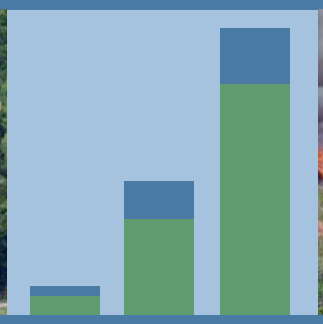
Wildland-Urban Interface:
Varied Definitions

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Introduction

The South has undergone rapid population growth over the last couple of decades, resulting in rapid land-use change and profound human influences on forested and other natural areas. As a result, the way that these natural areas can be managed is altered, and the goods and services they can provide are changed as well. These areas of rapid change are often referred to as the *wildland-urban interface* (WUI). The WUI is subject to many interpretations and various perspectives: the WUI means different things to different people. This fact sheet describes several common definitions of the WUI to assist natural resource professionals with new challenges and opportunities in the wildland-urban interface. Information about key interface issues can be found in the fact sheet titled *Wildland-Urban Interface: Key Issues* (http://www.interfacesouth.org/products/fact_sheets/wildland-urban-interface-fact-sheets/key-issues/index_html).

WUI Definitions

Geographical or Spatial Definition

The WUI is often defined from a spatial or geographical perspective. The *classic interface* is where urban sprawl presses up against public and private natural areas, bringing to mind a distinct line between urban and rural areas. (Hughes 1987). By contrast, the *intermix* is an areas undergoing a transition from agricultural and forest uses to urban land uses. As its name implies, this type of interface involves a mixing of rural and urban land uses in the same area (Figure 1). Still another type of interface, the *isolated interface*, is a remote area interspersed with structures such as summer and recreation homes, ranches, and farms, all surrounded by large areas of vegetation. And there are *interface islands* within predominantly urban areas. These are islands of undeveloped land, sometimes along river corridors, that are left as cities grow together and create remnant forests (Macie and Hermansen 2002).

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Figure 1. *The isolated interface is made up of structures interspersed in remote areas.*

Natural Resource Definition

In the publication, *Human Influences on Forest Ecosystems: The Southern Wildland-Urban Interface Assessment*, the interface is defined from a natural resource perspective as an area where increased human influence and land-use conversion are changing natural resource goods, services, and management techniques (Macie and Hermansen 2002). Under this definition, the interface is a set of conditions that affect resources and how they can be managed, rather than a geographic place.

Wildland Fire Definition

The interface is most commonly defined from a wildland fire perspective. Fire issues in the interface attract the public's attention and images of communities in flames on the outskirts of cities are often used to depict the interface (Figure 2). On an individual homeowner scale, the wildland-urban interface is an area where human-made infrastructure is in or adjacent to areas prone to wildfire. On a community scale, the interface is an area where conditions can make a community vulnerable to a wildfire disaster.

Sociopolitical Definition

As our population ages and becomes more ethnically and culturally diverse, the public's attitudes and values towards the use and management of natural resources may undergo a change (Hull and Stewart 2002). For example, amenities such as scenery, wildlife viewing, and privacy have become increasingly important while income-related values, such as timber, grazing, and hunting leases, have become less important to the public as a whole. This can create a sociopolitical interface, where there is the potential for conflict between people who hold different beliefs about how natural resources should be used or managed (Vaux 1982).

Where is the WUI?

Determining the extent of total land area in the WUI in the South is difficult due to the variety of definitions and the rapid land-use change occurring in this region and across the country. A team of scientists with the U.S. Forest Service and the University of Wisconsin, Madison addressed this problem by mapping the

Photo Credit: US Fish & Wildlife Service

Figure 2. *Images of communities in flames on the outskirts of cities are often used to depict the interface.*

Photo Credit: Larry Korhnak

wildland-urban interface for the entire country based on two components: a) human presence, measured by using data from the block-level housing unit counts from the decennial censuses; and b) wildland vegetation, assessed with the 1992/3 National Land Cover dataset. Two types of wildland-urban interface were defined: (1) intermix, areas where housing (more than one per 40 acres) intermingles with wildland (nonagricultural) vegetation and (2) interface, areas with housing and low-density vegetation within fire's reach (1.5 miles) of a large, contiguous block of wildland vegetation (Radeloff et al. 2004). For more detailed information about these definitions and the project in general, visit: http://silvis.forest.wisc.edu/projects/WUI_Main.asp.

