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The Moving Edge: Perspectives on the Southern Wildland- Urban Interface

Southern Wildland-Urban Interface Assessment Focus Group Report

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Abstract

To better understand the wildland-urban interface across the 13 Southern States and to identify issues to be covered in the USDA Forest Service report, "Human Influences on Forest Ecosystems: The Southern Wildland-Urban Interface Assessment," 12 focus groups were conducted in 6 of the Southern States in May and June 2000. The groups were guided through a series of questions that enabled them to describe the interface in their region, list the factors that are driving change, and the key issues associated with the interface. The groups also discussed the challenges and opportunities in the interface and what they need to do a better job.

Keywords: Air quality, focus groups, land use change, water quality, wildland fire, wildlife habitat, wildland-urban interface.

Background

As populations and urban growth expand in the Southern United States, forest environments are increasingly affected by human activities. In the wildland-urban interface, that area where homes or other structures are adjacent to or within forests and other rural settings, natural resource managers face critical challenges, such as wildfire prevention, control, and mitigation; watershed conservation and management; biodiversity management; and forest-resource management and conservation. These challenges have a direct impact on public safety, welfare, and quality of life. In a 1999 overview of the challenges facing the Southern Region (R8) and Southern Research Station (SRS) of the USDA Forest Service, former Forest Service Chief Mike Dombeck identified the wildland-urban interface as a top management priority.

The move to look closely at wildland-urban interface issues was catalyzed by catastrophic fires in the region and frustrations with fire management in interface areas. Most notably, a season of severe wildfires in Florida captured the public's attention. Fires keep ecosystems healthy, but when they happen near urban areas the protection and safety of humans and their properties, rather than ecosystems, take precedence. As cities and suburbs sprawl into rural areas across the South, fire is more likely to occur and more likely to damage economic, social, and ecological systems. Fire management is a challenge in every interface community but is not the only concern that has come to light.

Many resource managers, decisionmakers, and citizens are developing a new set of priorities for conserving and

managing forest land. Protecting wildlife habitat, improving water quality and air quality, and preserving the rural character of communities top the list.

To set the framework for working on wildland-urban interface issues in the South, the SRS, R8, and the Southern Group of State Foresters began conducting an assessment of the dynamic economic, social, and ecological conditions of the southern wildland-urban interface. They set their focus on identifying new tools, knowledge, and skills needed by natural resource managers as human habitation of forests becomes more common.

In May and June 2000, 12 focus group discussions were conducted in 6 of the Southern States to better understand the interface and identify issues for the assessment. The groups were selected to give a human voice to the perspectives of resource managers and many others who live and work in such areas. A facilitator guided the groups through a series of questions that enabled them to describe the wildland interface with which they were familiar, list the factors that are driving change, and explain key issues associated with the interface. The groups also discussed challenges and opportunities, as well as what they need to do a better job.

Focus group discussions were recorded on audiotape, by a notetaker, and by the meeting facilitator. The facilitator's reports of each discussion were found to be as accurate as the audiotape. In each State, answers to the questions and discussion of the challenges were analyzed for common themes. Six reports are attached (see appendix A). All reports were then analyzed for unique aspects and common themes, and are summarized in this paper. The voices of those who work and live in the wildland-urban interface describe perspectives and priorities that will help determine future priorities for research and technology exchange efforts.

Methodology

Qualitative research typically starts with a series of general, open-ended questions that engage the group and allow participants to explore a topic. Discussion occurs as people respond to each other and reach new understandings. A facilitator keeps the discussion on track. Transcripts of

group discussions are read, distilled, reorganized, and analyzed to identify emerging themes: issues that arose as a result of participant interactions.

While these group discussions followed this general pattern, several small differences led researchers toward a slightly different analysis process. The discussion groups were larger than expected, which caused the facilitator to require that people spoke in turn. The facilitator took notes on each item mentioned, and encouraged participants to provide additional comments. This practice discouraged exploration and in-depth discussion of any one theme. It is, therefore, problematic to differentiate strongly held opinions common to all participants in any one group, from comments that reflect the opinions of a few. Nevertheless, comments that were made repeatedly in most of the discussion groups were interpreted as common themes; topics that surfaced in only a few discussions may point to aspects of the wildland-urban interface that are unique to those areas.

The Participants

Before focus group participants were invited, local forest agency staff and others involved with wildland-urban interface management held a meeting in each State. A long list of potential participants was assembled based on the group's knowledge of people who could represent Federal, State, and local interests in natural resource management, industry, development, conservation, planning, and other relevant fields. The local representatives contacted potential participants to determine their interest and availability, and those expressing interest were invited to participate by letter and follow-up phone calls. Several State forestry agencies also sent out letters of invitation to the participants in their respective States. In all, a total of 173 participants in 12 discussion groups represented the following perspectives:

Representation from	No. participants
Wildlife, Parks/Rec, Natural Resources Conservation Service (NRCS), Coastal Agencies	21
Forest Agencies and Forest Health	20
Transportation and Planners	16
Extension, Education, Research, Media	15
Urban Foresters and Landscape Architects	15
Forest Industry and Consulting Foresters	14
Environmental nongovernmental organization (NGOs) and Land Trusts	14
Developers and Realtors	13
Fire and Emergency Management Agencies	12
Air, Water, Waste Agencies	10
Landowners, Small Business Owners	10
Elected Government Officials	7
Insurance and Power Utilities	6

The Questions

The facilitator began each session by thanking the local sponsors, explaining the purpose of the discussion, establishing ground rules for interaction, and describing his role as facilitator and note taker. The first question helped group members establish a common language to describe their wildland-urban interface. Subsequent questions generated long lists of information and reactions about interface issues.

1. Pretend you are a tour guide and describe the wildland-urban interface for me. What would I see, hear, and smell?
2. Describe factors that drive change in the interface areas you have just described.
3. What are the key issues in the interface? What are specific challenges you meet when attempting to manage resources in the changing wildland-urban interface?
4. How do you cope with those challenges? What tools, information, options, and other resources do you use?
5. What information, tools, management options, policies, and other resources do you need to deal with such challenges?
6. What topics would you recommend for research efforts to help you work in the interface region?

The responses were recorded in a nonduplicative list on a flipchart as the participants made their comments. Participants were given four paper dots to attach to the flipcharts, indicating which of the issues listed in Question 3 were their priorities.

Common Dimensions to Interface Issues

Across the South, States have experienced a boom in land development. A growth economy and an increasing wealth of city dwellers enabled people to move farther from urban centers, commuting to work or telecommuting. Focus group participants also mentioned that cheap gas (at the time) supported more people moving to the interface. Crime, pollution, crowding, and declining schools encourage those with the ability to move to do so. Many are attracted to the rural life, the natural world, more affordable land prices, and a lifestyle that may help them realize their dreams. Estate-tax law was mentioned as one cause of increased land availability: it was thought that as elderly farm and forest owners leave their property to children, a substantial estate tax would force the sale and subdivision of land. In many discussions, many expressed the thought that increasing land

values would compel owners to sell in order to avoid the burden of property taxes. Where there are willing sellers and willing home buyers, developers step in. Particularly distressing to participants was the lack of economically feasible alternatives to subdividing and thereby fragmenting the land base. Many participants were frustrated with the ethical dilemma of providing for a growing population while responsibly protecting the resources.

Participants also readily agreed that the natural features of their region are attractive and valuable—the secondary forests, agricultural areas, trout streams, reservoirs, and recreation areas. Beauty and rural character are attributes that many people cherish and fear will be lost if appropriate measures are not taken to protect key features.

Some focus-group discussions were held near the large cities of Houston; Birmingham; Washington, DC; and Biloxi. Participants there commented more about problems with roads, traffic, and poorly planned transportation corridors that drive development. The pace of urban sprawl is bringing to the rural landscape the noise, pollution, and conflicts many people thought they were escaping.

Other discussions were held in rural areas that are beginning to feel the pinch of population increases, but without the rapid changes associated with the urban fringe (Deland, FL, and Helen, GA). Participants there spoke more about a fragmented landscape that makes it more challenging to manage forests and agricultural lands, as well as of increased conflicts between newcomers and those managing the land. Those representing agriculture and forest industries pointed to a decline in business, which they perceive as a harbinger of more land sales. They commented that the lack of nearby markets for forest products and the increasing importance of forests in the South to satisfy national demands have put southern timber producers in an unusual bind. They spoke of an increasing pressure to supply forest products while, at the same time, having less land available on which to grow trees.

Both groups commented that the lack of infrastructure in these developing lands (e.g., garbage, sewers, and water systems) has a significant impact on natural resources as the population increases.

The result of an increased human presence in the interface has been a dramatic change in ecosystems and the individual natural resources. Participants in every discussion group mentioned changes in air quality, wildlife habitat, water quality, water quantity, species composition, soil quality, and pollution levels. Most mentioned increasingly hazardous

fuel loads and the threat of wildfire. Focus groups in two States cited an increasing level of illegal activity. Fragmentation makes it even more challenging to manage our natural resources using traditional tools.

Some participants identified increased development in terms of advantages: increased opportunities, beautiful home sites, and more affordable housing for a growing population. Some said that nice people are moving to the interface; and, in some cases, these newcomers are taking a more active role in decisionmaking. Others see some interface issues as a two-edged sword. The agricultural community that attracts newcomers also may produce the stench of chicken manure; the reservoir that flooded a forest valley 20 years ago now is a site for expensive homes along its shores. Change is difficult for people to accept and tolerate. One participant mused that the real problem is that he remembers all too well the way it was before.

For the most part, however, the juxtaposition of development and wildlands was seen as a land-use problem. In Virginia, where communities value their historic rural character, development was cited as a problem because it threatened cultural uniqueness. Participants in all groups spoke of a need for smart-growth initiatives and planned communities that protect habitat and stream corridors while providing housing for people. In Georgia, as well as several other States, the crises of development in the interface have brought people together to resolve some of the problems.

People in every focus group complained that a lack of vision, leadership, planning, and regional coordination for comprehensive growth management are major factors that create interface problems. In some States, participants thought that local governments should have constitutional authority to manage growth; in others they preferred a regional approach or centralized planning agency. Poor planning does not foster creative solutions, enforceable regulations, leaders who can inspire change, or agencies that work together. In Texas this deficiency was attributed to a culture of no government interference and an independent attitude of the population. Participants there also identified government fragmentation as an obstacle to good coordination for addressing complex, interdisciplinary problems.

Although some thought responsibility for appropriate regional planning processes belongs with the municipalities and State leadership, they also said that this responsibility belongs to the people. Participants in nearly every group expressed frustration with the inability of the population (both urban and interface) to grasp the depth of issues,

understand basic ecosystem function, value natural resources, and support necessary changes. Many group members suggested that newcomers are not connected to the land; that newcomers who thought they were being environmentally responsible often were not. They cited as evidence the use of exotic landscape plants, opposition to deer hunting, and complaints about wildland fire smoke.

In every State where focus groups convened, participants noted conflicts between rural and urban attitudes about managing the land, as well as different expectations for the provision of services. Newcomers to the interface expect the comforts and convenience they left in the city or the suburbs, without regard for how those expectations ultimately change the rural landscape. Attitudes about private property are seen as an important source of conflict and one roadblock to municipal planning. One participant said that interface newcomers do not know what it means to be responsible landowners. Others observed that while attitudes about property rights make it hard for public agencies to work on private land, those attitudes also might prevent or discourage appropriate management of public lands.

Less Common Themes in the Interface

Focus-group participants in several States perceived the lack of public land and the inability to purchase valuable wildland with public funds as a significant problem in efforts to manage the interface. In order to retain ecosystem services, resource managers must persuade private landowners to manage their property for the common good. In some cases this is possible, but often a misunderstanding of ecosystem functions is a barrier. In some of the States, participants addressed the lack of space for recreation or the expectation that recreation can occur on private lands as problems. In one case, a participant cited liability issues as a particular problem when allowing public recreation on private lands.

The focus group participants in Texas, Georgia, Mississippi, and Alabama described wildland fire as a critical natural resource issue. Resource managers noted the accumulation of hazardous fuel loads because land managers often are not able to use prescribed burning to mitigate the hazard. In Florida, however, wildland fire pervaded nearly every element of the discussions. In Florida's interface, fire is the root concern for rural homeowners on narrow inaccessible roads, as well as human safety in unmanaged landscapes, insurance reimbursements, and liability issues.

Some participants noted that geography is a key component in shaping the interface. Over the relatively flat Texas landscape, for example, it is hard to see sprawl. Coastlines and mountains constrain growth in one direction and cause it to bulge elsewhere. Coastal communities must be capable of responding to hurricanes by providing evacuation routes to accommodate a burgeoning population. Sufficient roads for the current population, of course, bring even more people to the region.

There are other differences across the South. In Mississippi, the interface is dominated by mobile homes, which are not as carefully regulated as permanent homes. In Georgia, the interface is within a 2-hour drive of Atlanta and sustains enormous pressure from the city. Whether as weekend tourists, summer visitors, commuters, or decisionmakers, so-called newcomers are changing the interface to a much greater extent than long-term residents.

