

DEMONSTRATING THE VALUE OF A SOCIAL SCIENCE RESEARCH PROGRAM TO A NATURAL RESOURCE MANAGEMENT AGENCY

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Abstract: With ever tightening resources to address an increased number of diverse and complex issues, it has become common for scientists and managers to be called upon to demonstrate the value of their programs. In the spring of 1995, social scientists at the USDA Forest Service North Central Forest Experiment Station were so called upon. This paper discusses an effort to demonstrate the value of a social science research program for the Agency and the Station. We describe our experiences to share our perspectives on the value of a social science research program to public land management, and as an aid to others likely to face similar challenges in the future.

Introduction

In this time of declining budgets and re-evaluation of priorities for funding public programs, many of us have been called upon to demonstrate the value of our program's continued existence; others may face this challenge in the years ahead. In the USDA Forest Service, we have been going through a number of critical evaluations of our research program. One impetus for these evaluations is the National Performance Review's recommendations to federal agencies regarding improving services to the public by eliminating obsolete programs and restructuring others (National Performance Review 1993). Through a strategic planning process currently underway within the Agency, we are working to clearly identify the role and focus of the Forest Service's research program.

In May 1995, social scientists at the North Central Forest Experiment Station (NCFES) were asked by the Forest Service Research staff to clarify the role and value to the Forest Service of social science research. We were subsequently asked to build on that effort and outline the focus of a social science research program at NCFES that contributes to the Agency's mission of "Caring for the Land and Serving the People". In this paper we discuss the process we used to develop a justification for social science

research for both the Agency and the Station, as well as some lessons we learned in undertaking the process. We present this process in the hope that it will help others who will evaluate the importance of their programs to their agencies.

Demonstrating the Value of a National Social Science Research Program in a Public Resource Management Agency

In justifying a social science research program for the USDA Forest Service we focused on five tasks that should be completed in order for decisionmakers to have the information they need to evaluate a program. Although the tasks are framed within the context of Forest Service social science research, they are applicable to any program:

1. Identify how social science research supports the Forest Service's mission.
2. Demonstrate support for an Agency social science research program.
3. Highlight benefits of the social science research program to the Agency.
4. Describe the unique role of the Forest Service's social science research program.
5. Identify emerging social issues with potential impacts on natural resource management and use, and how social science research can help the Agency meet these challenges.

Identify How the Program Supports the Agency's Mission

—It is critical in justifying any program that the program be tied to major areas that the agency expects to emphasize in the years ahead. At the time we were tackling this assignment, broad guidance for Forest Service operations came from two sources—the Agency's statement of a mission, vision, and guiding principles; and a document called "The Forest Service Ethics and Course to the Future." We felt it was critical that we link a national program of social science research to these two documents. You may have similar documents for your organizations.

Regarding the Agency's mission, "Caring for the land and serving the people." Obviously we cannot effectively "serve the people" without a clear understanding of their values, expectations, and behaviors. In "caring for the land," the Agency has considerable expertise in the biological and physical sciences, but its implementation of management strategies is often hampered because of conflicts resulting from competing uses and changing values and expectations associated with public lands. Information developed by social science research is critical to successful implementation of these strategies.

"The Forest Service Ethics and Course to the Future," broadly described the management context and the Agency's focus in providing sustainable benefits to U.S. citizens and to the world. Priorities established in the document included:

1. protect ecosystems,
2. restore deteriorated ecosystems,
3. provide multiple benefits to people within the capabilities of ecosystems, and
4. ensure organizational effectiveness.

Information from social science research figures prominently in supporting all four priorities. We cannot hope to protect or restore ecosystems (items 1 and 2 above) without public understanding and support for these goals and the steps necessary to reach them. The tie of social science research to the third item is clear given research on resource benefits. Regarding the fourth item, there is a significant body of social science literature on improving organizational effectiveness. Although much of this research has been conducted outside the Agency, we need to test some of these findings within the Forest Service, and to conduct research that focuses on how we might implement our mission and vision and apply our guiding principles. Additionally, as discussed earlier, the conflict engendered by trying to implement land management strategies without adequate understanding of or support from the Agency's publics substantially impacts organizational effectiveness.