Overall, 9.3 percent of the continental United States, more than 175 million acres, was classified as WUI (intermix and interface combined). Regional differences were considerable. The Rocky Mountain States had the least extent of WUI, and the northeastern and southeastern states had the most (Figure 3). Among the southern states, North Carolina had the highest percentage of its total land area classified as WUI, with 41 percent (12.8 million acres). The highest percentage in the West was Washington at 9 percent (3.7 million acres) (Figure 4).

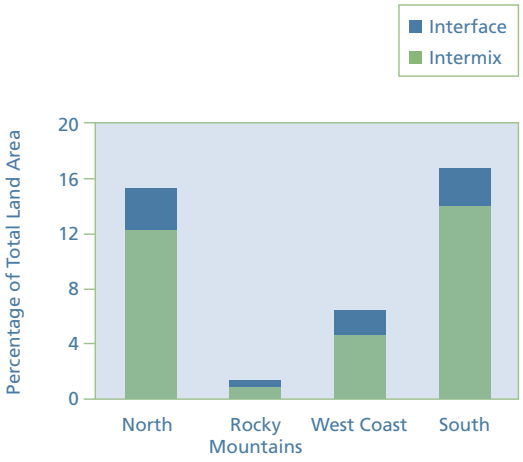

Figure 3. *Percentage of land area that is classified as wildland-urban interface in each of four regions of the continental U.S. Intermix areas are those where housing intermingles with wildland vegetation, and interface areas occur where housing is near a large contiguous block of wildland vegetation.*
(Adapted from Dwyer et al. 2003.)

