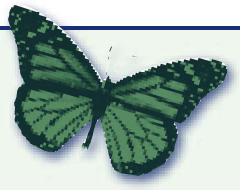
Keeping It Local:

Photo courtesy of Forest Service, Arapahoe-Roosevelt National Forest.

How Federal Wildfire Policy Is Implemented at the Local Level

Meet the Scientists

Ms. Stephanie Grayzeck-Souter, Social Scientist: My favorite science experience was spending a month in the tropical rainforest of Ecuador. I learned about tropical field biology while also exploring and experiencing cultures very different from my own. This picture was taken on the banks of the Napo River, a tributary of the Amazon.



Dr. Kristen Nelson, Environmental Sociologist: My favorite science experience was working with Mayan ('mī-ən) farmers and scientists to solve problems in Chiapas (chē-'ä-päs), Mexico. We worked on many different projects. In one community, we worked on projects with trees to reduce global warming. In other communities, we discovered how to provide good soil for growing coffee. We also discovered how to provide habitat for migratory birds. Migratory birds move from place to place for breeding or feeding. As you can see, there were many different problems to solve!

Thinking About Science

Social scientists study what people think, do, and believe. One way they discover this is to conduct interviews with the people about what they want to learn. Interviews are like conversations, except that the scientists try to guide the conversation so they find out specific information. They ask questions that can be well defined or that can be open-ended. A well-defined question might be: "How many brothers and sisters do you have?" An open-ended question asks something general. An example of an open-ended question is: "Tell me about the first time you fell off of your bicycle and got hurt."

The scientists try not to share any of their own opinions. In a good interview, the scientist rarely says much except to ask for more information. By interviewing different people using the same questions, scientists can learn about all the different ways in which people think about a topic.

Interviews are usually recorded. Later, while listening to the recording, the scientist types the interview, word for word. Then, the scientist organizes and summarizes what was said. Interviews can be done in person, over the phone, or even on the Internet. In this study, the scientists interviewed people in four towns in the Eastern United States.

▲

Dr. Pamela Jakes, Research Forester: My favorite science experience was living in New Zealand for 6 months. While I was there I worked with scientists to discover what people living in New Zealand can do to reduce their wildfire risks. What I learned in New Zealand has helped me work with communities in the United States so that they can adapt to living with wildfire. This is a photograph of me in New Zealand.

Dr. Daniel Williams, Research Social Scientist: My favorite science experience is getting paid to visit some of the most beautiful places on earth as part of fieldwork. This is a photograph of me backpacking in the Sierra Nevada Mountains. Photo by Mike Patterson.

▼

Thinking About the Environment

Some people live in or near large areas of forests. Often, people build homes near the edges of State or Federal **public land**. State lands include State parks and forests. Federal lands include national parks and national forests. When people build close to or within large areas of forest, they raise the chance of having their homes damaged or destroyed by wildfire. They also increase the chance that a fire will burn into the forest, as most forest fires in the East are started by people.

The Federal Government has defined communities that occupy land near or within these large natural areas as the wildland urban interface, or WUI. The WUI is an area where houses either meet or mix with wildland **vegetation**, including forests, prairies, or other natural areas. To help protect these communities from wildfires, the Federal Government has encouraged people living in the WUI to plan for wildfires. The Government wants people in these communities to think about ways to discourage wildfires and what they can do to protect their homes if a wildfire burns in their community.

Introduction

In the past, **forest managers** always put out wildfires. More recently, forest managers have discovered that fire can be a good thing for some **ecosystems**. Wildfires are now sometimes allowed to burn rather than always be put out. When a wildfire is threatening human communities, however, it is put out. Forest managers have added new strategies to help communities deal with wildfires.

The first strategy is to reduce fuel so if a wildfire threatens a community it has nothing to burn. Forest managers reduce fuels in two main ways. First, they might purposely burn small areas of land in a controlled manner to remove the fuel **(figure 1).** These fires burn cooler than wildfires, and only burn near the ground. Forest managers only start these controlled fires if the weather will help them manage the fire.

If a wildfire occurs in these areas, there is less material to burn, and the wildfire can be controlled or put out more easily. Forest managers may also use machines to cut and remove the brush and other vegetation **(figure 2).** Another strategy used to control the damage from wildfires is to help homeowners protect their home and property from fires. For example, people are urged to remove trees and other plants that burn easily that are touching their home.