Demonstrate Support for a Forest Service Social Science Research Program—Identifying internal and external constituencies or supporters for the research being done by Forest Service social scientists makes a powerful statement on the value of this work. With respect to constituents internal to the Agency, a survey of Forest Service employees (Gegersen et al. 1989) showed strong support for social science research. When asked to identify the single greatest challenge facing the Forest Service today, the most common responses by Agency personnel focused on identifying and responding to what the public wants, as well as dealing with changing values and perceptions. Social science research can help the Agency meet these challenges. A more recent study (Mohai et al. 1994) found that Forest Service employees support giving the public more say in Forest Service policymaking. Finding ways to effectively give the public a greater say falls within the realm of social science research.

The need for social science research was also identified in a review of the Agency's first round of National Forest planning (USDA Forest Service 1990a and 1990b). Critique findings that support the need for social science research include the observation that "We must first recognize and accept that planning has important social and political dimensions. We learned the hard way that if we ignore these aspects, the planning process breaks down, and plans cannot be completed or implemented." (USDA Forest Service 1990a p.13) And that to be successful, forest plans need to recognize "other values with less emphasis on receipts and economics." (USDA Forest Service 1990b p.7) "We apparently provided the decisionmakers... very little information on the demographics, culture, or lifestyle of constituents. As a result, decisions often were not acceptable in the social and political spheres." (USDA Forest Service 1990b p.14). Social science research offers solutions to the problems of incorporating "other values" into decisionmaking, including the incorporation of demographics, and information on culture or lifestyle. Social science research can help insure that forest plans are more socially acceptable and politically feasible.

Further support for Forest Service social science research comes from the Agency's long-term strategic plan, as outlined in the draft 1995 Resources Planning Act (RPA)

Program (USDA Forest Service 1995). That document highlights the need to understand "the relationship between people and forest and range ecosystems," and promises that research "will contribute by taking a scientific approach to understanding people's needs and values with regard to ecosystems, thereby providing information which will be necessary in the development of management options that better meet people's needs." (p. III-48). The RPA Program also talks about the need to "incorporate social sciences into policy-related analyses and studies." (p. III-48)

We also had the results of external evaluations of Forest Service Research in which the need to incorporate more social science information into the Agency's land management efforts was highlighted. One of the most often cited studies highlighting the need for more social science research is the National Research Council's *Forestry Research: Mandate for Change*. The Council recommends increased funding in five major areas, including human-forest interactions. The authors observe: "Our efforts to understand how people think about and act on forests have been minimal, and yet most controversies and shortages ultimately arise from human activity... The opportunity to increase knowledge and solve problems is great if research on human-forest interactions is accelerated and if the social ecology of forests is better understood." (National Research Council 1990 pp. 37-38)

Highlight Benefits of the Social Science Research Program to the Agency—Because research is such a small portion of the total Forest Service program, and social science research is relatively small within the research effort itself, we felt it was important to highlight some past accomplishments of the Agency's program, including (but not limited to):

1. developed tools for management decisionmaking such as Limits to Acceptable Change, Recreational Opportunity Spectrum, Visual Resource Management System, and Benefits-Based Management;
2. developed analyses and recommendations regarding forestry incentives programs;
3. developed analyses and recommendations regarding impacts of log exports and imports on employment by geographic region and sector;
4. helped the urban national forests better serve their diverse recreation customers;
5. developed methods for collecting recreation area visitor information and estimating use; and
6. estimated the economic value of noncommodity resources, and the affects of various approaches to investment.

