Extension agents' sphere of reference, it may be wise to partner with an agency that has a history or interest in this area. In addition to expanding agents' resources at the local level, a partnership will likely improve immediate use rates. It may take an annual cycle for Extension agents to gain confidence in the new area and build the new topic into their work plan. A partnership is also an important tool to build credibility with the public, both in the creation of the Toolkit and the distribution of the message.

Extension may not be the first out of the starting block to deal with novel issues because of organizational design and the plan of work process, but over time, Extension should be as effective as any other agency. The flexibility of agents to utilize new program materials, work with local experts, and adapt programs to meet novel needs on a state-wide basis may make CES a more efficient agency over time.

## Acknowledgment

This research was supported by the Florida Agriculture Experiment Station and approved for publication as Journal series No. R-08706.

## References

- Butry, D. T., Mercer, D. E., Prestemon, J. P., Pye, J. M., & Holmes, T. P. (2001). What is the price of catastrophic wildfire? *Journal of Forestry*, 99 (11): 9-17.
- Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. NY: Wiley-Interscience.
- Endicott, E. (ed.) (1993). *Land conservation through public-private partnerships*. Washington D.C.: Island Press.
- Florida Research and Economic Database. Accessed February 4, 2002. Available at: <http://fred.labormarketinfo.com/>
- Ham, S. H., & Sewing, D. R. (1987-88). Barriers to environmental education, *Journal of Environmental Education*. 19(2):17-24.
- Hernandez, O. (2000). Thinking about behavior. In Day, B., & Monroe, M. C.. *Environmental education and communication for a sustainable world*. Washington DC: Academy for Educational Development.
- Jacobson, S. J., Monroe, M. C., & Marynowski, S. (2001). Fire at the wildland interface: the influence of experience and mass media on public knowledge, attitudes, and behavioral intentions. *Wildlife Society Bulletin*, 29(3):929-937.
- Marradi, A. (1981). Factor analysis as an aid in the formation and refinement of empirically useful concepts. In Jackson, D. J., & Borgatta, E.F. *Factor analysis and measurement in sociological research*. Beverly Hills, CA: Sage Publications.
- Nordlie, T. (2002). A+ in agronomy. *Impact*, University of Florida Institute of Food and Agricultural Sciences. 18(1): 22-24.
- Rocha, L., & Jacobson, S. K. (1998). Partnerships for conservation: protected areas and non-governmental organizations in Brazil. *Wildlife Society Bulletin*, 26(4):937-946.
- Woods, C. (2002a). Award-winning crop management program. *Impact*, University of Florida Institute of Food and Agricultural Sciences. 18(1):14-16.
- Woods, C. (2002b). Award-winning rapid response team. *Impact*, University of Florida Institute of

Food and Agricultural Sciences. 18(1):10-11.

Woods, C. (2002c). Florida's \$9 billion citrus powerhouse. *Impact*, University of Florida Institute of Food and Agricultural Sciences. 18(1):4-9.

Copyright © by *Extension Journal, Inc.* ISSN 1077-5315. Articles appearing in the Journal become the property of the Journal. Single copies of articles may be reproduced in electronic or print form for use in educational or training activities. Inclusion of articles in other publications, electronic sources, or systematic large-scale distribution may be done only with prior electronic or written permission of the Journal Editorial Office, [joe-ed@joe.org](mailto:joe-ed@joe.org).

If you have difficulties viewing or printing this page, please contact JOE Technical Support