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New Approaches to Forest Planning: Inventorying and Mapping Place Values in the Pacific Northwest Region

Troy E. Hall, Jennifer O. Farnum, Terry C. Slider, and Kathy Ludlow[1]

Abstract

This report chronicles a large-scale effort to map place values across the Pacific Northwest Region (Washington and Oregon) of the U.S. Forest Service. Through workshops held with Forest Service staff, 485 socioculturally meaningful places were identified. Staff also generated corresponding descriptions of the places' unique social and biophysical elements—in other words, "niche" qualities and "niche" statements that reflected people's values. These places and their niches were then mapped using geographic information systems technology. Niche information was supplemented with additional existing data such as National Visitor Use Monitoring, National Survey of Recreation and the Environment, U.S. and Canadian census data, and other relevant social and economic information. Current and potential applications of this information-gathering technique are discussed, including its uses in forest planning at regional and niche-based levels.

Keywords: Geographic information systems mapping, niche planning, Pacific Northwest, place attachment, place meanings, regional planning, social values.

[1] **Troy E. Hall** is an associate professor, College of Natural Resources, University of Idaho, P.O. Box 441139, Moscow, ID 83844-1139. **Jennifer O. Farnum** was a research social scientist, U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Pacific Wildland Fire Sciences Laboratory, 400 N 34th St. Suite 201, Seattle, WA 98103. **Terry C. Slider** is a regional landscape architect, U.S. Department of Agriculture, Forest Service, Pacific Northwest Region, 333 SW 1st Ave., Portland, OR 97204. **Kathy Ludlow** is a regional landscape architect (retired), Pacific Northwest Region, 3951 NE 20th Ave., Portland, OR 97212.

Rationale for the Pacific Northwest Region Place Mapping Process

Historically, the U.S. Department of Agriculture, Forest Service (USFS) and other land management agencies have not maintained a systematic procedure for capturing place meanings and attachments or for incorporating them into planning, analysis, and decisionmaking. The process described in this report is a method for capturing such social information, detailing the approach used in the USFS Pacific Northwest Region (Region 6, Washington and Oregon) to capture and account for public values. Unlike traditional social planning tools that assume substitutability of place (e.g., Recreation Opportunity Spectrum [ROS] or the Scenery Management System [SMS]), the rationale used in this approach is consistent with ecosystem management concepts such as vision, desired condition, and niche.

A variety of factors contributed to the need for and development of an approach to public lands planning that systematically and scientifically incorporates people's attachments to landscapes. For example, within recent years many people in the management and scientific communities have called for more recognition of public values, attitudes, and connections to specific landscapes. Similarly, there has been increasing acknowledgment that the public engages with and is attached to socially meaningful places, not to abstract management units (Brandenburg and Carroll 1995, Bricker and Kerstetter 2002, Williams et al. 1992, Williams and Stewart 1998), and that places are valued for far more than their uses and commodities (Lewis 1994; Schroeder 1996, 2002). Recognizing this, Region 6 planners wanted to go beyond simply categorizing "types" of lands, as is frequently done in management scenarios (e.g., applications of ROS), and understand deeper, place-specific attachments that people hold for landscapes.

Although methods for eliciting individuals' descriptions of special places and landscape values have been developed in many localized case studies (e.g., Brown et al. 2002, Eisenhauer et al. 2000, Farnum and Kruger 2008, Williams and Vaske 2003, Yung et al. 2003), a major challenge in forest planning has been uniting this type of social information with biophysical information. Region 6 planners envisioned geographic information systems (GIS) as a mechanism that could be used to overcome this challenge; by using a GIS-based system, social information could be presented alongside many types of biophysical information (e.g., vegetation data) that dominantly use visual depictions in the form of maps of existing conditions or plan alternatives. Because of the sophistication and availability of biophysical resource data, such information has tended to drive management decisions, with social information often being overlooked (Kent and Preister 1999). Thus, substantial effort was put into the process of place mapping

with the intention of elevating the importance, relevance, and accessibility of social data.