In several States, participants spoke at length about policies, agencies, and regulations peculiar to their area. In Texas, Municipal Utility Districts (MUDs) are created to provide services to new development. A proliferation of MUDs has created a situation where there is little incentive to coordinate planning efforts. Residents feel their government is fragmented into overlapping jurisdictions without regard for the landscape. In Virginia a law known as the Dillon rule limits local government authority to whatever is granted by the State. Local governments, therefore, do not have the ability to regulate or control growth, even if they have the political will to do so. Recent government reorganization abolished the Virginia Department of Natural Resources in Loudoun County, leaving residents feeling that no one was helping to coordinate and protect the resources. Similarly, in Alabama the lack of home rule means local government cannot regulate growth. The State has granted this ability to several counties on an experimental basis.

In two focus groups, participants observed that the groups' ethnic mix did not adequately represent the current population, and did an even poorer job of anticipating future demographics. In Texas, Latino and African-American preferences for recreation and natural resource management seem not to be recognized in the planning process; participants challenged all agencies to increase efforts to work with disenfranchised populations.

After listing the local interface issues, each participant indicated four personal priority issues by placing paper dots on the flipchart paper. A composite of both groups from each State is reported in appendix B.

Challenges and Opportunities: Wants and Needs

Participants were asked to comment on the challenges of working in the interface and on the opportunities they have had for improving their situations. Although many of the challenges listed were restatements of key issues and factors from earlier questions, participants here had an opportunity to frame their frustration as a challenge and think about what would improve their environment.

Ultimately, participants spoke of a need to manage limited resources that are being damaged, fragmented, and removed by development. The exponential growth of populations can bring too-rapid change, which may preclude a rural community's ability to effect timely responses. In addition, few States have the monetary or human resources to address such problems.

Some participants suggested that natural resources might better be maintained by incorporating resource protection into development guidelines, or by improving coordination among governing jurisdictions. The lack of a clear vision, reactive rather than creative planning, unenforced zoning regulations, and weak leadership were common challenges. Transportation planning and fire protection are two issues that drive development and planning in some areas.

Participants said that many interface challenges are complicated by poor communication with a public that may just not understand the issues. They often suggested that newcomers need to be educated better to respond to those challenges. Public involvement in resource planning is needed but would require an appropriate communications framework. Strong positions on private property rights, resistance to change, apathy, "not in my backyard" attitudes, consumerism, expectations for an improved quality of life, expectations that the government will fix problems, and a general disconnect from the land further complicate the challenges. No participant suggested appropriate ways to deal with pervasive challenges of various perspectives.

In this phase of focus-group discussion, participants were asked to list the resources they use in their work within the interface. A complete list of these resources is in appendix C. Many resources were common from State to State; most listed State and Federal agencies, nonprofit organizations, and professional groups. Several participants mentioned unique resources that they found helpful, such as particular organizations, funding opportunities, or local experts.

A discussion of what is needed to work more effectively on interface issues was framed in terms of major challenges and most-pressing needs. A complete list of those needs is in appendix D.

Meeting Challenges

Participants listed a variety of things that would help them meet challenges of their work in the interface, all of which were categorized into four groups.

1. Information and data are needed, including maps, inventories, and technological tools, for better planning and natural resource management.
2. Tax codes must be changed to help keep large tracts of private land in appropriate agricultural or resource management uses; tax credits should be used to provide incentives for people to use sound practices. Taxes might also be modified so everyone helps pay for the environmental services they receive.
3. Public education will be vitally important as agencies try to change specific behaviors in residential landscaping, for example. Participants in every State mentioned the importance of improved general education about natural resource issues. Target audiences might include young people, landowners, professionals, and local leaders. Participants in two States mentioned the need to change attitudes by designing appropriate educational programs.
4. Better interagency communication, planning, regulations, enforcement, and public policy were common in the listings. A clear plan for managing growth by establishing enforceable regulations and incentives was commonly suggested. The participants explained that this type of planning and management goes hand-in-hand with political change, agency cooperation, better leadership, more public support, and better government.

Research Needs

Participants also were asked to comment on specific research needs that would help them meet interface challenges and make more well-informed decisions on the job. Naturally, many cited research specific to their area of interest or to their individual job responsibilities. Nonetheless, five basic categories of needed research emerged. A complete list of all identified research needs is provided in appendix E. These findings may be useful in

designing future research and technology transfer projects in the wildland-urban interface.

1. Focus-group participants in every State requested more readily available and applicable research findings—that is better access to research information. Specific requests were for (1) more data on case studies, lessons learned, and examples of how other communities have dealt with interface challenges and (2) an up-to-date compilation of relevant research. Clearly, people are feeling isolated; yet they know their concerns are not unique. There is a great need for coordinating information dissemination within and among communities.
2. Participants throughout the South indicated that more information would help them make sound decisions. They spoke of needing more and better maps, especially those indicating soil types and flood plain boundaries, as well as detailed maps that use geographic information system data. Most were seeking a better understanding of their natural environment and suggested that natural resource inventories would help provide data to support and aid in the decisionmaking processes.
3. Many requested assistance in working with interface residents through outreach programs. They spoke of a need to study the attitudes and beliefs of residents, as well as their perceptions of natural resource management, and to know the best ways to increase public understanding of interface issues. Participants wanted to improve both educational and communication programs.
4. Focus-group participants in nearly every State asked for economic studies that quantify the monetary values of natural resources and estimate the cost of degrading the resources. They also wanted to know the actual costs of growth and development and to see comparisons of different growth scenarios.
5. The last broad category focused on the challenges of simultaneously managing growth and natural resources in the same space. More specifically, participants requested research about ways to develop lands in an

environmentally sensitive manner to resolve or prevent problems associated with transportation, storm water, and wastewater management. They asked for more information about the appropriate extent of growth: projections of where growth will happen, explanations of how growth occurs, documentation of ecosystem change, and improved understanding of how growth can be managed. Finally, participants sought answers to important questions about how best to manage natural resources in interface areas, considering such matters as fire management, tools for managing fragmented forests, climate change, natural systems, exotic species control, and water quality issues.

Summary

The challenge of managing growth while protecting natural resources is not new or surprising, but the depth of frustration expressed by many participants was startling. This frustration seemed based in the perception that politically acceptable and implementable solutions are not available. Traditional natural resource management tools do not seem to be effective in the fragmented wildland-urban interface; the ability to manage larger tracts seems short-lived. Planning, zoning, policies, and political leadership appear to be ineffective; and economic incentives all point towards more growth and sprawl. A significant segment of society, those who often become champions of change, appears to be apathetic, unaware of environmental problems, or supportive of sprawl for increased convenience. Many expressed the need to better understand resource problems they face, to work with cooperative agencies and communicate among themselves, to promote conservation behaviors and play a role in developing effective policies, to work with visionary leaders, and to change the course of their future.

Appendix A: Individual State Reports¹

Overview

In spring 2000, the USDA Forest Service held two focus groups in each of six States. The summaries that follow present a record of the focus-group discussions. Local partners helped coordinate the focus groups and provided suitable facilities. Participants from local, State, and Federal Government agencies and organizations participated. Discussions were recorded in three ways: by audiotape (in all States but Alabama), flipchart lists, and notetaker. All conversations followed a similar format, and a facilitator asked the same set of questions.

Each discussion began with participants offering definitions of the wildland-urban interface as they perceived it, factors driving change in such areas, and key issues they face. After a short break, participants resumed discussion of the challenges and opportunities they have met and listed specific materials, information, and research they felt would help them meet those challenges and seize the opportunities.

Two nonparticipating researchers reviewed all focus-group records in July and August 2000. Audiotapes (where available) were used to confirm the accuracy of the facilitators' reports, to understand emotional undertones of conversation, and capture salient quotes. When they found the facilitator's report to be very accurate, the researchers identified general themes of the discussions. Where relevant, we have provided a sampling of participant comments.

Alabama Focus Group Summary

May 11, 2000
Botanical Gardens in Birmingham, AL

Describing the Interface

Alabama's interface has abundant natural resources. The relatively small human population has been concentrated in the industrial, northern section of the State, leaving the reforested hills, coastal plain, streamsides, and river basins sparsely populated. Participants expressed the belief that Alabamians' quality of life is improved by geographical variation, rich biodiversity, and the significant recreational value of these lands.

A growing economy and availability of land, however, are inviting considerable development in rural areas, particularly along roads, rivers, and lakes. The developing interface is plagued by common problems—trash, invasive vegetation (kudzu), houses on ridges and hillsides, prime agricultural land converted to development, clearcutting for chip mills, conflicts between and among landowners, and an increased incidence of illegal activities.

Factors Driving Change

Two broad categories generated many comments about factors that create change in the interface: (1) people are not involved and (2) local governments have no vision or plan.

Alabama participants indicated that public involvement is limited by a lack of education about natural resources, the environment, and land stewardship. A not-in-my-backyard attitude about private property is prevalent, yet participants assigned no value to protecting open space. The Alabama experience seemed to be that while people are not involved in public meetings to discuss management plans or regulations, new regulation is almost always met with negative reactions.

Many said that local governments are hampered by a lack of authority; there is no home rule, and there are no Statewide controls or regulations on development. There is a lack of consistent public policy—people just react to what is happening; and there is no new vision to guide development. Monitoring and enforcement have not been effective. Many said that local governments want growth for tax advantages. They put in sewer and water lines, and development follows. Fifty percent of housing starts, however, are mobile homes, which are exempt from most regulation.

Participants said that in the absence of guidance and regulation, people are fleeing urban communities to live in rural areas where they expect to find a more desirable quality of life, more recreation, and less crime and congestion. Although the population is growing at a substantial rate, proportionally the interface is growing much faster. Participants believed that others think it is better to develop interface land than to redevelop industrial areas.

Participants also said that low property taxes and positive economic reports encourage people to move to affordable housing in rural areas. They suggested that estate taxes

¹ State reports contain approximate accounts of focus-group discussions.

encourage inheritors to subdivide. Nonetheless, there still is a demand for timber in the South, and lush landscapes make it easy for people to do anything they choose with the land. Generally, their opinion seemed to be: “It can always grow back.”

Key Issues

The focus groups identified several key interface issues. Most agreed that environmental degradation, lack of a comprehensive vision or plan, and lack of publicly owned land for recreation, as well as wildland-fire management, education, and people’s perceptions, are major issues.

Alabama participants said that environmental degradation includes diminished water quality and quantity, flooding and erosion, wildlife habitat, nuisance wildlife, air quality, population pressures on the environment, and the loss of forest and farmland. Three significant needs were identified: (1) recreation opportunities on public lands, (2) public education about the role of fire in maintaining healthy ecosystems—both the control of wildfire and the use of prescribed fire as a management tool, and (3) the need to protect and sustain the basis for a viable forest products industry, which contributes significantly to Alabama’s economy.

Another side of the identified issues has a human face. Some Alabama participants mentioned resource planning, leadership, vision, and politics, as well as education, perceptions, assumptions, and values as important. They were particularly concerned about the lack of vision and leadership, the need for patterns of sustainable development, the lack of education, the lack of comprehensive planning, and a number of political issues associated with the interface. In terms of values and perceptions, these participants reported facing challenges regarding the expectation of services in rural areas, assumptions about growth, conflict between new and old residents, respect for the rights of property owners, and perceptions that the forest industry and natural resource agencies limit what they can do.

Challenges and Opportunities

Challenges and opportunities for managing the interface in Alabama parallel these concerns. Participants said that agencies are trying to manage growth with few resources, to balance the benefits and costs of change, and resolve conflicting regulations while protecting natural resources, incorporating green space into development, and involving resource managers in land-use decision making.

Participants said they are eager for leaders strong enough to address these challenges; technology to facilitate clean industry, communication, and e-commerce; funding for staff and resources to provide services and meet needs; and information. They said that information from research, forecasts and predictions, and databases would be helpful, as would conveying such information to decisionmakers, the media, new employees, and the general public. However, many cited challenges common to citizens and government officials alike: resistance to new ideas and regulations, underinvesting in visionary thinking and education, failure to empower people to bring about change, failure to engage the public in decisionmaking, and missed opportunities to work with new landowners.

Strategies and Research Needs

At the county level, participants said that variation in government practices means that Jefferson, Shelby, and Baldwin Counties may have some potential solutions that others will be able to use when the legislature grants them the same authority. The small size of county government allows everyone to know everyone else, and encourages people to seek assistance from each other.

Participants spoke of geographic inventory system technologies, the Internet, the media, and other improved communications devices as important new tools. They also identified as helpful the differential property tax, as well as policies that deny access to certain lands.

At the State level, participants cited landowner associations and the Alabama Forestry Commission as helpful resources. The universities and extension system provide information and resources; the corporate sector provides legal advice and publishes a newsletter titled *Inside Alabama Politics*.

In addition, specific programs are helping to address interface challenges in the State: *Peaks of Excellence* at Auburn University, and *Your Town Alabama*, a training program for local leaders; the Forestry Planning Committee and the Jefferson-Shelby Urban-Wildland Interface Advisory Board provide a forum for exchanging ideas and resources. *Forever Wild* and *Forest Legacy* are State land-acquisition programs. The *TREASURE Forests* program encourages multiple use and stewardship, and the *Teachers Workshop on Conservation* provides good information to educators.

Participants concluded that people are an important resource. Those now moving into the interface are generally younger and more willing to be involved. Cooperation in the rural counties can be a valuable asset.