In 2003, the Federal Government made it easier for WUI communities to protect themselves from wildfire (See "Thinking About the Environment"). If a WUI community prepares a Community Wildfire Protection Plan, the Federal Government will work with the community to reduce wildfires on everyone's property. In addition, in a Community Wildfire Protection Plan, local communities can have a say in how wildfires are managed on nearby public lands.

The Federal Government also urged WUI communities to describe their own WUI and draw boundaries that identify where their WUI is located. This area represents the land that the community values and wants to protect from wildfire.

If communities can agree on the definition and location of the WUI, they can more easily agree on the best way to reduce their risk from wildfires. Past research has shown that communities who do this are better prepared for wildfires. The WUI also shows public land managers where the community would like them to work to reduce wildfire risk.

Figure 1. A controlled fire. Photo by Terry Tompkins, courtesy of Forest Service Northern Region Archives.

Figure 2. Residents remove hazardous fuels during a Windcliff Work Day near Estes Park, Colorado. Photo by Bud Durya.

When the Federal Government passed the law to encourage communities to develop a Community Wildfire Protection Plan, they thought that communities would want to define and locate their WUI so they could show the area they wanted protected from wildfire. But many communities do not do this. The scientists wanted to learn about the communities that made the WUI part of their plan.

Figure 3. The four communities were located across the Eastern United States.

Reflection Section

- State what the scientists wanted to know in the form of a question.
- How do you think the scientists answered their question?

Methods

The scientists decided to do four case studies. A case study is a detailed examination of one example. Social scientists might study one individual, one group, or one event. The scientists identified four WUI communities in the Eastern United States **(figure 3).** They traveled to each of these communities and interviewed people. The people they interviewed were all involved in the preparation of a Community Wildfire Protection Plan. They included people working in fire departments and local governments, forest managers, and homeowners.

The scientists interviewed 58 people in the 4 communities **(figure 4).** They recorded each interview. Later, they typed each interview word for word. One of the scientists organized and summarized all of the interviews.

Community name	Number of people interviewed
Lake County, Minnesota	16
Barnes and Drummond, Wisconsin	13
High Knob, Virginia	18
Taylor, Florida	9

Figure 4. The number of people interviewed in each community.

Reflection Section

- A case study is a detailed look at one individual, one group, or one event. Think about something you have studied recently. How might you extend your examination by doing a case study? Who or what would you study?
- Why was it important for the scientists to interview a variety of people in the community?

Findings

Three of the four communities identified the WUI in their plan. These were the communities of Lake County, Minnesota; Barnes and Drummond, Wisconsin; and Taylor, Florida. Three things were most important to these communities as they identified their WUI **(figure 5).**

Although people understood the general definition of the WUI, each community defined the WUI that was important to them. In some communities, people working for Federal agencies helped the local people define their WUI. Federal workers did not have to be involved but, when they were, they were able to help people understand the risk of fire in their WUI. Federal workers also helped people understand what they could do to reduce that risk. Members of fire departments and other **professionals** also affected the way the WUI was identified and described.

Hazards	How much fuel is available to burn; how often wildfires occurred; how many fires were caused by humans; not enough planning by the community.
Values	What people feel is important to them; the value of their homes and other buildings; the importance of having forests for wood products.
Physical locations	Local fire departments; public land boundaries; distance from fire stations; the condition of the roads.

Figure 5. Things people considered as they described their own WUI.

The case studies showed that it is important to include local homeowners when describing the WUI. These people are familiar with the area and can help identify problems and opportunities. Also, when local people are involved in planning for an activity (like reducing the items that can burn close to their homes), they are more likely to do the activity.

The scientists discovered that when the local WUI is described as a part of the Community Wildfire Protection Plan, people with different opinions must come to an agreement. The description of the local WUI, therefore, is a community definition that everyone shares, and it helps local communities to better prepare for a possible wildfire.

Reflection Section

- Why do you think members of fire departments affected the way the WUI was defined and described?
- What was one benefit of having community members work together to define and describe their WUI?