Another impetus for this project was policy direction within the USFS to adopt a "niche" perspective in planning endeavors such as Recreation Facility Analysis (RFA) and forest plan revision. Policymakers at the USFS have recognized that the agency cannot provide "all things for all people" on every national forest. To do so might mean that recreation opportunities are provided where there is no existing or future demand, or that certain types of facilities or activities may not complement a national forest or local community's sense of place. Incorporating an understanding of localized and contextual place meanings with analysis of social and economic trends creates a systematic, defensible approach to defining an area's recreation niche. When social and economic information is integrated with data from other resource areas (e.g., wildlife), a description of desired future conditions for public lands can be developed. This involves identifying the unique role played by different places, constructing a vision for the future, and assessing the barriers that stand in the way of realizing that vision.

The process described in this report was intended to serve several purposes. In particular, it was developed to help Region 6 with the following tasks:

- **Forest plan revision.** As the national forests go through the process of revising their land and resource management plans, they need to consider sociocultural values within their specific forests and across the region. The regional-scale analysis described in this summary provides a social assessment of setting, activity, and experience meanings across Oregon and Washington, giving forests a springboard for better understanding their recreation roles and niches.
- **Recreation facility analysis.** In the national facility master planning process currently underway across Region 6, planners must identify which facilities to construct, maintain, or decommission. The place-based mapping process described here provides spatially explicit criteria for making such judgments.
- **Travel management—off highway vehicles (OHV).** Unmanaged recreation, (specifically OHV use) has been identified by the USFS former Chief, Dale Bosworth, as one of the four major threats to forest health; as such, trying to develop better management strategies is a key goal for areas in which OHV use is present. The process detailed in this report can assist in developing those strategies by providing a broad-scale contextual overview to evaluate existing sociogeographic information and to formulate alternatives for National Environmental Policy Act (NEPA) evaluation. Spatial

plotting techniques such as those implemented in this project can identify public values, information that can then be integrated with other resource data to assist in determining specific land use allocations.

- **Day-to-day management.** Identifying and prioritizing key values, themes, and features can aid in providing a framework for routine decisionmaking on individual management units. This understanding assists in budgeting and evaluation of proposed actions. Place information also clarifies management strategies and desired conditions, directing day-to-day management through the lens of long-term goals.

Place-Based Planning Workshops

Participants

To gather place-specific information about the region, staff from the regional office conducted workshops with all the national forests in Oregon and Washington during the winter, spring, and summer of 2004. Under the guidance of facilitators from the regional office, 18 meetings were held with a total of 154 participants; depending on staff availability and interest, some forests held multiple meetings and others held only one meeting. Workshops involved forest-level and district-level employees, and were attended primarily by staff with a direct knowledge of the landscape and the people who use it. Approximately 75 percent of workshop participants were recreation field technicians; the remainder of participants consisted of other resource specialists and managers. Although the workshop invitations specifically requested the participation of those knowledgeable about public values, no one was excluded and all who attended were permitted to participate.

Goals and Objectives

Geographers recognize that symbolic or practical place boundaries often do not align with political boundaries (Kent and Preister 1999). Thus, the primary goal of the workshops was to generate geographic boundaries for socioculturally meaningful "places" by gaining a basic understanding of values and meanings associated with landscapes.

In addition to creating geographic place boundaries, planners also wanted to gather information about each place's sociocultural and biophysical attributes. They aimed to develop descriptions of salient place values, meanings, and characteristics, as well as gather information about the USFS's perceptions of the public's management concerns. In this way, all descriptive information generated (e.g., attributes and management concerns) could be attached to places on the ground, permitting analysts to spatially represent these variables across the region. This information

could then be overlain with other types of data—e.g., census data, habitat conditions, or political boundaries—that could reveal areas of special concern or interest.

From the beginning, the regional office's expectation was that they would supply a starting point for place-based work, and that individual forests (e.g., at district and project levels) would refine place understandings by involving more participants and stakeholders. Thus, the process initiated by Region 6 was viewed as a first step in uncovering and locating place meanings and values.