Strategies and Research Needs

When given a chance to express their dreams and desires, Alabama participants listed an enormous variety of broad goals, as well as specific requests. They spoke of a desire for less litigation and liability indemnification for recreation easements; less bureaucracy and authority in local government; more and better-informed leaders; stricter enforcement of regulations and stiffer fines and penalties for illegal dumping; incentives such as tax abatements for protection of land; estate tax reform; and pro-environment programs that encourage communities to become less dependent on automobiles, protect natural resources, and improve infrastructure. Their broader goals included comprehensive planning towards a common vision; larger research programs; better marketing of good ideas; financial support to improve education; and improved educational programs that address business, environment, and public issues.

Participants also offered other ideas such as research of new technologies, new uses for timber, and new ways to deal with wastes. Some spoke of transportation planning, a better inventory of local flora and fauna, and better access to recreation on public and private lands. They are asking for research that explores ways people interact with the environment, what they want in their environment, and how environments can be developed in concert with their needs. They spoke of urgent needs in the area of economics—resource values over the long term, cost-benefit comparisons of other patterns of development, and the true costs of development and changes in estate tax. They asked for case studies of ways that others have coped with interface challenges, what has worked in other places, and earlier research studies that may be useful. They said that additional oversight is also needed so that research findings are efficiently disseminated, research is not duplicated, and the effectiveness of a variety of programs is sufficiently tested.

Summary

Generally, Alabamians seemed not to perceive an immediate crisis, although many believe that one is imminent. Few cited current policies that would prevent such a crisis. As in other States, participants in Alabama mentioned the challenges of improved public education and political involvement. However, the groups did not emphasize education as a solution, but rather suggested that better leaders, policies, and technologies will provide the answers.

Florida Focus Group Summary

June 27, 2000

Farm Bureau office in DeLand, FL (Volusia County)

Describing the Interface

Florida participants described their images of the interface by talking about beaches, forests, and salt marshes. A few referred to sights and sounds associated with people, such as the noise of airboats or the smell of barbeque. Many of the images and descriptions reflected a positive experience, although some offered negative descriptions.

- *There's lots of forested, undeveloped land.*
- *I'm going to take you to a specific place. You'll be on a bicycle, riding along the Dixie Highway Loop, which is in the northeast section of Volusia County. You'll go through Tomoka State Park where you'll see the preservation of land through purchase by public agencies. You'll enter a salt marsh and then hardwood hammocks and wetlands where you might be surprised that there are trees other than palm trees in Florida. And then when you're just about at the most beautiful place, you'll see a manicured golf course between the trees and you hear voices saying things like 'Fore' and 'Boy, I hate the Volusia County Council, they haven't cleared up my drainage canal' and that epitomizes what happens when you have a beautiful area that you haven't been able to preserve.*

Many Floridians talked about the many newcomers to their State, the resulting development, and the development's effects on the land. Most were referring to housing in new subdivisions, and almost all commented about how quickly new construction appears.

- *I would take you on a plane ride and we would look at all the new subdivisions being built and new roads being built and then we would hover over the State line and count all the new people coming in.*
- *Development is moving fast.*
- *I've only been here for a little over 2 years, and the growth of new construction out in the country is just unprecedented. It seems like every woodlot is for sale and everybody's looking for that piece of property that's close to public property.*

An overriding concern was that there is little or no planning. Participants spoke of a visionless future, and no one was

very clear about who is responsible. A majority complained that current development is not well planned or regulated.

- *No one has a vision for the future. There is fragmentation of everything.*

Generally, people said that increased development and a lack of planning are leading to natural resource degradation. The facilitator's record mentions several times a perceived misuse of forests. More people means increased demand on forest resources. The groups recognized that those who alter the landscape sometimes do not realize the effects of their actions.

- *The forests are declining due to urban sprawl.*
- *I would have you observe the transportation and utility corridors that are fragmenting the forest habitat.*
- *The proximity of population to the forests allows for inappropriate uses or level of uses like ATV, poaching, dumping, and growing pot.*
- *I would like to show you the Apalachicola River and all the pollutants going into that river from Alabama, Georgia, and this tri-State area. They are destroying one of the most fertile estuaries in the world.*

Participants vehemently discussed the overwhelming amount of vegetative fuels, the threat of destructive wildfires, and the need for more prescribed fire. However, development within the interface area has made accessibility problematic. People are building homes in areas at high risk for fire, where egress and ingress in emergency situations can be very limited.

- *In this area you will smell smoke from wildfire or prescribed fire. This area is prone to burning.*
- *Every bit of natural vegetation out here may appear very green but it's flammable sometime during the year.*

A few participants talked about the extent and influence of agriculture in the area, and how industry is threatened by natural forces, as well as development.

- *You need to be aware of how much agriculture is alive in this county and in the whole State. Agriculture is the most important industry today. I'd have to show you all the different types of agriculture. We provide you with food to eat and air to breathe.*
- *So much of the change of the land use that we're seeing today from very traditional sources is due to climatological changes in our weather in the last 10 to 20*

years. Freezes decimated much of the citrus, which made it impractical to grow anymore, so the land becomes developed. The recent lack of rain is also having a dramatic effect on our farms. It's getting tougher and tougher to raise your own hay to feed your own cattle.

Degradation of the land and declining agriculture, along with balancing development with conservation, were key concerns of Florida participants. Most wanted to see wildland areas and wildlife habitat protected, buffered, and preserved.

In describing the interface, participants discussed issues in human terms. They believed newcomers have different attitudes and values. They believed that newcomers expect the services they took for granted in urban areas. Generally, participants felt that the public is uninformed about environmental issues, particularly prescribed fire and wildfire, which has caused conflicts among people and between people and the natural resources.

- *Most of our interface is used by people moving into the State rather than people from the area.*
- *People are concerned about their private property rights.*
- *The inhabitants of areas surrounding the forests are not willing to allow silviculture practices to occur in those forests adjacent to their property.*

Factors Driving Change

For most Floridian participants, the underlying cause of change in the interface is population increase; more and more people are moving in for a variety of reasons. The availability of cheap land is a primary incentive, as well as a lower cost of living. Once people move into the area, they also find it cheaper to live there due to the lack of State income tax and other economic factors. The area probably is relatively crime-free, provides recreation opportunities, has plenty of water (apparently), offers a pleasant climate, and allows people to return to nature.

- *Seven hundred people a week are moving into Florida.*
- *People come because of the lack of State income tax, cheap land, homestead exemption, low ad valorem, bankruptcy laws, and other economic factors.*
- *The cost of living here is relatively inexpensive compared to other places. That's the Florida lifestyle.*

Participants noted that management and planning have not kept pace with population growth. Development is occurring

in sensitive areas and there is no viable growth management policy. They expressed particular concern over management of buffers and wildlife corridors.

- *The intention of creating small buffers or wildlife corridors through these subdivisions that may be large enough for some animals and birds is well intended but these areas are of a size and scale that's not manageable from a [hazardous vegetative] fuel standpoint. The developers or the planners don't really understand what they've created by permitting these patches.*

Many participants addressed wildland-fire issues.

Ecosystems in the area depend on fire; and more and more fuels are building up. Use of prescribed fire is limited, in part, by the threat of lawsuits.

- *The ecosystems we have here are dependent on fire. Saw palmetto and gallberry not only burn, but they're extremely volatile. If you don't control the density and the fuel loads with prescribed fire, when they do burn, we are not going to stop them.*
- *I think one of the reasons that you're seeing wildfire is a direct result of the litigiousness of society. If a private landowner is out doing a controlled burn and somebody down the road has an accident regardless of whether or not smoke actually caused the problem, there's going to be a lawsuit. That stops controlled burning.*

Many participants felt that changes in the interface are a product of people's attitudes. They suggested that greed and other economic incentives often override the interests of natural systems; that people demand a right to do what they want on their land. Participants believed a general ignorance among the public about their local environment is to blame.

- *A lot of the problem is the preferred lifestyle—the ranchette, the large lot, and the attitude of 'I don't want to be able to see my neighbor.' Subdivision design is very low-density.*
- *It's the James Watt philosophy—It's all going to end soon, so let's get what we can while the getting is good.*
- *The problem is our cowboy mentality. It's not just 5 acres, it's my 5 acres and I'll do whatever the hell I want anytime, and that goes for any public space, too.*

Key Issues

Wildland fire, private property rights, and education were some of the issues mentioned, but the main issue

participants discussed was growth management—how to use zoning and planning to deal with an increasing population. Participants expressed the need to have more funded regulation and to provide incentives for responsible land management. A clarification and coordination of the agencies involved in managing the land could lead to more effective activity.

- *A lot of these ills could be addressed with some effective growth management. To be effective, growth management must be implemented at the local level. Local governments are the ones who make the land-use decisions and issue development permits. Growth management is more than just land-use regulations. There's a place for land acquisition, either as fee-simple or conservation easements. The water management districts actually have done quite a bit more than the Lochloosa purchase we talked about. Suwannee River Water Management District has an acquisition plan to do about 400,000 acres of conservation easements; so far they've done about 100,000 acres of easements. So that's one component of growth management. There's also the issue of where we put our infrastructure and how we pay for it. We can do a lot as far as guiding land uses with the placement of infrastructure and how we pay for it. There have been several studies done throughout the State that show that agricultural lands pay more in ad valorem taxes that these areas receive back in services. Agricultural land is actually subsidizing the suburban areas. The suburban areas put a dollar in, and they get a dollar and a half back in services. Agricultural areas put a dollar in and you're lucky if you get twenty cents back in services. I say growth management is more than just land use.*

Because people live throughout the interface, fire is a critical issue. Many participants commented about particular aspects of this issue, such as accessibility to homes during wildfire, increased fuel loading and the need for more prescribed fire, relief from litigation, and a desire for the Federal Government to compensate for timber losses from fire the same as for losses of agricultural products.

Participants not only talked about management of developed lands, but also management of forest and agricultural lands. Many felt that some lands are being managed inadequately, while others simply are not being managed at all. Nonetheless, private property rights must be respected, leaving the participants cognizant of the quandary.

- *We must provide incentives to private landowners not to develop.*
- *There are inadequate funds for land management.*

- *There are a couple hundred thousand individual, private landowners out there and I think a lot of the issue involves the property rights of those individuals.*

Participants agreed that many things are contributing to a decline in natural resources. Lack of management and poor management has meant poor water quality, stormwater problems, and loss of wildlife habitat. There is more and more conflict among competing uses of land.

Participants showed strong support for education—that the public be educated about the natural environment and how natural systems work.

- *There's not enough quality education for the people who live in the interface. You need to make these people realize that what we need to do is control fuel loads to preserve an ecosystem and to enhance wildlife habitat. We have to do it with fire and they have to realize that.*

Challenges and Opportunities

Participants listed a number of challenges, ranging from seasonal inhabitants to naturally flammable vegetation. One challenge centered on the issue of population growth and the resulting competition for natural resources.

- *The costs and amount of resources to solve whatever the problem are directly proportional to the number of people interacting with the perimeter, the number of people interacting in the interface.*
- *Turnover in the population really makes the education more challenging.*
- *Transience of the population.*
- *A lot of our population growth is part-time or seasonal, but their impact is felt all year round.*

Participants framed the challenge of wildland fire in terms of educating people about the need for fire in the area.

The biggest challenges dealt with people's attitudes and the resulting conflicts. Participants said that the public is apathetic, does not want to be held responsible for its actions, is inflexible, has a not-in-my-backyard attitude, wants to do what it wants, and has high expectations for life in the interface. Conflicts have resulted when participants tried to change public attitudes and become more democratic in decisionmaking. They said they have dealt with turf wars, conflicts of interest, and a lack of vision.

- *For us as a Federal agency the problem is a general distrust of government.*
- *There are different ideologies and a diversity of people with which we work.*
- *One other thing that I think makes it challenging is the attitude that there is no solution. We're not going to be able to change it; it's going to happen, the wave is going to wash us off the beach. We're just going to have to let it happen, and I think too many of us just take that attitude and don't really work to get it turned around.*

Strategies and Research Needs

Participants named many agencies—Federal, State, and local—that they consult in their efforts to deal with interface issues. They named associations, councils, and other non-governmental groups as well, such as the Florida Fire Chiefs Association and The Nature Conservancy. They cited information sources such as the Internet, books, specific experts, geographic inventory system technologies, and the news media. Unique sources of help were young people, cooperation and mutual aid, and the natural ability of ecosystems to recover and persist.

Participants seemed to want a great deal in terms of public policy. They cited a desire to repeal the estate tax and establish an agency that would be in charge of mitigation. Overall, they wanted public policy to be clear in saying what needs to be done, driven by intelligent leaders, based on science, and focused on the issues. Many comments expressed a need for a clear plan for managing land and population growth.

Several wanted information regarding fire issues, as well as informed fire-related policies.

- *I'd like a study of the costs and benefits and tradeoffs of different fuel treatments, particularly in urban areas.*
- *Some type of study on the critical factors, weather, or fuel, that contribute to smoke on highways and accidents.*

Education was a popular theme—for the media, the general public, and the participants themselves.

- *I would like to see commercials promoting agriculture and wildland/urban management.*

Participants are seeking access to an array of information, better maps, and predictive models dealing with growth and

growth management. A few asked for information on climate and weather, as well on the natural systems and ecological components in their area.