Discussion

The Eastern United States is different from the Western United States in many ways. For one thing, most of the land in the East is privately owned, primarily by citizens and corporations. Another difference is that human communities are found almost everywhere. In addition, there is a lot of forested land in the East. Because of this, much of the land in the East can be considered as a kind of WUI. This makes it more challenging for communities in the East to identify the WUI as an area separate from everywhere else—the WUI is everywhere!

In spite of these challenges, there are advantages to defining and describing a local WUI. When communities get together and define and describe the local WUI, they come to an agreement about the hazards, values, and **resources** in the community. This helps them develop a better plan to protect the community from a possible wildfire. It also helps them work with public land managers to protect forests across the landscape.

Reflection Section

- Think about the large areas of undeveloped land in the Western United States. Do you think most of that land could be considered the WUI? Why or why not?
- Give another example of when getting together to discuss something resulted in a better plan of action.

Glossary

Ecosystem (**ē**-kō-**sis**-təm): Community of plant and animal species interacting with one another and with the nonliving environment.

Forest manager ('**fȯr**-əst '**ma**-ni-jər): Skilled individual who takes care of natural resources.

Professional (prə-'**fesh**-nəl): People that have specialized training in a particular area.

Public land (**pə**-blik '**land**): Land that is owned by the people as a whole; land that is taken care of for the good of all of the people.

Resource (**rē**-ˌsȯrs,): Something that takes care of a need.

Vegetation (ve-jə-'**tā**-shən): Plant life.

Accented syllables are in **bold.** Marks taken from Merriam-Webster Pronunciation Guide.

Adapted from Grayzeck-Souter, S. A.; Nelson, K.; Brummel, R.; Jakes, P.; and Williams, D. 2009. Interpreting federal policy at the local level: The wildland-urban interface concept in wildfire protection planning in the eastern United States. *International Journal of Wildland Fire.* 18: 278–289. http://www.treesearch.fs.fed.us/pubs/33049.

FACTivity

Time Needed

Three class periods

Materials

Paper, pencils

The question you will answer in this FACTivity is: What type of action plan can we create to help our school?

Procedure:

In this FACTivity, you will get together with other students and brainstorm a list of challenges or concerns at the school. These can be ongoing challenges or a challenge the school will meet in the future. For example, a challenge may be that so many parents drive their kids to school that the traffic gets backed up and kids are late to school. Another example is that students have to take standardized tests at the end of the year, and they must prepare throughout the year to pass these tests.

Once a list of challenges has been compiled, your teacher will divide you and the other students into pairs or small groups. These are the Action Plan Teams. An action plan is a plan that can be put into effect to help make the challenging situation easier for the school. In the article just read, community members created plans to help them in case of a wildfire.

Each group will create an action plan for one of the challenges identified during the class discussion.

The action plan should include the following elements (Note: your teacher may have more requirements):

1. Title of action plan
2. Names of action plan team members
3. One or two paragraph summary of the challenge and why it is a challenge for your school
4. Three to five steps that can be taken by students, teachers, administrators, and parents to help improve this challenging situation
5. A timeline for implementing your suggestions
6. One or two paragraphs on why using the action plan will help improve the situation and how the school community would benefit from this improvement

Once the plans have been written, you and the other students will present these plans to the class. After each presentation, discuss the plan and see if there are other ideas that can be added to the plan from other classmates.

Teachers:
If you are a PLT-trained educator, you may use Activity #35, "Loving It Too Much;" #36, "Pollution Search;" #37, "Talking Trash, Not!;" and #38, "Every Drop Counts," as additional resources.

FACTivity Extension

These plans can be submitted to the school administration and implemented.

National Science Education Standards addressed in the article:

Science as Inquiry:
Abilities To Do Scientific Inquiry;
Understandings About Scientific Inquiry

Science in Personal and Social Perspectives:
Personal Health;
Natural Hazards;
Risk and Hazards

Science and Technology:
Understandings About Science and Technology

History and Nature of Science:
Science as a Human Endeavor;
Nature of Science

Additional Web Resources

University of Wisconsin-Madison's Wildland-Urban Interface Maps and Statistics
http://silvis.forest.wisc.edu/library/WUILibrary.asp

Forest Service Wildfire Prevention and Wildland Urban Interface
http://www.fs.fed.us/r8/fireprevention/

Firewise Communities
http://www.firewise.org/