Workshop Activities

At the beginning of each workshop, facilitators (i.e., Region 6 staff) presented workshop participants with a large map of the local national forest and the immediate surrounding vicinity. To begin developing place boundaries, they invited participants to consider public perspectives about the entire area shown, disregarding political and ownership boundaries unless those corresponded to publicly meaningful sociocultural boundaries. Participants were asked, for the landscape as a whole, to identify places with different value sets, areas that could be considered distinct places.

Initially, workshop protocol and activities were somewhat flexible, emerging based on the interactions that occurred during the course of the meetings; questions varied from focusing on what people liked about the area, to what impression they had of different places, to the things that people thought were important about specific areas. Examples of questions included, "Based on your observations, what do you think the public values?" "What niche does this place fill?" "What has meaning for people in regard to recreation?" "Where are these places located?" "Why are these places special or unique?" "Why do people come here?" Participants were given markers and encouraged to circle areas on the map that reflected their responses to the above questions (figure 1).

Typically, participant-generated maps included a large number of highly specific places—too many to be meaningful within a regional context. Therefore, the next step was to conflate boundaries and combine individual responses to generate a composite map with a smaller number of areas. To do this, the group worked as a whole to identify any "common threads" across the areas. Facilitators told groups that, based on work conducted in similar scenarios, producing 18 to 24 places had proven to be most workable for the expanse of land covered.[2] The result was that

[2] The idea of grouping smaller meaningful units within larger units is consistent with procedures used by others to group small "human resource units" (HRUs) within larger "social resource units" (SRUs) (Kent and Preister 1999). Whereas HRU boundaries are often independent of topographical or political boundaries, SRUs typically coincide with geographical features.

conflated area boundaries sometimes followed landscape features, whereas other boundaries were based on sociocultural factors. The entire map area was divided into discrete areas so that no spaces were left undescribed. Areas that had been identified by workshop participants as distinct places were referred to as **working polygons**. Across the entire region, 465 polygons were generated (fig. 2).

Terry C. Slider.

Figure 1—Participants working on place mapping activity.

Graphic courtesy of GeoSpatial Services, Region 6, USDA Forest Service

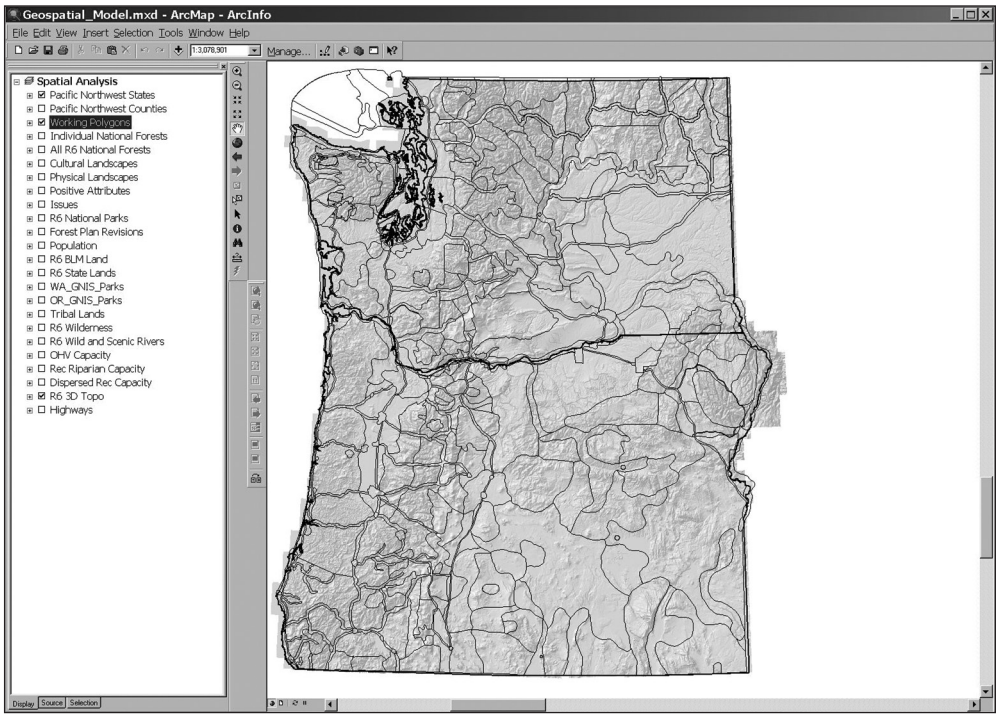


Figure 2—The 465 working polygons in Region 6.