- *What about research into a little better weather forecasting?*

Participants wanted research on how to value resources and how to conduct financial analyses using those values.

Summary

Florida participants seemed genuinely overwhelmed with the tremendous numbers of newcomers. The population increase has resulted in unprecedented development. Problems that stem from more people and more development are compounded by natural factors in Florida such as climate and the ecosystems' dependency on fire. Management within the Florida interface is bringing new challenges each day. Participants felt that the public is uninformed, set in their ways, and yet demands a high level of services. The participants are seeking strategies to better communicate with the public and to help them understand their shared ecosystem.

Georgia Focus Group Summary

June 20, 2000

Unicoi State Park near Helen, GA (White County)

Describing the Interface

Participants in Georgia spoke of tremendous changes in the interface due to increased housing and commercial development. They believe such development threatens resources in the interface. They mentioned specific concerns regarding forests and water resources, such as erosion and sedimentation. One participant called the land "fragile"; and many were worried about the enormous amount of development on mountains and along streams, coupled with the fragmentation of the forests. Others bemoaned the conversion of agricultural land to housing and commercial development.

- *Bigger and better equipment makes development of homes and roads on mountains possible.*
- *I would show you some of the new developments up on the side of the mountains. There are scars from the driveways. There are very steep approaches that affect water quality.*

- *I'd take you out to a once-productive tree farm or just an agricultural farm that's now a subdivision.*
- *I'd take you by Piney Woods Subdivision, and while we're going by there I'd point out that no more than 10 years ago that was Farmer John's hayfield. In fact, you can still see the terraces behind the houses from the farm practices over the years. It's all changed now.*
- *I'd take you to several places across North Georgia that have very intense commercial development, shopping centers, factory mall, and that type of thing. Then you go a mile down the road and look at the small farms and the 'for sale' signs.*

Participants explained that development is occurring because more and more people are coming into the area. Many new residents are coming from Atlanta, attracted by the many positive features of the area. Some participants felt that newcomers are bringing harmful attitudes with them and are not valuing the land. Others expressed belief that developments lack forethought, creativity, and planning.

- *I'll give you one thing you can hear, smell, and everything else—people. Lots of them and more all of the time. Finding a place to get away from people is getting really difficult.*
- *People are coming here for the slower life and to get away from the hustle and bustle of Atlanta and the suburbs.*
- *There is a lack of creativity in a great deal of the development that's going on. It's basically: punch a road in, knock the trees down, and carve it up.*

Despite these concerns, participants also focused on good things happening in the area. They provided many visual descriptions of natural beauty in the interface. They described positive ways in which people are managing the area and working together to address issues.

- *I think you also want to point out the beauty we have.*
- *We have a lot of high-quality, native forests with very diverse, substantially large trees. There are still some very nicely preserved, natural stands.*
- *In White County I'd like you to see the headwaters of the Chattahoochee River and the beautiful river that we have.*

Factors Driving Change

Overall, participants said they believe that changes occurring in the interface are a direct result of lots of

newcomers to the area. Many circumstances are attracting new people: a booming economy was enabling people to move; people were trying to escape the urban life of Atlanta; the area is very accessible to people from Atlanta; there are many opportunities for recreation; and tourism is a major part of the economy. But basically the participants believed their area is a nice and desirable place because of its natural beauty and mild climate.

- *As Atlanta gets worse, this area looks better.*
- *A lot of the people moving into our area are leaving a metropolitan setting. They can sell 1 acre in the city and come up here and buy 10 acres and think they got a bargain price. Locals could not do that.*
- *The road system makes this area so accessible.*
- *The economy is so good that people have money to spend.*
- *Georgia is the only State that has Atlanta. At this point, Atlanta is the biggest sprawl in the South. It's the business center of the South. Hartsfield is the largest airport. It's all happening in Atlanta. All roads lead to Atlanta.*
- *We're at the tail end of the Appalachia mountain chain, and for a whole lot of people in the Southeast that's their touchpoint with the mountains. We get a lot of traffic from South Georgia, Alabama, and other places. These people come to this area because it's the closest place that they can get to the mountains and for the unique things the mountains offer—trout fishing is one of those—that's unavailable anywhere else south of here.*
- *One thing that's unique about north Georgia is the national forests, the public land, and the availability of wonderful recreation opportunities. That's the very thing that attracts them to the area.*

Participants felt that newcomers are often less knowledgeable about the land and as a result do not appreciate it. The new people have expectations of conveniences and do not understand their effect on the ecosystem.

- *It's also a disconnect. People are getting further and further disconnected from their natural roots and their natural environment. They move to the country to make it look like the city.*
- *People move to the country but don't want to smell the chicken houses.*

Participants believe an increasing population and its many demands have led to unchecked, unregulated development

driven by greed. They feel that zoning and planning have not kept up with the demand for growth.

- *It's all about money.*
- *People want to live rural but they still want to live within 5 minutes of Wal-Mart. Rural living with conveniences.*
- *Consumerism, population growth, and all that stuff that I know we'll never solve, has fueled all the building of little stores here and strip malls there.*

All such changes are compounded by the fact that the original inhabitants can no longer afford to remain. The cultures of mountain people and farmers are being lost.

- *We're seeing ways of life disappear among people who have been here for generations because of the changing environment and influx of people from the outside. There's a cultural loss as well as a physical loss taking place.*

Key Issues

The degradation of natural resources received the most support from participants as a key issue. This category covered erosion, water quality issues, nonnative species, wildlife habitat, prescribed fire issues, and air pollution.

- *Loss of natural areas whether you're talking wooded uplands, streams, or riparian areas.*
- *The introduction of exotic plant and animal species. Very often when you're developing a forested environment, that kind of disturbance promotes exotic species that may not compete well in a forested environment but do very well when the area is disturbed.*
- *Taking land out of production. In other words, where are our 2' x 4's and crops going to come from tomorrow?*

Participants expressed the belief that key issues such as land use changes, zoning and planning, and economic factors are driving the decline in natural resources. They said that land use is changing from agriculture and forest-resources management to commercial and housing development. There has been little zoning and planning to control land changes, nor are there any economic incentives to provide relief for rural landowners. They pointed to development as leading to major infrastructure issues such as transportation and solid waste disposal.

- *The issue of zoning, planning, and that sort of thing is only done on a local, small scale. There needs to be a more comprehensive approach.*

- *Sometimes there is resistance to zoning, whether that's good or bad. There is resistance to proper land-use planning, because it is seen as interference by the government.*
- *Inadequate infrastructure—quantity of water, quantity and number of schools, you can go on and on to the lack of infrastructure.*

Participants felt that an important concept underlying all of the key issues is attitude. They mentioned various types of attitudes: a feeling of powerlessness, unrealistic demands, too little education about issues, and an adamant defense of private property rights.

- *The public demands services.*
- *A very strong issue is private property rights. The issue is the taking of those private property rights whether it's through zoning or conservation or anything else that infringes upon a person's right to do with his property what he wants.*

Challenges and Opportunities

A few participants mentioned natural features such as the topography and fragility of the land in north Georgia, which can and probably will present problems.

- *The resource here is more fragile than in a lot of other places and it takes less to cause problems. Here we have steep slopes and sensitive species.*
- *We have linear environments so that whatever happens upstream flows downstream and impacts the downstream area. So if you have a fellow that builds a pond on the headwaters and it warms the water then the folks downstream don't have trout in their stream.*
- *Topography—the steepness of the slopes, mountain slopes. If you're building on slopes, that affects erosion and sedimentation.*

All of the other challenges discussed had to do with new landowners and the sheer pressure of their numbers. One identified challenge was the quality of public schools in the area. Participants said that people do not understand interface issues, do not understand how the environment works, and do not want the government involved, but still want their problems fixed.

- *The problem is the population just being present when things like prescribed burns are occurring. You have to do prescribed burns in a different way with people around, or you're not allowed to do them at all.*

- *I work with landowners trying to encourage them to manage their timber and they're getting offered \$10,000 per acre for the land. I'm trying to tell them that they need to plant trees on it and in 30 years they might see a profit.*
- *One of the challenges is to emphasize that it's cheaper to protect the resource than to restore it. Whether that's water quality, erosion, or even zoning and development.*
- *I have the first place on the water that comes off of Piney Mountain and I'm always so conscious of anything that I do impacting everyone else downstream, and I think there's not enough of that. People need to be aware that what you do impacts so many other people.*
- *The problem with planning is that it's a bad word that is associated with the removal of private property rights.*

All of this leads to conflicts among people, usually newcomers and locals, and between people and the resources.

- *A lot of local folks that have lived here on the little one-way dirt roads are pretty sick of driving on rutted-out, mudhole, washboard roads and would love to see the roads paved. Now that we have the money to pave those roads, however, the people moving in oppose the local people. These newcomers like the rural aspect of unpaved roads and don't want to change that.*
- *Atlanta's got a lot of people. These many individuals voice their opinions and the few rural voices we have here can't compete.*
- *Atlanta has money, and money is power. Money talks, and people who've got money think they can have all the resources they want. The way they're spending their money is causing problems for us.*

Strategies and Research Needs

Participants named agencies as their main sources of assistance. These included both Federal and State agencies. The university systems, along with the Cooperative Extension Service, also were mentioned. Local and private groups help, as well.

Participants said they needed better management and regulations. They made specific requests, such as having the Federal Government provide fire-control services on land adjacent to national forests; as well as more general requests, such as better planning and funding. A few participants also asked for certain tax changes.

- *I would like to see the State legislature start looking at tax incentives for conservation easements. Tax incentives for the purchase of development rights by the state—ways to try to help keep these areas in green space, despite the fact that development around them is causing the taxes on those properties to go up.*

Participants seemed to really want a change in attitudes of the people in the area. They want the public to become better educated about their environment, more cooperative, and more caring about the land. A number of them suggested specific education programs.

- *We need the willingness of landowners, developers, and all people who are causing this rural-urban interface problem to access the available resources and say, “Gee, I want to do something right with this piece of property.” That willingness is not there right now.*
- *A word keeps coming into my head—pride. People need to have pride in their environment. If they have pride, they take care of their property.*

A few participants also made request for information in the form of maps and geographic information system technologies.

Most of what participants said they wanted in terms of research dealt with resource management, especially of watersheds, streams, and rivers. Some participants said they would support research on the effects of development and land use changes.

- *Is it possible to develop alternatives to the current development schemes, where you can still maximize economic benefits while protecting the environmental values? Is it possible that someone can do simulations or whatever is needed to evaluate these alternatives? We plan to send people to Mars but we don't seem able to plan for development in our own counties.*

Summary

Georgia participants appear to value above all else the beauty and solitude of their area. There is growing apprehension that pressures of urban Atlanta emigration will destroy fragile landscapes in north Georgia. They seemed to recognize that the mountains present unique challenges not found in flatter areas. More and more people are moving to the area, either as tourists or as permanent residents. Participants reflected a strong desire for knowledge and

research about how to manage natural resources in their area, in the face of a staggering increase in the human population. They worry that the public's negative, misinformed attitudes and perceptions will continue to make their job difficult. They have sounded the call for more education to increase knowledge and raise awareness of these issues.

Mississippi Focus Group Summary

June 15, 2000

Orange Grove Community Center in Orange Grove, MS (near Biloxi, in Harrison County)

Describing the Interface

When asked to describe the interface in their area, Mississippi participants discussed increased development. Many statements were simple descriptions of development—as sprawl, cleared land, more billboards, and new subdivisions. They discussed specific aspects of development and its results, and included the broad categories of traffic and transportation problems, waste water and storm water issues, and pressures on natural resources often leading to the degradation of these resources.

- *They bulldoze the pitcher plants and wonder why it floods.*
- *Ozzie-and-Harriet-era zoning applied to new developments.*
- *One word crops up in my mind to describe the way the whole interface looks and that's overgrown. Overgrown due to a lack of fire.*
- *Tremendous choice of new living amenities.*
- *The cities are growing and populations are growing and everybody wants their little piece of nature in their own subdivision or right next to their subdivision, so some of the developments are blending in with nature. Most of them, however, are those little cookie cutter areas.*

These participants focused on two topics related to increased development that are perhaps peculiar to their area: the ubiquitous presence of mobile homes and the need for more recreation opportunities. The topic of mobile homes was addressed with negative feelings and apprehension that their numbers will only increase. Participants worried about providing recreation opportunities and the effect this is likely to have on natural resources.

- *People that have traditionally hunted out in the woods think it's their God-given right, so they still do that. You may hear the sound of angry landowners, and the hunters here aren't used to that.*

One group of comments about rural versus urban attitudes and possible conflicts from the mix of these values addressed the human side of increased development.

Scattered throughout the discussion were comments about the economy and industry of the area, both in terms of how a diversity of industry has encouraged development, and how development has changed the economy from one based on natural resources to one based on tourism and casinos. Participants said that development is fostered by the tremendous growth in population. There seems to be a vicious cycle linking population growth to development.

- *With the population growth, I don't think we're prepared for any kind of disaster [hurricane] at this point in time. Our highway system can't handle it.*

Participants described few positive aspects of the interface. Some recalled images of pine trees and blooming orchids, and suggested that there may be a potential for quality development that protects natural resources. Most agreed that agriculture plays a significant role in the area.