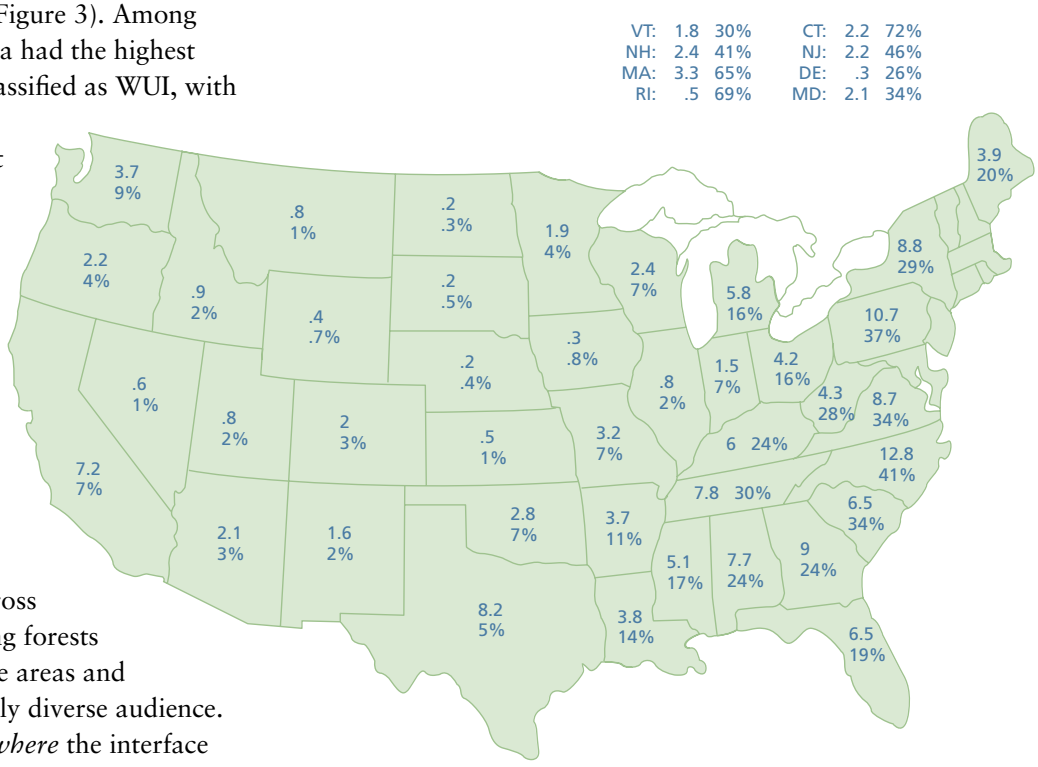

Figure 4. *Area of wildland-urban interface (million acres) and percentage of total land area, by state in 2000.*
(Adapted from Dwyer et al. 2003.)

Summary

However the interface is defined or mapped, it is clear that increased human influences are changing forest ecosystems and creating new challenges and opportunities for natural resource professionals and communities across the United States, such as managing forests and other natural areas in interface areas and communicating with an increasingly diverse audience. The most important factor is not *where* the interface is located but *how* increased human influences affect the ability of natural resource professionals to manage and conserve natural resources in the rapidly changing wildland-urban interface.

Adapted from "Wildland-Urban Interface Issues and Connections" by L. A. Hermansen-Báez. In: *Changing roles: wildland-urban interface professional development program*. Monroe, M. C., L.W. McDonell, and L. A. Hermansen-Báez, eds. 2006. Gainesville, Florida: University of Florida.

References

Dwyer, J.S., S. Stewart, V. Radeloff, R. Hammer, J. Fred, S. Holcomb, and J. McKeefry. 2003. Summary Statistics August 2003. In: *Mapping the wildland-urban interface and projecting its growth to 2030*. CD-ROM, U.S. Department of Agriculture, Forest Service, North Central Research Station, Evanston, Illinois.

Hughes, J.B. 1987. New Jersey, April 1963: Can it happen again? Fire Management Notes. 48(1): 3–6.

Hull, R.B. and S. I. Stewart. 2002. Social Consequences of Change. In: *Human influences on forest ecosystems: The Southern Wildland-Urban Interface Assessment*. Gen. Tech. Rep. SRS-55. Asheville, North Carolina: U.S. Department of Agriculture, Forest Service, Southern Research Station. 115–129.

Macie, E. A. and L. A. Hermansen, eds. 2002. *Human influences on forest ecosystems: the southern wildland-urban interface assessment*. Gen. Tech. Rep. SRS-55. Asheville, North Carolina: US Department of Agriculture, Forest Service, Southern Research Station. 159 p.

Radeloff, V. C., R. B. Hammer, S. I. Stewart, and J. F. Dwyer. 2004. *The 2000 wildland-urban interface in the U.S.: maps, statistics, and GIS data library*. Madison, Wisconsin: University of Wisconsin, SILVIS lab., http://silvis.forest.wisc.edu/projects/WUI_Main.asp (accessed May 18, 2007).

Vaux, H. J. 1982. Forestry's hotseat: the urban/forest interface. American Forests. 88(5): 36–46.

For more information

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Wildland-Urban Interface Fact Sheet Series

This fact sheet is available on the InterfaceSouth website at **http://www.interfacesouth.org/products/fact_sheets/wildland-urban-interface-fact-sheets/varied-definitions/index_html**.

For more information about interface issues and challenges, read additional fact sheets in the "Wildland-Urban Interface" series found on the InterfaceSouth Web site at: **www.interfacesouth.org/products/fact_sheets.html**

It can also be found on the University of Florida's EDIS website at: **http://edis.ifas.ufl.edu/FR287**