Following the mapping exercise, facilitators divided people into teams to work on developing geographic place inventories (table 1). Teams began by listing geographic attributes that characterized the essence of the area, including salient landforms, fauna and flora, and bodies of water. Participants then noted the types of recreational activities that were most important in the area as well as any significant community events (e.g., festivals) that were valued by locals. The worksheet also provided the opportunity for teams to capture the place's culture, community, economy, and polity. These categories were developed with guidance from ecological and sociological impact assessments (e.g., Lewis 1994, 1999). Specifically, **culture** was presented as an extension of local and regional identity, including religion, family, and values orientation. **Community** was used to refer to shared social solidarity, reflecting elements of civic engagement, organizations and institutions, patterns of social relations, and degree of social integration. **Polity** encompassed public infrastructure and support services as well as government. **Economy** represented institutions for production of goods and services as well as types of enterprises and employment.

After the worksheets were completed, the facilitators developed polygon-specific (i.e., place-specific) niche statements for each polygon by assessing the information captured on the geographic place inventories and the sentiments that had been expressed at the workshops. Niche statements were intended to capture the values and meanings associated with the areas and the elements of the landscape that made it special or unique. For example, niche statements from the Deschutes National Forest workshop included:

- Lower Deschutes: Area with strong influence from sovereign nation with spiritual, cultural connections to place; dispersed recreation emphasis; full spectrum of ecosystems from high alpine to desert settings.
- Fossil Beds: Open, arid, sage, juniper, high desert, dissected by steep, eroded John Day River drainage exposing unique geologic formation corridor. Modest ranches, small communities. Contains the Fossil Beds National Geologic Monument. Lands managed by the National Park Service, USFS, and Bureau of Land Management occupy this landscape.
- Crescent/LaPine: Lodgepole pine ecosystem; chosen independent lifestyle; historic town and mill at Gilcrest; primarily dispersed recreation; portal to Newberry National Volcanic Monument.

Table 1—Geographic place inventory, Cascade Wilderness[a]

Category	Landscape descriptors: Attributes (+)	Landscape descriptors: Deviations (-)	Issues
Geographic			
Landform:			
Cascade Mountains—Three Sisters, Three-Fingered Jack, Mount Washington	Volcanic snow-capped peaks, central portion of Cascade Mountain range, predominant scenic feature	See Air/Viewscape, active vents on South Sister and potential of flooding from Squaw Creek	See Air/Viewscape, How do communities prepare for mountain runoff and potential catastrophic volcanic event?
Fauna/Flora:			
High alpine association	Healthy, resilient, in balance	Spruce budworm at low elevations. Lynx habitat pressure from recreation use.	How do we manage for quality habitat, forest health, safety of users, and adjacent private property?
Water:			
High Lakes	Glacial, hundreds of scenic small streams, lakes. 400 inches of rain replenishing aquifer—see High Desert area places.	Physical impact from high number of users. Not enough water in streams for fisheries and agricultural needs.	How do we balance social and biophysical capacity issues? How do we manage surface and subsurface water supply to meet people and natural resource needs?
Air:			
Air/Viewscape	Predominant scenic views of peaks	Smoked-in views in summer.	How do we manage for fuel/fire and maintain scenic quality?
Sociologic			
Culture:			
Mountains	Mountains are a spiritual/universal anchor.	Native Americans feel use on mountains is not consistent with beliefs.	How do we manage for recreation uses while preserving cultural values?
Transportation routes	Driving, old wagon roads, hiking (historical movement).	Expectation for wildness in area of high use.	How do we balance social and biophysical carrying capacity?
Community:			
Urban populations	Easy access to area from Bend, Redmond, Sisters, LaPine, etc.	Easy access leads to increased use.	How do we maintain wilderness values while meeting urban recreation demands?
Polity:			
FS administers wilderness	Outstandingly remarkable values (ORVs) of wilderness are administered and protected by FS.	See Community	See Community