Factors Driving Change

Much discussion about factors that drive change focused on causes of increased population and overdevelopment. Participants described various incentives for moving, e.g., healthy industry and job opportunities, cheap land and other property, favorable climate and environment, economic growth and the hope of making more money, and a general desire to live in a rural area, albeit with urban expectations. They said that such incentives have brought hordes of people to the interface, and that governments have failed to respond and plan accordingly.

- *I think we live in a mobile society, too. Look at the availability of transportation—people are moving from one area to another. It isn't like 10, 15, 20 years ago where a family stayed on one piece of property for year after year. Now people pack up and move across country for jobs and better opportunities. Particularly in this area, this behavior runs headlong into the planning, transportation, and green-space area problem.*

Participants said that people in the area, both new and old, lack an appreciation for the value of natural resources, do not know where to turn for help, and cannot see the big picture in terms of land management.

- *What's happening is that a lot of investment is happening here from people who are not from this area, who are not necessarily sensitive to what we have traditionally. A lot of your problems that you're seeing are caused by a lot of people moving into this area to work here, in response to all of the development, and there's no place for them to live, that's why the mobile homes have become such a hot item.*
- *There is a huge lack of understanding, knowledge, and appreciation of the valuable rural and forest assets that are here. They're just taken for granted, both rivers and forests.*
- *There is a lack of knowledge about how it works together and of the importance of how the environment works.*
- *Lack of public knowledge of which agencies are involved in natural resource management.*

In addition to all the concerns related to development and population increase, participants pointed out that Mississippi has natural features such as weather patterns, topography, vegetation types, and ecosystem characteristics that complicate efforts to manage the interface areas.

Key Issues

Participants strongly supported the notion that the main issues in Mississippi's interface areas have resulted from a burgeoning population and increased development. Many acknowledged that a major problem was lack of government planning, zoning, and vision; and that the problem was exacerbated by a shortfall in public education.

- *I think it's a lack of understanding of the general public, which is a lack of knowledge or lack of education on the issues.*
- *Lack of a real vision for the coast. There's nothing like a hurricane to focus us.*

Participants were genuinely concerned about the general degradation of natural resources. They talked about their worry over the fragmentation of land, the viability of wildlife species and their habitat; and many voiced particular apprehension about wetlands. Pollution issues were high on the list of concerns and included solid-waste

and waste water disposal, storm water runoff, air quality, drinking water quality, and litter.

- *We need to protect open spaces, green spaces, and conservation areas.*
- *Threatened and endangered species.*

Participants mentioned the buildup of fuels in interface areas and talked about people's opposition to the use of prescribed fire. They said that while most new residents do not support the use of prescribed fire, without its use the threat of destructive wildfire increases.

- *The risk has just grown exponentially. You can be totally within the prescription, do everything 100 percent right, and then 12 or so hours later have a smoke-related incident just because we have more traffic than 10 or 20 years ago.*
- *Also, the risk of not burning is growing, and is a mirror image of the risk of prescribed burning.*

Other issues resulting from development are transportation/traffic problems and the need for better disaster planning.

Challenges and Opportunities

Whereas participant discussion of key issues was quick and concise, their discussions of challenges and opportunities prompted many and varied comments. Distinct categories of challenges emerged, as well as several avenues of opportunities to meet them. They spoke of water and wetlands, forest resources, coastal issues, and funding to promote resource management.

- *There is no general recognition of natural capital. That stuff with weeds on it is worth something, for absorption, filtration, habitat, and oxygen.*
- *There's this issue of the value of land when you try to regulate or protect areas from development, like keeping a wetland from being filled, you get into the takings thing, that somebody's saying I can't use my land, you've taken away the value. You're telling me if it's a wetland, it has zero value?*
- *We need to make some people realize there is a difference between north Mississippi and south Mississippi, and we have very different and unique problems that are not related to upstate Mississippi.*

Other major categories were planning and zoning, and greater agency coordination. So far, according to the

participants, planning has been unimaginative and only reactionary. Zoning has been ignored as an effective planning tool. Land-use attitudes, property rights, and regulation are challenges in Mississippi, as well as a lack of education and opportunities for public participation.

- *It seems like there are just rapid changes. Landscapes just change almost overnight before you can even react to anything, and it seems like as these changes occur there's no thought about the impacts on neighbors.*
- *People seem to be using the same approach but expecting different results. They use a cookie cutter approach, whether it's building a subdivision or a mall or whatever, and instead of thinking outside the box, so to speak, they just do it the same way its been done in the past.*
- *We're moving into a multicultural society and I don't think we've changed to reflect that. Well, for example, just in Mississippi, we've got a lot of people who speak Spanish nowadays but many, many years ago that was not the case.*
- *The resources are everybody's. They're used, enjoyed by everybody, but there's not any one entity that has its finger on the button, so it gets back to the communication, coordination, and political subdivision.*

Participants felt that responsibility must also extend to interfacing with residents and developers, whose land-use attitudes often do not respect natural resources and strongly emphasize private property rights. Much of the public is apathetic and does not appreciate the value of natural resources. People do not understand the impact of their actions, but participants are hopeful that educational efforts can help this.

- *It's more the private property rights issue; there is a desire not to have regulations.*
- *The mindset of the individuals—it's my property; I'll do as I darn well please, regardless.*
- *The user fees on public lands will work to some degree but they are just now beginning the process. People are balking at it because we used to do this for nothing and now they're going to charge us?*

Strategies and Research Needs

Government agencies and funds, whether Federal, State, or local, provide much of the help that participants receive. The private sector—in the form of industry or consultant, as well as nongovernment entities like The Nature Conservancy—has contributed valuable resources. Information and data

sources are maps and the Internet. Participants provided many detailed plans, actions, and initiatives that have helped them with their tasks, from State agencies to Web sites, and select industries.

Participants offered a wish list of things to deal with interface issues. Many of their desires seemed to concern planning and management issues, i.e., how to plan, develop, and manage their land with respect for natural resources. They said they wanted fundamental changes in the way local governments operate. They wanted public education about natural resources, which would foster an appreciation for resource issues and how they apply to life in the interface. Several requested specific information about fire-wise landscaping techniques and additional funding for enforcement and personnel on public lands. They want public officials to be better educated in resource management and conflicts; and they are looking for ways to discuss limits to growth, particularly on the coast.

Participants requested several types of research, such as case studies on development and the lessons learned from past mistakes. Participants have possible research questions about certain key areas appropriate to their jobs, such as how to forecast the formation of fog, or develop parameters for stream corridors. There was a general interest in and wish for better monitoring of natural resources.

Summary

Participants in Mississippi face interface issues common throughout the South, although the threat of hurricanes was an additional component. Evacuation plans create unique challenges for transportation engineers. Public education, participation, and communication are key elements to a more balanced view of growth management and resource protection. Better information and more answers will be necessary as needed Mississippi ecosystems are increasingly degraded. Appropriate policies, economic incentives, and leadership are also needed.

Texas Focus Group Summary

June 13, 2000

Montgomery Community College in The Woodlands outside Houston, TX (Montgomery County)

Describing the Interface

Participants described the interface in Texas as a fast-moving transition zone with pockets of development in

natural areas and pockets of woods in sprawling subdivisions. They said that the effects of more people and machines in the area have created constant noise, increased litter, more burning debris, and more drifting air pollution from the urban areas. The “wildness” is disappearing. As a direct result of the increased population, participants see more agricultural land sold to developers; and the remaining landowners have a hard time effectively using land-management tools, such as prescribed burning. Participants suggested that another result is a decline of natural resources in the area: forests suffer from fuel buildup, nonnative trees are planted to replace native forests, endangered species are reduced to a limited number of protected areas, surface water quality is declining, water quantity is reduced, flooding and erosion are increasing, and ecosystems are changing.

- *In a word, the interface is a façade; the illusion that you are in a forest.*
- *It is like a big screen TV that I'm not quite ready to look at yet.*
- *Lots that are too large to mow and too small to manage properly.*

In addition to having more people in the interface, the group explained that there is more conflict between different expectations for this area. New residents expect the services of a metropolitan area, incompatible land uses are mixed closely together, and more diverse people are expressing competing desires for the same land.

- *The interface is a mosaic of incompatible land uses. A zone of increased conflict.*
- *Traditional forest management practices have to be changed because of conflicts between management and people, like prescribed burning.*

Factors Driving Change

The group expressed frustration that all this occurs without any of the traditional levers that are often used to create appropriate social change. A general lack of education about forest functions and a lack of connection to or appreciation of the land were described as important factors that created this interface situation. Texas' relatively low cost of living, no income tax, cheap gas (at the time), and booming economy (at the time) help create opportunities for more people to afford living outside of the city. But most importantly, and the source of extensive conversation, was the lack of regional planning, municipal regulations, and interagency cooperation that could control development.

Participants speculated that this lack of governmental power might be an outgrowth of the Texan attitude toward limitless land resources and a culture that promotes individual rights and private property over the public good.

- *The means to influence private land stewardship is out of balance. It comes down to three things: education, incentives, and regulation. We are void of regulation. We don't have enough incentives. And we aren't doing a good job of education.*
- *The problem is you have people who want the quality of life we have here and how do you balance the development without destroying the environment?*
- *Growth happens in unincorporated areas where there are no regulations or power. County commissioners don't have the tools to regulate and manage.*
- *Local government entities may not want to deal with that political hot potato. They want to be reelected.*
- *Native Texans don't want anybody telling us anything.*
- *Our educational system contributes to the culture Texans have. I think there's a very poor understanding of the ecology and forests. I don't think there's a good understanding of what trees do for us.*
- *We have a very strong sense that if you have a piece of land you can do whatever you want with it, regardless of how it impacts your neighbors. It is your sacred right.*
- *There is no empowerment of regional planning because there are so many local municipal governments. There is fragmentation, imbalance of power, and a lack of coordination.*
- *We not only have leftover pieces of forest that are fragmented, but we also have political fragmentation – an increasing number of Municipal Utility Districts.*
- *In summary – Texas has a very diffused, decentralized governmental structure, both up and down the line. We're independent Texans, by golly. Nobody's going to stop us or tell us something different. There are millions of us and you'll have that many different ways of doing things.*

Key Issues

The group identified six main key issues regarding the interface in Texas. The largest category was natural resource decline, which included water and air pollution, wildlife habitat and forest fragmentation, climate change in the urban area, invasive species, hazardous fuel buildup, changes in the water system and flooding, and changes to basic ecological functions. A lack of economic alternatives to the situation was another issue, defined by no source of public funds to purchase wildlands, which gives willing

sellers few options but to sell to developers. The general practice of maximizing the number of houses or strip malls in an area was termed “greed.”

The third issue was a lack of planning and political alternatives, including a lack of imagination among public officials; a fragmentation of power among local governments instead of regional empowerment; and a lack of meaningful regulations to halt growth.

- *There is no empowerment of regional planning because there are so many local municipal governments. There is fragmentation and imbalance of power and a lack of coordination.*

A lack of education, in both the current landowners and the upcoming citizens, was another key issue. Landowners and newcomers need to better understand the land and how to manage it; youth must better understand the forests of Texas and ecology.

- *One of the key things that tie to all of these factors is the lack of education. The lack of education of our kids – they are growing to adults; the teenagers haven't got an appreciation for the land, what the land does, and how it all ties together.*
- *Public ignorance – ignorance of reality versus expectation. The public has an expectation of what the forest in Texas is, but they have no understanding of the reality of that forest.*

Participants expressed that as a result of poor awareness and few governmental controls, growing conflicts have become an issue in the interface, especially over incompatible and adjacent land uses.

Finally, the outcome of these factors—sprawl in the interface—is itself an issue. Great frustration was expressed at the inability to balance the competing needs of more people for affordable housing and environmental protection. There is also frustration at the loss of productivity of agricultural and forest lands, due to a declining land base and restricted management tools.

- *Every piece of public land we have is used to the hilt. We need a lot more.*

Challenges and Opportunities

As might be expected, the challenges address each of these key issues. Maintaining natural resources, particularly

around the problems of fire, soil erosion, pest infestations, and marketing timber resources, was expressed as an important challenge. Furthermore, coping with fragmentation of natural resources due to sprawl when the small parcels of land represent tremendous revenue potential was particularly challenging.

Similarly, working toward a regional consensus toward planning, changing the notion that local governments can increase development to build a tax base, and integrating planning and implementation for coordinated change were mentioned as well. Opportunities for “smart growth,” for green developments, and for using covenants on private lands were opportunities.

- *I think it is the lack of coordination over all; the lack of integration in planning and the lack of integration in implementation. We have park plans, water management plans, but no one to integrate them together in one document on the implementation side.*

The size of the problem is daunting, because participants believed humans have the capacity to change the landscape to such a great extent. But the category with the most comments revolved around the challenges and opportunities of the human dimensions of the interface. Participants spoke of the need to raise awareness, increase communications, create opportunities to include more diverse populations in decisionmaking, learn how to listen, help others learn to talk, garner grassroots support, and connect people to both the land and each other.