This list illustrates an important characteristic of Forest Service social science research—it is diverse. This diversity is expressed in three ways. First, the social scientists in the Forest Service come from diverse disciplinary backgrounds. Our social science workforce offers perspectives from geography, economics, sociology, landscape architecture, psychology, parks and recreation, planning, policy, and archeology. Each of these perspectives offers unique ways of defining and addressing

natural resource issues. Second, our client base is diverse. We serve groups from large public land managers to small individual private landowners, from wilderness campers to inner-city urban park day users, from small resource-dependent rural communities to large metropolitan areas. Finally, our research covers a diverse array of topics. We've analyzed the impacts of a log export embargo on employment in the Pacific Northwest, identified perceptions of safety in urban parks, and developed computer software for managing small woodlots. The questions and needs of forest managers and users are diverse—our program has, and will continue to reflect this diversity.

Describe the Unique Role of the Forest Service's Social Science Research Program—Looking back over our accomplishments we felt that there are four characteristics that help describe how the Agency's social science research program operates. First, we are client focused. We work with managers and policy makers to enhance the well-being of people through more effective resource management. Our research agenda reflects the needs of our clients. Second, we are problem oriented. We work in the context of actual resource management problems and time frames. We provide managers with the information necessary to develop plans and make decisions for specific resources and places in a timely fashion. Third, we work in teams. We bring together managers, university colleagues, people from other agencies, technology transfer specialists, policy makers, and others to solve specific problems. Increasingly these teams include researchers from a wide range of biological, physical, and social sciences. Finally, we emphasize high quality science in pursuit of generating information to meet the needs of our clients. Although many highlight the differences between the social sciences and the biological and physical sciences, we are similar in that we follow established scientific methods that produce results that are scientifically rigorous and defensible.

Another question related to the role of the Agency's social science research program is "How does the Forest Service social science research program relate to social science research at universities?" It is vital for any public program to be able to distinguish itself from other similar programs, and to be able to place its efforts or mission within a larger context that extends beyond the government sector. Although there are significant differences in the way social science research is conducted in the Forest Service and at universities, the Agency's social scientists work closely with their university partners in ways that capitalize on the strengths of both. When we provide funding for cooperative research projects or work with our university partners in other ways, it helps direct university research toward areas useful to the Forest Service. In instances where we are able to cooperate, our leadership and sensitivity to Agency concerns assure that the research effort stays focused on critical issues, is completed within management-relevant time frames, and is delivered to managers in a useful form.

Identifying Emerging Social Issues—NCFES social scientists have worked to identify critical and/or emerging social issues that have important implications for natural resource management and use. In identifying these issues we started with a clean slate. Many times when agencies

are called upon to justify or develop a research program, they start with what they have and use that as a foundation for future work. However, rather than beginning our process by focusing inward on the Agency, we felt that we needed to look outward, at the broader issues affecting society. We could then identify the societal issues with strong natural resource components and finally develop some critical questions related to each issue that Forest Service social science research should address. The list is based not just on our own interpretation of events, but on issues and concerns expressed by our partners as we cooperate or consult with them about research needs and priorities. We identified seven major issues:

1. The values that people place on forests are changing dramatically—the future of the nation's forests hinges on our ability to keep pace with social change, to understand the forces that drive it, and to integrate these changing values into forest management strategies.
2. Effective communication between the Forest Service and its publics is increasingly important—in the absence of effective communication between the Forest Service and its publics about management of their forest ecosystems, people resort to extreme and contentious ways to make their voices heard.
3. Changing population demographics have wide-ranging implications for forest management—without a better understanding of demographic shifts and their implications, any agency is severely limited in its ability to develop responsive and pro-active management strategies for the years ahead.
4. A growing realization that social systems are intertwined with biological and physical systems raises new questions about the management and use of forest ecosystems—if we don't understand people and natural resource relationships, we simply cannot understand or sustain ecosystems.
5. Social change has and will continue to be a driving force in shaping landscape uses and conditions—attempting to protect, manage, and restore forest ecosystems by focusing solely on the physical and biological dimensions of these systems is socially and politically naive, imperiling the ecosystems we are charged with caring for, the people who depend on these ecosystems for their quality of life, and resource management agencies themselves.
6. Changes in the way we manage forest ecosystems affect the health and sustainability of communities—until we fully understand impacts to communities from forest management policies, natural resource management agencies will continue to find themselves vulnerable to accusations of weakening community character and viability, threatening traditional lifestyles, and ignoring environmental justice.
7. Transition to a global economy and changing land use patterns are transforming forest landscapes and affecting resource markets—local managers may miss significant opportunities for development or blunder into serious conflicts without a good understanding of how these broader social and economic changes affect them.