Table 1—Geographic place inventory, Cascade Wilderness (continued)

Category	Landscape descriptors: Attributes (+)	Landscape descriptors: Deviations (-)	Issues
Economics:			
Eco-tourism	Wilderness and mountain scenery big draw for local and regional urban areas.	High use conflicts with wilderness values.	See Community
Expressions			
Activities:			
Developed recreation roads, trails and trailhead facilities, day use hiking, climbing	Infrastructure is supporting National Scenic Byways and Pacific Crest Trail.	Easy access to wilderness from nationally known routes increases use.	See Community
Dispersed recreation cross-country trails, hiking, camping, climbing	Solitude, wilderness experience, and self-discovery	High use	How do we balance social and biophysical carrying capacity?
Events:			
Traditional hiking and climbing, e.g., Boy Scouts, Mountaineers	Wilderness experience, challenge, social interaction	Number of people using the area	See Community

[a] Niche: high alpine, volcanic peaks, urban backcountry—easy access to scenic areas, lakes. Solitude and healthy ecosystem.

Workshop Leadership Style

Throughout the workshops—particularly the initial ones—leaders actively encouraged participant-driven discussion and activities. Because of this, the structure of workshops varied somewhat by location. This adaptive leadership style was adopted for two reasons. First, facilitators were simultaneously developing the workshop process and gathering useable data from the meetings. Facilitators wanted discussion to be determined—at least in part—by participants, not dictated by facilitator expectations. Thus, protocols were flexible, allowing attendees to voice their individual and collective opinions regarding the process. Second, workshop leaders recognized that conducting such a broad-scale place assessment effort would inevitably be an iterative process, particularly because it was the first attempt of its kind. Owing to these factors, it was difficult to predict the type of structure that ultimately emerged from the process, and which activities would be most successful in capturing relevant information. As leaders conducted more workshops and optimal group activities became apparent, greater structure was provided using the strategies that had proven most effective.