- *How to make your project or issue of interest to the public, which also means making it of sufficient emotional interest to get the newspaper coverage to influence a groundswell of public opinion.*
- *Get the media to report the grassroots support and not drive the agenda themselves.*
- *People think they are being environmentally responsible but in fact they're not.*
- *Getting people to be able to live with each other and talk with each other. One problem in our cities is that people didn't want to live next to somebody who looked different than them and they ran away. We've got to learn to live together.*
- *We need to listen to the public and understand what they want and then translate that into something that's going to work.*

Strategies and Research Needs

Participants listed a variety of State and Federal agencies that provide information on natural resource management, and several organizations that promote discussion from diverse perspectives. Programs that promote land conservation were mentioned several times, such as the Wildscape Program, the Trust for Public Land, the Nature Conservancy, and the Legacy Land Trust. New strategies in planning developments to retain open space and interest in smart growth were mentioned. Participants commented on the importance of looking to models and success stories, such as Chicago's Wilderness Group, the Woodlands, and Florida's history with prescribed fire.

Participants returned to their main themes to make another plea for more regional conservation planning, zoning, incentives for conservation, reductions in liability for owners of green space, education, data on resources availability, and opportunities to exchange information. Even changes to the tax code were mentioned with great skepticism and laughter; indeed the idea of asking everyone to contribute to the expense of running a government seemed logical but impossible.

- *Constitutional relief. Allow public entities to cooperate. Just permit it. It's not too much to ask. Don't require it. Just allow them to cooperate to deal with these issues.*
- *Change the tax code. Only landowners pay taxes. Need to change so everyone pays for government services. Income tax is fairer.*
- *Assistance and facilitation for forums to discuss regional issues. A place for dialogue and exchange, with a good facilitator.*
- *A mechanism to eliminate the liability issues of ownership or define ownership of public open space.*

Participants brainstormed a wide-ranging list of new research information that could help them achieve better interface management. They could use better information about the true costs of community services in the interface, the long-term economic impacts of development on natural resources, the changing ecology of the interface as in control of invasive exotics, the nature of created wetlands, forest health, interface streams, and the optimum density of pines in developed areas to reduce the risk of fire but retain ecosystem services. Only one comment related to human dimensions – to study perceptions of Americans about resource management.

- *We need to know the cost of sprawl in our local area—what it costs taxpayers and communities, what revenue they will obtain from the new tax base, and the cost of possible alternatives to sprawl such as revitalization, redevelopment, brownfield development, and so on.*

Summary

The participants of the two Texas discussion groups expressed great frustration at the march of development into the wildlands around urban hubs and their inability to regulate or change the apparent inevitability of more growth. They hold out hope for change, if the political system were modified to allow agencies to coordinate efforts on zoning and regional planning, and if the population became more educated to understand the issues and their impact on the ecology of the area. A variety of natural resource issues exacerbated by the interface development appear to weigh equally, with water quality and quantity, endangered and invasive species, and wildland fire of greatest concern. There is strong support among these participants for smart growth and conservation developments, where homes and businesses are constructed in concert with protected areas.

Virginia Focus Group Summary

June 1, 2000

George Washington University in Ashburn, VA (Loudoun County)

Describing the Interface

The focus-group participants in Virginia talked about the interface in terms of natural resources and development. Positive remarks about the beauty of natural resources, particularly the rivers and streams, were juxtaposed with comments about the degradation of those resources from development.

- *There is a broad spectrum within a very close proximity where that interface is sometimes very abrupt. You'll have agricultural fields right next to shopping centers. There's no transition zone there.*

Participants described the intense pressures of ever-increasing development, along with a general lack of planning and randomness of land-use patterns. The results of increased development, such as pollution, fragmentation,

traffic congestion, and water availability, were presented as essential to creating a picture of the Virginia interface.

- *Two-thirds of the State is in forest cover. The trend is an increasing amount of forest cover. But if we could see property lines out there, we'd see many, many more forest landowners owning smaller and smaller parcels of forest land.*
- *Virginia is a property rights State. We're also a Dillon Rule State, which means that local government only has the power that the State government grants it. And that really affects local government response to many of these issues.*

The presence of development was seen in terms contrasting old and new, e.g., picturesque forests right next to sprawling development. Participants called the new development “generic,” not reflecting the history and culture that Virginia offers.

- *We have wonderful old villages being surrounded by brand new houses and the impact on that, which would be both the wildlife and the trees; and the old villages which might have closed-canopy trees surrounded by cleared developments with nothing but dirt and houses.*

Participants cited conflict and confusion felt by the people of the area. There seems to be a general fear of the rapid development, but people are not certain what they want. Participants reported increased activism and concern among residents of the interface.

- *I would show you confusion and people knocking heads, I guess you could say. People currently practicing agriculture and the folks that move in from urban areas that did not grow up that way.*

Factors Driving Change

Virginia participants seemed to view changes in the interface as coming from new development, which has emerged from people wanting to escape urban life and enjoy the country lifestyle. They said that an availability of land, jobs, and education opportunities as well as a healthy economy was encouraging such emigration.

- *People want the country experience for themselves and their children.*

Participants described government policies and actions on all levels as doing nothing to prevent development and

protect natural resources. Poor zoning, the abolition of the Virginia Department of Natural Resources in their local area (Loudoun County), and the presence of the Dillon Rule were seen as working to support widespread development. Tax issues are part of the problem.

- *We don't have any sources of income in local government other than property tax, so that tends to drive an awful lot of these issues. If your only money is coming from the land, you have some self-interest in seeing it developed.*
- *Well, there are two sides to the Dillon Rule. It keeps local areas from taxing people to death. I think this is the reason it was put into effect.*
- *Part of what's driving the loss of our farmland is taxes. When the older generation dies, the younger generation that now has this large farm can't afford to pay the estate taxes on that property and have no choice but to at least sell part of it, if not all of it, in order just to pay the taxes. So that's forcing a lot of this turnover as well.*
- *You should also know that the Dillon Rule is somewhat unique to Virginia because there aren't very many States that have that factor. I think there is only a handful left in the country that have the Dillon Rule. (Localities cannot pass any laws without authorization from State law.)*
- *The average age of agricultural producers in Halifax County is close to 57. Many of these farmers have grown children with no interest in the farm. As these farmers die, their children commonly sell the land, which in turn is converted to a new use. Land speculation is a problem.*

Participants indicated frustration from lack of vision and conflicting values.

- *We have a large influx now of populations from other States, a large military population of Virginia, and a large transient population. They don't have a connection to the land that native three- or four-generation Virginians do, and they're bringing their values, which are not the values that might have been here 3 or 4 decades ago.*
- *Many of the comments really come down to the fact that we don't have a common vision or a common understanding of what we would like our society to look like. The fact remains that this Dillon Rule exists because an awful lot of people like the Dillon Rule. If you got enough votes, we can change it. Somebody must like this.*

Key Issues

Two main types of issues emerged: the loss of unique historic character—an integral part of Virginia life—and

environmental degradation, which involves wildlife, water, mountainsides, and land. Several participants used their personal experience with interface conflict to highlight the issues.

- *Issue one for me that deals with forestry is the issue of gypsy moths and the problem of spraying for gypsy moths. I was almost sued for spray going onto someone else's property, which is almost impossible to prevent when you're spraying by the air. You're trying to save your own investment, yet you run the risk of legal problems from the public at large. I don't know how you get around it, but it seems to be a problem.*
- *The wildlife is being squeezed into smaller and smaller areas or into areas where there is little space, like our nursery. We're being inundated, which I would normally love, except that a large part of the inundation are deer, which are very destructive in the nursery. In the last few days I have tripped over fawns in two different places. I love them. They're adorable. But the lack of appropriate wildlife habitat is going to create all kinds of problems.*

Other issues seemed to be causes of the first two issues.

A great deal of discussion revolved around planning challenges—lack of planning, misinformed planning, inflexible planning, and barriers to good planning.

- *It's the complexity of the process that's the problem. In the land development process you deal with a multitude of agencies like the Corps of Engineers, Department of Environmental Quality (DEQ), Virginia Department of Transportation, and obviously the local jurisdiction, and each one of those organizations has opposing views and goals. Trying to weed through those can really force you into doing things that you really don't want to do.*
- *I think in the political process, the planning process, it is in fact the difficulty of resolving conflicting objectives, in particular by people who are seeking to maximize their objectives at the cost of other people's, or other issue objectives. How to get that balance and solve a multi-variable set of objectives is part of the process.*
- *There is no management of resources. There is no mandate for resource management.*
- *Live by the plan, die by the plan. Comprehensive plans need to change, need to be flexible, need to be science-based.*
- *A development will clear a huge piece of land then later worry about losing 10 trees. No common sense.*

Directly related to this issue were various comments on development and its negative aspects. As development occurs, more planning is required and all of the old planning issues are intensified. Poor planning leads to piecemeal development and the results are degradation of natural resources and loss of the cultural and historical character of Virginia.

Regarding development and planning, participants voiced concerns about economic challenges. The forest industry and agriculture are struggling to remain profitable and economically viable, particularly on small parcels of land. Economic pressure to develop land, burdensome taxes, incentives, and disincentives all play a role.

Participants pointed out that much of the land in Loudoun County is privately owned, making the issue of private property rights very important. Managing and protecting natural resources on private lands have posed many challenges.

On a human dimension, participants saw a conflict between new-resident values and heritage values. The participants spoke of a general frustration with a public that seems to be uneducated, misinformed, apathetic, and irresponsible. This sense was compounded by a sense of urgency, because growth and change seem to be happening quickly.

Challenges and Opportunities

Participants saw many challenges in terms of creating and modifying policies and initiatives. They suggested that current policy needs vision and clear direction, and that there needs to be cooperation among agencies involved in interface management. They believed that planning and policy must address issues such as transportation and the preservation of natural resources, while reflecting the diversity of values in the area.

- *There is a lack of a central agency to help partner these human resources that are out there to do the job. I don't think any one private or public agency can do all the jobs that need to be done. There's plenty of work for everybody. What's lacking is a central agency to develop partnerships.*

According to Virginia participants, the main challenge in managing natural resources is preventing fragmentation of landscapes and ecosystems. Most spoke of an opportunity to manage natural systems as a whole.

- *I think we have taken the wrong focus when saving a tree or patch of woods. Rather, you need to take a systems approach. You know, you look at a natural system and all the components starting with the soil and hydrology rather than looking at individual trees. Then maybe you're getting at what you're trying to do better than so many of these things, such as a canopy cover ordinance or saving three trees per lot or whatever it is. If you take one element of a system out of context you've lost the battle before you've started.*

Participants said that dealing with people in the interface presents a number of challenges, and that education would help people understand the value of natural resources. Somehow, participants believed, people must begin to reconcile their values and differences.

- *I think that for the most part people don't see things as resources in this transition area. We constantly talk about undeveloped land, which is land that is currently productive. I mean, agricultural land is not undeveloped. A managed forest is not undeveloped; it's just unpaved. So there's this mental predisposition to it being something else. So this question about are we better off destroying something, and I'll use the m-word, mitigating it somewhere else and thinking we're solving that problem. People don't understand location in the landscape in terms of natural resource functions. I mean the idea that you could move a lowland wetland, put it into the middle of a hill, you know, terrace the hill out and line it with rubber and try to claim that's an equal area, is absurd. You wouldn't do that. You wouldn't move your knee off to your right shoulder and say it's still serving the function of a knee. But we try to do this with forest resources and wetlands and streams and everything else.*
- *Change in values from people that are rural, long-term residents and people that come in from wherever they come from—foreigners, the AOL-ers.*
- *Educating the urban homeowner who has moved out to the country so they can have a positive country experience.*

Strategies and Research Needs

Participants listed resources they use in dealing with interface issues. Federal, State, or local governments provide a lot of necessary information and support; and educational institutes and private sector resources also provide important information. Many cited specific programs and initiatives, such as the Internet, news media, and geographic information system technologies.

Participants wanted specific facts, data, maps, and case studies of management that has worked elsewhere. They called for changes in policy that would allow access to specific programs they believe will help, as well as better planning and more effective leadership. Many suggested that educating leaders and the public would be helpful. Participants appealed directly for more money and for better distribution of funds, citing economic incentives as necessary to bring about change.

- *Issues-based coordination of information. I would like to go to one portal and reach the 87 agencies that have something valuable to say about the issue I'm facing: one-stop shopping.*
- *If I have a problem, I would like to go to an umbrella organization, agency, or something that's going to direct me to the proper place I should go for my need.*
- *We tend to speak aloud in roundtables to one another and not to the public very often.*

Requests for research centered on natural resource issues, particularly environmentally sensitive alternative development. Interest in forest management research projects was high. Participants expressed interest in research projects that consider population growth, development, social attitudes, and communication. Many wanted to have

access to studies that quantify natural resource values, believing this would help protect the nature of Virginia's interface.

- *Put a dollar value on every tree, on every acre of trees.*
- *Natural resources accounting is needed to point out to people what's being lost. A whole new way of taking account of the value of resources that are potentially being lost to urbanization. The loss of soils, the loss of fresh water, not just the loss of trees, but also the loss of wildland itself. A more comprehensive way of doing balance sheets.*

Summary

Northern Virginia is developing very quickly, thanks to a booming economy and close proximity to Washington D.C. The rural and historical character of the region is losing face by the development of look-alike strip malls and subdivisions, much to the chagrin of long-term residents. Planning efforts that would help manage growth seem to be at odds with respecting private property rights and the Dillon Rule. As in other States, Virginia participants were seeking strong leadership and increased public understanding.