Moving From an Agency to Station Perspective—Operationalizing the Agency Vision

After making the case for social science research in the Forest Service, we were asked by Station management to develop a social science research program for NCFES. In moving from an Agency to a Station focus, we thought it was critical to accomplish five tasks—clearly define our goals and expected research outcomes; highlight our strengths as a Station; tie our program to where the Station is headed; define the regional contribution to national trends; and take an ecosystem approach.

Define Goals—The goal of the NCFES social science research program is to identify the linkages between the health and productivity of our forests and grasslands and the health and productivity of individuals, communities, and social institutions. The outcome of this research will be forest management decisions that are not only more scientifically feasible but also more politically justifiable. This research has the potential to reduced conflict over natural resource management and use. Reduced conflict would be an outcome of research that decreases or eliminates discrepancies between public values and managers' perceptions of those values; and between the biological, physical, and legal limits to sustainable management and public perceptions of these limits.

Highlight Strengths—We felt that a social science research program is appropriate for NCFES because we have a critical mass of social scientists with diverse backgrounds who already operate effectively as a team. This team consists of 15 scientists from five research work units, as well as numerous research cooperators in colleges and universities and other organizations. Members of the social science team have a broad range of expertise that includes geography, psychology, sociology, economics, parks and recreation, landscape architecture, planning, public policy, forestry, and biology. NCFES social scientists have also begun conducting integrated, interdisciplinary research with Station biological and physical scientists. These efforts have been enhanced by social scientists with backgrounds in forestry and biology, as well as in integrating disciplines such as landscape architecture, parks and recreation, and planning. As we'll discuss later, we see the integration of the social sciences with the biological and physical sciences as critical to answering many of the challenges facing natural resource managers.

Tie to Station Strategic Direction—The focus of the NCFES social science research program is on people-forest interactions—on how forests influence people and how people influence forests. These interactions are a critical component of many significant natural resource issues. As mentioned earlier, this area of research has been highlighted in a number of important strategic planning documents at the national level. It has also been a critical component of NCFES planning documents such as the North Central Forest Experiment Station Strategic Plan and the North Central Forest Experiment Station Ecosystem Management Research Plan. We have participated in Station committees on organizational structures, and will provide assistance with the Station's upcoming strategic planning process.

Define the Regional Context of National Trends—We listed earlier some broad social trends occurring across the country that influence natural resource management and use. At the North Central Station we chose to highlight the regional significance of six of the national trends mentioned earlier:

1. The values that people place on forests are changing dramatically—the large metropolitan areas in the North Central region place millions of people within a few hours of national forests, state parks, and other forested land. While the values of some of these people have been changing, immigrants and people new to forest use have brought greater and more diverse demands on the region's forests.
2. Effective communication between the Forest Service and the public is increasingly important—the number of people interested in and or impacted by forest management decisions is increasing. The large population centers in the North Central region provide greater opportunities and demands for collaborative partnerships which require more effective communication between forest managers and their partners.
3. Changing population demographics have wide-ranging implications for forest management—demographic changes such as increasing age, greater racial and ethnic diversity, and urbanization will have significant impacts on the forests in the North Central region and throughout the U.S.
4. A growing realization that social systems are intertwined with biological and physical systems raises new questions about the management and use of forest ecosystems—in the North Central region, these impacts are especially evident in riparian ecosystems. Riparian areas are a defining characteristics of the North Central region, and it is in the management and use of these areas where tension is often evident between competing users at a site and between users far removed geographically but joined by a ribbon of lakes, rivers, and wetlands.
5. Social change has and will continue to be a driving force in shaping landscape uses and conditions—in the North Central region we have a long history of urbanites summering in forested areas. We are also experiencing increased suburbanization and net immigration in some rural areas. Both these seasonal and new residents have significant impacts on the landscape.
6. Changes in the way we manage forest ecosystems affect the health and sustainability of communities—in the North Central region we have a relatively long history of logging and mining, both of which have played a major role in the establishment and sustainability of rural communities. Changes in the way we manage forests, particularly in the way they impact these two uses of the forest, can have significant impacts on the health of rural communities.