Appendix B: Issues¹

This section presents issues identified by members of 12 focus groups in 6 States. The highest-priority issues that each group identified are listed first, followed by a synthesis of issues from all groups.

Priority Issues

In every session, group members were asked to identify issues that need to be addressed in the wildland-urban interface area of their State. From that list, participants indicated the relative priority of each issue. Each participant was given four sticky paper dots and asked to mark issues recorded on a flipchart that were most important to them.

The following tabulations present the highest-priority issues identified by each group. The three-to-five top issues receiving approximately half of the dots (top 50 percent) are shown for each group. (The detailed notes for each focus group session in appendix A present the complete list of issues.) Because the number of participants varied from group to group, the total number of dots varied. Thus the tabulations show the percentage of dots allocated to the top issues within each group. No issue received more than 23 percent of all of the dots in any group, i.e., there are a number of important issues and not a single overwhelmingly important issue.

Dots	Key issues for Alabama groups
%	
	A.M. group
14	Political issues
14	There is a need for patterns of sustainable development.
11	Water quality and quantity
9	Wildland fire control—becomes harder and more critical in the interface.
7	Increased runoff, flooding, and erosion
	P.M. group
14	The lack of vision and leadership means that there have been no decisions about what we want these areas to be.
13	There is a lack of comprehensive land use planning.
13	There is a lack of publicly owned land. Too little land is accessible to the public for recreation.
11	Education

Dots	Key issues for Florida groups
%	
	A.M. group
23	Education of homeowners and developers. There is not enough (quantity and quality) education about the wildland-urban interface, fuel buildup, what is needed to preserve an ecosystem, etc.
19	Growth management is needed at all levels. It must be implemented locally. Land use planning, easements, and placement of infrastructure should guide development and specify who will pay for infrastructure. Previous comprehensive plans contained conflicting objectives.
14	Private property rights must be respected. The government should not purchase all available land—only special lands. People should be able to buy and own land.
	P.M. group
16	Education about our communities, where we live, and how we fit into the natural system.
16	Water quality, the increasing lack of water, and water pollution (runoff and nutrients in streams).
14	Respect for the property rights of the thousands of nonindustrial private landowners.
11	Competing expectations for the use of natural resources.

Dots	Key issues for Georgia groups
%	
	A.M. group
21	Erosion and sedimentation. Laws and regulations already on the books are not being enforced. Private developers, governments, and others are not following Best Management Practices, e.g., local unpaved roads are maintained in ways with no apparent concern for erosion.
19	Cleanliness of water and water supplies
17	Zoning and planning are done on a local scale. Decisions are made on a piecemeal basis. No one is planning at a watershed scale. We need a more comprehensive approach to land-use planning.

¹ Issues recorded in tabulations are verbatim accounts of focus-group records.

	P.M. group
20	Land is being taken out of production by development. The future source of agricultural and forest products is in question.
16	Creation of incentives, alternative taxes, and tax relief for farmland, forests, green space, and the rural character of land.
14	Decreasing water quality, concerns about the quantities of water that are available, and proposed interbasin transfers.

Dots **Key issues for Mississippi groups**

	A.M. group
18	The influx of people, all competing for the limited resource.
17	People are moving into wildlife habitat. The habitat is being lost and degraded. New residents complain about wildlife invading their yards.
15	Drainage and wetland issues—wetlands are being filled to create land for development.

	P.M. group
14	Protection of open space, green space, and conservation areas to combat loss of habitat for native and endangered species.
11	Zoning and enforcement of zoning
11	Prescribed burning—there is a need for burning, but people are opposed to it. The risk for wildfire is growing exponentially as more people move into the interface areas. The risk from not burning is growing as well.
10	The public does not understand the issues.
10	Transportation

Dots **Key issues for Texas groups**

	A.M. group
20	Population growth and influx of people into the interface areas. The struggle to affordably balance the construction of housing and amenities without compromising the environment.
18	There is no empowerment of regional planning. Instead, there is a fragmentation of power among local governments. What results is an imbalance of power.

13	Education—Students and adults need to be educated to better appreciate the land and the resources. Newcomers need to be made aware of the area and what goes on around here.
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	P.M. group
12	The public’s ignorance of the reality versus their expectations of what a forest is, especially in east Texas.
12	Landowners’ lack of alternatives to selling or developing land, e.g., there are no public funds to buy land to preserve it.
12	Lack of enough publicly owned land and the overuse of the little that is available.
10	Lack of open space and “green space development.”
8	Water usage and water pollution

Dots **Key issues for Virginia groups**

	A.M. group
16	Taxes lead to pressures to sell land and develop—estate taxes, local reliance on property taxes, etc.
11	Environmental degradation
11	The complexity of the land development process creates situations in which many agencies have opposing and conflicting views and agendas.
10	Property rights—local governments enact ordinances that restrict forestry practices and the right to farm.
10	Local elected officials and planners lack information on natural resources.

	P.M. group
14	There has been no mandate for management of natural resources. Most land in Loudoun County is privately owned and incentives for those owners to manage their land have been lacking.
14	It has been easy for people to get waivers from regulations and zoning variances for individual parcels of land. The cumulative effects on the landscape have never been considered in decisions that are made on a plot-by-plot basis. No one is planning on the landscape level.
11	The degradation of water quality affects aquatic life and public health.
11	The huge demand for housing in the area exerts insurmountable pressure.

Synthesis of Interface Issues

A review of the 12 groups' priority issues indicates a number of common issues. The following list identifies those that reflect shared concerns about the interface across the South. A word or short phrase summarizes the issue; additional text describes the issue and provides a sense of the range of comments from the groups. The list has been arranged in declining order of priority, as reflected in the percentage of dots that the issues received across the groups.

- **Planning**—lack of landscape-level planning; little or ineffective comprehensive or growth-management planning; land-use decisions made locally on a piece-by-piece basis; decisions about individual pieces of land have a domino effect; zoning and land use plans not enforced and waivers routinely granted; no effective regional planning; agencies working from narrow and sometimes conflicting agendas.
- **Education**—education will be necessary for public appreciation of the land and resources; natural resource students should be better informed about interface issues; homeowners, landowners, and developers should manage land in an environmentally sensitive way; newcomers should learn more about areas and communities into which they move; and public officials should be more knowledgeable about natural resources if they are to make informed decisions.
- **Water quality and quantity**—water pollution affects aquatic life and public health; wetlands management is critical; runoff and erosion are increasing; and supplies of fresh water are in jeopardy.
- **Population growth and influx of people**—a steady influx of people requires additional housing and construction; more and more people are competing for limited resources; and the arrival of more people may adversely affect wildlife habitat.
- **Alternatives to selling land**—incentives and/or tax relief are needed to allow landowners to retain their property instead of being forced to sell to pay taxes (property taxes, etc.).
- **Public and open land**—there is too little publicly owned land; public land is often overused, and there are competing expectations for how it should be used; and more green space within housing and office developments is needed.
- **Private property rights**—it is necessary to balance community well-being with the rights of individuals; opinions and attitudes about private property rights have a bearing on how natural resource agencies are able to work on public and private lands; and local governments enact ordinances that restrict forestry practices and the right to farm.
- **Leadership**—there is no long-term vision for the interface; politics help shape policy; and there are no recognized visionary leaders.
- **Environmental degradation**—an influx of people, construction, poor planning, and competing uses contribute to ecological changes.
- **Fire and prescribed burns**—population growth and newcomers settling in the interface make it harder to use prescribed fire—people may oppose the use of prescribed burning due to concerns with smoke and particulates; the risk of damage to human life and property increases with more development in forested areas; restrictions are placed on prescribed burning; and developers do not incorporate fire protection principles into development plans.

Appendix C: Programs and Strategies Currently Used

In each focus group, participants were asked to name programs and strategies they use to help manage their lives and livelihoods within the interface. There was a great deal of overlap among the groups' lists. There were instances where a useful resource was named in most but not all groups, and others where a resource was listed in one State but in none of the others.

In analyzing the data, we grouped comments into categories. These categories are presented below, followed by comments from discussion-group reports that support each category. The State(s) making each contribution are indicated by U.S. Postal Service abbreviations.

The participants named a variety of information sources that help make their lives and jobs easier. Sources were experts, the Internet, and literature, as well as improved technologies such as geographical information systems:

- Local experts. VA, FL
- Other Southern States. AL, TX
- Digital orthographic photographs and infrared photographs on compact disk. TX
- Books and pamphlets that tell people how to design their yards for drought tolerance and reduced fire risk. FL
- *Inside Alabama Politics* (an insurance industry newsletter). AL
- The Natural Heritage Program maintains a database of species and the best habitats. AL
- Improved technology. AL
- Geographic Information System. AL, FL, VA
- Soil maps. MS
- The Internet. VA, FL, GA, TX, AL, MS
- Web sites such as Livable and Sustainable Communities. MS
- Web sites such as FireWise and insurance company pages. FL

Participants found courses and training programs to be helpful:

- General education programs. VA
- The three-part short-course for forest landowners. VA
- The *Your Town Alabama* training program for local leaders, planners, citizens, and others. AL

- Workshops on wetlands. MS

Participants reported that they rely on the news media, probably as a source of information and a way to disseminate it in FL, VA, AL, and MS, but they also recognized that media-generated information brings both opportunity and cost.

Most participants named sources of assistance and information that can be grouped into one category of agencies and organizations. On the Federal level, participants named the U.S. Army Corps of Engineers (GA, TX), U.S. Fish and Wildlife Service (GA, TX), U.S. Environmental Protection Agency (GA), Federal Emergency Management Agency (FL), USDA Natural Resource Conservation Service (VA, MS, TX, GA) and USDA Forest Service (GA, AL).

A variety of State agencies were cited as offering assistance, but every group mentioned the importance of their State forestry agency:

- State and local soil and water conservation districts. GA
- State water management districts. FL
- The Department of Community Affairs. FL
- The Fish and Wildlife Conservation Commission. FL
- The Parks and Wildlife Department and its Wildscape Program. TX
- The Department of Natural Resources and Environmental Protection Department. GA
- Department of Transportation corridor plantings and wildflowers. MS
- The State forestry agency. AL, TX, MS, GA, FL, VA
- The Alabama Forestry Commission's TREASURE Forests program allows for multiple uses and has served as the model for the Federal stewardship program. AL
- A coalition of groups that promote urban forest assessment and the value of trees. The State Forest Service plans to implement the "City Green" program in all 30 metropolitan areas. TX

The Cooperative Extension Service, based at State land-grant universities, was cited in every State but Texas as providing assistance in interface issues. Other universities were also mentioned:

- The Cooperative Extension Service. MS, GA, VA, FL, AL
- Universities. AL, VA, TX, GA
- Auburn University's Peaks of Excellence program is already beginning to address sustainability. AL
- The University of Georgia's Institute of Government and other service programs. GA.

Participants mentioned local government and the planning and development councils and programs (VA, FL, GA, MS), and regional councils of government (VA, TX).

In several discussion groups, participants cited private industry and private consultants:

- Private industry. MS, VA
- The Southern Company (the holding company that includes Mississippi Power and Georgia Power) planted \$5 million worth of trees in the previous 5 years as part of the carbon sequestration program. MS
- Georgia Power. GA
- Mississippi Power helps State and private landowners to plant habitat in power line corridors. MS
- Private consultants. VA, GA, MS, TX

Nonprofit local and national organizations often were mentioned as sources of information and support, particularly if they worked hard on local issues:

- Native plant societies. TX
- The Chesapeake Bay Initiative. VA
- Forest landowner associations. TX
- Tree advocacy groups. TX
- Local citizens groups, e.g., watershed associations that identify the issues with which they are concerned. GA
- Local stakeholder interest groups. GA
- Successful volunteer coalitions provide a place for information exchange and support, e.g., Chicago Wilderness and Dallas' Great Trinity Forest. TX
- The Wild Turkey Federation and other private associations concerned with hunting and conservation of habitats. These groups help to fund efforts to conserve and enhance habitats on State forests. MS
- The Wildlife Society. TX
- The Sierra Club. TX
- The Nature Conservancy. MS, FL

- American Forest and its City Green software program that assesses the monetary and nonmonetary value of trees in the urban landscape. TX

Several professional organizations were listed:

- The International Society of Arboriculture. GA
- The Society of American Foresters. TX
- The Cattlemen's Associations and other agricultural groups and associations, e.g., fern growers. FL
- The Florida Fire Chiefs Association. FL
- The Texas Forestry Association, a diverse group of Federal, State, and private sector representatives. TX
- Professional organizations (in general). VA

Councils, advisory boards, and similar organizations made up of a combination of people provide participants with places to exchange and generate new ideas. Even the discussion group in which they were participating was mentioned as a useful tool:

- The Georgia Urban Forest Council. GA
- Three fire councils were established in the State, two of which are prescribed-fire councils. FL
- Georgia's Exotic Pest Plant Council. GA
- Local groups such as the Jefferson-Shelby Wildland/Urban Interface Advisory Board provide opportunities for joint planning and information sharing. AL
- The Texas Urban Forestry Council. TX

Many participants said that land trusts, land-acquisition programs, and conservation easements are important to their jobs:

- The Virginia Land Conservation Foundation. VA
- The Land Trust of Virginia, which assists with conservation of the land. VA
- Land trusts and conservation easements. AL
- The Forest Legacy Program was established to buy development rights as a way to protect land. AL
- The Forever Wild Program—a State land-acquisition program. AL
- Not-for-profit organizations, such as The Nature Conservancy and the Trust for Public Land. TX
- The Legacy Land Trust. TX
- Prairie trusts, including the Katy Prairie Trust. TX
- The Farmland Trust. TX

- Land trusts. GA
- Conservation easements. VA, TX

Sources of funding are another helpful resource, as are other economic incentives and funding schemes including tax breaks, cost sharing, and mutual aid:

- Federal resources—funds, grants, and mandates. MS
- The Conservation Reinvestment Act (CRA)—Federal legislation that provides funding for education on natural resource issues. FL
- The USDA Forest Service UCF Grants provide funds for study and program implementation. TX
- Available State and Federal funds and cost sharing programs. VA
- Natural resource plans. Funds provided by the EPA and Department of Environmental Quality help landowners plan for management of natural resources. MS
- Mitigation banks allow developers to buy credits and fund wetland restoration. MS
- Cooperation and mutual aid, although costly, are effective. FL
- The differential property tax, which allows for agricultural and forestry land to be taxed on its current use, provides incentives for not developing land. AL
- Agriculture and Forestry Districts that allow property tax breaks on land. VA

Generally, people were a resource, according to the participants. Some mentioned the public as a whole while others talked about more specific groups. Along the same lines, Alabama groups talked about cooperation among people and agencies. There seemed to be an untapped public sentiment, albeit one that seems to be fostering a willingness to speak and a desire to be more informed:

- We could find ways, such as a survey, to hear more people. AL
- The owners of forested lands and their support and efforts are a resource. AL
- New and younger people are moving into interface areas and are increasingly willing to work with public officials to deal with problems. AL, FL
- Cooperation among people and agencies. AL

Several resources used by participants have to do with creating better development and limiting development in some areas:

- The voluntary National Consensus Standards for Development. AL
- Denied-access roads limit the extent to which people and development can get into certain areas. AL
- New water initiatives have been started. MS
- There was interest and discussion of smart growth and sustainability. Sectors other than the public were showing interest in these concepts. TX
- Conservation-designed subdivisions as an approach to development that allows for lots to be developed while leaving as much of the resource undisturbed, creating large enough tracts for responsible management. TX
- There may be better models for development, e.g., The Woodlands and conservation subdivision design work by Randall Arendt. TX
- The Gulf Coast Institute. TX
- The Smart Growth Coalition. GA

Appendix D: What We Need to Deal With Interface Issues

Participants came up with a list of aids that would help them deal with interface issues. One of the biggest categories in the list had to do with improved leadership and better public policy:

- Better leaders who are impartial, sensible, visionary, and competent. TX, AL, FL, GA, VA, MS
- Property rights that will not be violated as changes are made. TX
- Public policy that is clear, decisive, and science-based. VA, FL, GA

Participants would like to see a revision of authority. In many cases this would mean giving local government more power. Some suggested a redistribution of responsibilities among different agencies. They felt that sometimes the right people do not always have the right power:

- Give local government more power. VA, TX, MS, AL
- Allow local agencies to guide natural-resource management. VA
- Set more State and Federal requirements on local governments to give them an excuse for doing the right thing. GA
- Establish an agency that is charged with doing mitigation work. FL

Participants believed agencies and government should use the power they have to better enforce laws that result in natural-resource protection:

- Better enforcement of the regulations and laws. AL, MS, FL
- Expanded environmental courts. AL

Participants want protection from liability and litigation when it comes to managing their own land:

- Provide for liability indemnification of lands under recreation easements. AL
- Facilitate decisionmaking without fear of litigation. AL
- Provide a mechanism to eliminate liability issues connected to the ownership of green spaces. TX

Additional funding was a general wish and, in many instances, participants cited specific items:

- More money to be able to do what we need to do. VA, GA, FL, MS, AL
- There is no State funding to help counties control sedimentation. GA
- Provide necessary financial support to respond to the demand for more services, and provide better education. AL

Participants called for cooperation and coordination among agencies, leaders, and government:

- The Forest Service should sponsor more forums, inviting mixed groups of participants, to foster human connections. GA, TX, VA
- Ensure better coordination among agencies. VA
- Conduct forums and other events to ensure that there is education of and technical exchange among decision-makers and others. VA, TX

There was a universal call for improved growth management, planning, and land use. Mississippi and Florida seemed particularly to focus on this issue:

- Growth management plans. VA, FL, MS, GA, AL
- Put up a gate at the State line and stop or slow down the influx of new residents. FL
- Better land-use planning and zoning. TX, FL

Participants expressed a desire for the creation of incentives for landowners, developers, and others not to develop their land, maintaining open, green space. Participants saw this as a vital part of protecting natural resources:

- Provide incentives for landowners to keep their lands undeveloped. VA, TX, MS, GA, AL, FL

Tax reform received some support; Florida and Virginia participants cited a need to repeal estate tax:

- Repeal the estate tax. FL, VA

- Change the tax code so that there is less reliance on property taxes. There should be a greater reliance on sales or other taxes where everyone pays. TX
- Implement alternative taxes in State and local jurisdictions. GA

Participants offered a number of suggestions for improving development.

- Allow nontraditional development, such as cluster development that places more units in one part of a parcel to protect acres of green space. MS
- Ensure that development accommodates habitat needs of gopher tortoises, woodpeckers, and other protected species. MS
- Use existing infrastructure rather than new construction. Support in-fill development and structure rehabilitation. AL
- Support development that is less dependent upon the automobile. Encourage community based, pedestrian-friendly development patterns. AL
- Require fire and emergency evacuation routes before new development occurs. FL
- Implement septic-tank inspection to ensure proper functioning. GA

Participants wanted a variety of other things to help them protect the natural resources in the interface:

- A regional conservation plan that cuts across political boundaries. TX
- A State land and water conservation fund. TX
- Ensure that local governments recognize and abide by Federal regulations regarding wetlands. MS
- Establish a safe harbor program for endangered species. MS
- Create an inviolate green infrastructure plan that identifies core habitats, buffers, connectors, and management plans. FL
- Restrict deer hunting near human habitation to avoid risk to humans. GA
- Coordinate long-range transportation planning with natural resource planning. AL

- Continue or accelerate public investment in land. AL
- Establish community programs for recycling, resource recovery, etc. AL
- Instill a long-term valuation and respect for resources, i.e., mature trees and high-quality water. AL

Participants expressed specific thoughts about fire related issues:

- Allow for better fire management. TX, MS, GA, FL
- Educate people about fire dangers within the interface. MS
- Provide information on fire-wise landscaping. MS, FL
- Focus resources on providing roads for emergency vehicles and safe houses to be used when evacuation is necessary. FL

Participants also focused on the human-dimension aspect of land and resource management. They called for education, awareness-raising activities, and changes in attitude.

Comments on education ranged from very general to quite specific. Some participants identified individuals or groups for whom education should be made available. A few cited the need for more funds and requested that certain educational programs be funded:

- General public education. VA, TX, MS, GA, AL
- Youth education. VA, TX, GA, FL
- Develop a Master Environmental Stewardship program that would provide certification as is done with the Master Gardeners and Master Naturalists. TX
- Push for landscaping with native plant species. Educate the public and nurseries. MS
- Ensure that there is more public education. MS
- Raise awareness of natural-resource and related issues. TX, VA, FL, AL
- Improve public communication. MS
- Foster a more caring, more cooperative, more informed, and less apathetic public. GA, FL, AL

Appendix E: Priority Research Needs

Participants suggested many specific research and development opportunities.

General Research Comments:

- Make research findings more readily available and applicable. TX, VA, MS, GA, FL, AL
- Provide more funding for researchers. TX
- Seek consensus among experts so that we have an authoritative source. VA
- Look at the area dynamically and not statistically. Identify likely results of doing one thing versus another. Study causes and potential effects. MS
- Research should be area-specific. AL
- New research programs. Set priorities to direct the research into areas of greatest need. AL

Maps:

- Provide a variety of area-specific maps. VA, MS, TX, GA, FL, AL
- Geographic information systems. Show the number and location of dry fire hydrants (PVC pipe to ponds that survive a 50-year drought). MS
- Provide digital soils maps for the State. GA
- Provide flood-plain maps. GA
- Provide emergency fire crews with global positioning satellite capabilities to locate lightning strikes. FL

Conducting Inventories and Surveys:

- Natural resource inventory. VA, TX, MS, AL
- Conduct an assessment of the local natural, social, and historic resources. VA

Quantifying Natural Resources:

- Give monetary values to natural resources. VA, FL, AL

Climate and Weather:

- Correlate environmental factors with climate change. FL
- Develop better weather forecasting. FL, MS

Prescribed Fire and Wildfire:

- Study the costs, benefits, and tradeoffs of different fuel treatments. FL, MS
- Study critical factors that contribute to smoke on highways. FL
- Assess the costs of not using prescribed burning to manage lands. MS

Growth Management:

- Provide growth projections and growth-impact estimates. TX, MS, VA, GA, FL
- Construct historical documentation of the current situation to determine what worked and what did not. VA, AL
- Provide effective transportation management in high-growth areas. VA, AL
- Apply approaches to planning that have worked in other areas. FL, AL, VA

Ways to Develop:

- Study environmentally sensitive ways to develop. VA, TX, MS, GA, AL
- Determine bio-engineered alternatives for wastewater management, e.g., an alternative to septic systems that would eliminate the need to clear trees for septic fields. VA
- Study better ways to manage storm water on developed sites. VA
- Collect information on bridge and culvert installation to identify ways to reduce the impact on streams and fisheries. GA
- Study the effects of septic systems and provide ways to manage their proliferation. AL
- Determine best ways to deal with urban heat islands, air quality, sewage, etc. Research should consider systems interaction and identify a set of best practices. AL

The Human Dimension:

- Study correlations between loss of natural resources and the population's social and psychological health. Look at crime rate, physical health, mental health, etc. VA

- Conduct sociological studies to better understand the attitudes and beliefs of an increasingly diverse population in the interface. VA
- Explore communication devices that will promote understanding among all parties, achieve agreement among officials, and foster consensus. VA
- Conduct surveys that focus on how people feel about resource management. TX
- Understand how adults learn and help them understand the issues and problems. MS
- Assess the effectiveness of education efforts and programs. GA
- Conduct surveys that explore people's attitudes and resistance to change. AL

Economic Costs of Development:

- What are the costs of growth and development? TX, FL, MS, AL
- What are the costs of the degradation of natural resources? VA, AL

Taxes:

- Study how policies and Federal and State taxes potentially could help achieve goals, manage growth, and preserve the resources. VA
- Study the effects of the estate taxes on land holding, land-use decisions, and patterns of land use. AL

Protecting the Natural Resources:

- Provide guidance on protecting resources in transition. VA, TX
- Provide a means to control exotic and invader species, including emus. TX
- Research the use of buffers to determine optimal uses in land management, whether they are dedicated by developers or bought by the public. FL
- Explore ways to reduce, recycle, or better manage toxic and other human-caused waste. AL

Water Resources:

- Identify the multiple benefits of protecting stream corridors. Appropriately locate and design water and sewer lines run. TX
- Establish parameters for protecting stream corridors. MS
- Provide greater understanding of how roads affect streams. GA
- Use whole watersheds as case studies that identify negative inputs. Study a watershed from headwaters to the sea. Analyze the cumulative effect of minimum-width stream buffers, and identify thresholds. GA
- Study minimum flows necessary to support aquatic life in streams (as opposed to the existing 7Q10 standards). GA
- Assess the effects of reduced water quality on local aquatic species. AL
- Use science-based standards instead of TMDL's (Total Maximum Daily Loads). GA

Forest Health and Management:

- Determine management techniques for managing fragmented forests in urban and suburban areas. Be sure to address riparian issues. VA
- Study the effects of planted/replanted trees in developed area using canopy as a measure of beneficial effect. VA
- Assess the health of interface forests and provide guidance on regeneration and management TX

Forest Industry:

- Assess the return on investment of rural, small-scale industries, including timber holdings. VA
- Determine alternative silviculture options for small woodlot management. VA
- Determine optimum crop-tree densities and management practices for other trees, e.g., juniper and cedar. TX
- Explore secondary processing techniques and the diversification of timber-stand species, to provide added value to exported timber. MS
- Identify best management practices that actually work. GA
- Examine the impact of public policy on the private and public sectors, e.g., look at the effects the Endangered Species Act has had on the timber industry. AL
- Find new uses for wood and timber. AL

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To better understand the wildland-urban interface across the 13 Southern States and to identify issues to be covered in the USDA Forest Service report, "Human Influences on Forest Ecosystems: The Southern Wildland-Urban Interface Assessment," 12 focus groups were conducted in 6 of the Southern States in May and June 2000. The groups were guided through a series of questions that enabled them to describe the interface in their region, list the factors that are driving change, and the key issues associated with the interface. The groups also discussed the challenges and opportunities in the interface and what they need to do a better job.

Keywords: Air quality, focus groups, land use change, water quality, wildland fire, wildlife habitat, wildland-urban interface.



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