Take an Ecosystem Approach—Two of the tenets of ecosystem management are that ecosystems include people, and that the health and productivity of social systems are

linked to the health and productivity of natural systems. The NCFES social science research program has already been exploring the interactions between forests and communities across the regional landscape—from our large metropolitan areas to isolated rural communities (for example research in urban forestry and rural development). While recognizing special needs in particular areas, we can be most effective in using our scarce resources by focusing on ties between forest management and communities across the urban to wilderness landscape. In urban centers, we address the linkages between the quality of urban life and trees, parks, and open areas. In rural communities the focus shifts to linkages between forest landscapes, forest outputs, and community prosperity and stability. At the interface between these two segments of the landscape we can conduct research related to partnerships and collaborative planning.

There are also critical linkages in people-forest interactions across the landscape. Values formed in urban areas often influence perceptions of how forests should be managed elsewhere. Experiences in rural areas often shape the values of urban residents; urban residents are important users of rural environments; and individuals often move their residences between urban and rural areas.

An important component of ecosystem management that the NCFES social science research program has begun to address is the integration of the biological, physical, and social sciences to help solve complex ecosystem management problems. NCFES scientists have already initiated some research that begins this integration. In one research effort, biological and physical scientists work to identify and quantify the ecological impacts of different disturbances in central hardwood ecosystems, while social scientists (1) model the influence of these disturbances on visual quality, (2) estimate the impacts of these disturbances on noncommodity values, and (3) calculate the impact of ecosystem management on timber sale costs and revenues. In another critical effort, NCFES scientists are taking the first steps in linking people's perceptions of riparian system health to actual biological and physical measurements of riparian system functions. A final example of integrated research is the Station's project comparing people's perceptions of climatological events and trends against actual events and trends to assess how people understand climate change phenomenon.

A guiding principle related to ecosystem management is that scientists and forest managers work closely together to facilitate adaptive management. Social scientists at NCFES are conducting a wide range of studies in support of sub-regional assessments, adaptive management, collaborative planning, and forest plan revision. Many of the issues relevant to forest planning have a significant social component. Improved understanding of the current social context of forest management as well as social trends that are likely to influence management in the years ahead are essential to effective forest planning.

Conclusions

Throughout the process of outlining a program in social science research for the Forest Service and the North

Central Forest Experiment Station we found ourselves returning to three critical tasks:

1. Identify the key resource management issues where social science can make an important contribution.
2. Specify the outputs that will be the products of this research.
3. Identify the outcomes, in terms of changed conditions, that will be the true measure of the benefits of this research—answer the “So what?” question that all scientists should answer regarding the relevance of their research to their clients.

We believe that social science research can help managers work more effectively with their clients and partners to increase “customer” satisfaction, increase support for resource management programs and policies, reduce controversy and conflict, reduce the need for restrictive rules, laws, and regulations relating to resource management and use, and reduce management costs. The entire effort to assess the contributions of social science research at the national and regional levels has been a relevance and reality check that generated a lot of healthy discussion among the social scientists who participated in the process. It has enabled us as individuals and as a team to be more effective in our research, development and technology transfer efforts. We expect that it will also help us work more effectively with other research teams at the regional and national levels. The effort has, thus far, withstood the test of time. Two years later we are comfortable with what we have developed and are making only minor adjustments in our emphases. We encourage others to undertake similar efforts and share their results with the social science community.

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