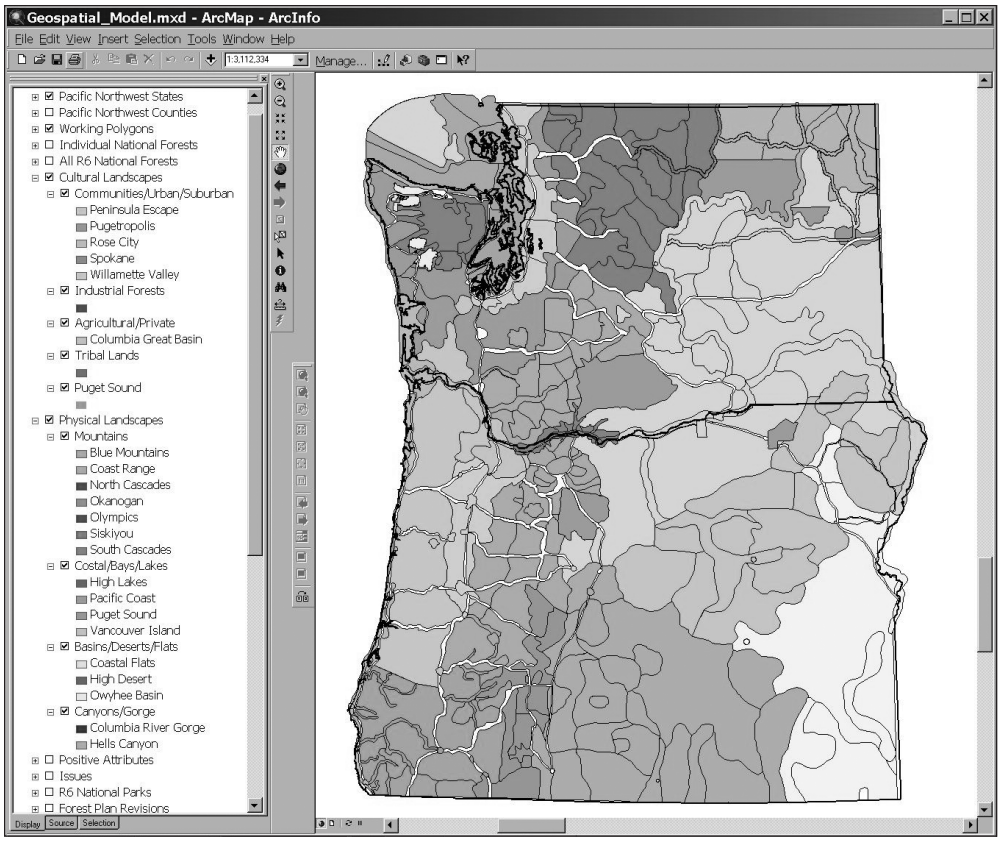
As a result of both the adoption of a participant-driven framework and adaptations that were made in the workshop approach (from less structured to more structured), some of forests that were first consulted in this process lacked information that had ultimately emerged as valuable. Some workshop groups had taken a more inclusive approach in delineating areas' attributes and issues, whereas others seemed to focus exclusively on the area's unique or valued qualities. Recognizing that different conclusions might be drawn depending on which of these approaches was adopted, leaders wanted to bring some level of refinement and validation to the information collected. To do so, telephone interviews were conducted with forest staff members who had been identified as being especially knowledgeable about the area and who had been engaged in the place-planning workshops. The goal of the staff interviews was to verify the accuracy of information obtained during the workshops and address any lingering questions that may have arisen. Standardized protocols were developed for the purposes of these interviews; interviewees were asked to identify three of the area's most valued attributes (whether related to landscapes, culture, economy, etc.) and discuss them at length. In addition, popular recreational activities and social and cultural events were noted. Interviews became a process of cross-validation, looking at existing information and adding new information. In the end, the type of data gathered from each forest was fairly uniform and, at the same time, derived from an adaptive, participant-centered approach.

Managing the Data

Forest workshops were completed in 2004, and interviews completed by early 2005. Regional staff then had the responsibility of assembling, refining, and interpreting the information generated. The 485 unique places (i.e., working polygons) were mapped using an interactive, Oracle-based GIS system[3] (see fig. 2). In a few cases, areas had identical social descriptors but different geographic locations. Therefore, they received the same label and niche statement but nonetheless referred to different places. Specifically, there were five polygons labeled "North Cascade Wilderness," seven polygons labeled "Native American Reservations," and five polygons labeled "Defense Department Lands." Similarly, there were three types of highway descriptors that applied to highway corridor polygons. All other areas had unique titles and niche statements.

In addition to the 465-unit working polygon map, a subregional map was also developed (fig. 3). This subregional map provided a broad-scale perspective of socially meaningful places, and was intended to aid in decisions that required a

[3] The use of trade or firm names in this publication is for reader information and does not imply endorsement by the U.S. Department of Agriculture of any product or service.



GeoSpatial Services, Region 6, USDA Forest Service

Figure 3—Subregional map representing amalgamated polygons.

contextual perspective. The map contained 24 larger areas formed by grouping working polygons having common setting, cultural milieu, and symbolic identity. For each of the 24 areas, a description was written of the geographic and social attributes and place meanings. By consulting this subregional map, forests could quickly determine how key attributes of the local area are similar to or unique from other areas in the region. Also, looking at overlapping GIS layers highlighted the social complexity of issues in different places and spatial dependencies among activities, uses, and meanings.

Regional planners also undertook a process of content analysis to reduce the individual place descriptors provided on each geographic place inventory worksheet to a set of approximately 160 common categories. This information was entered into the GIS database to permit spatial representation of different themes. For example, polygon population density and character were classified as rural/isolated town, rural/small town, urban-wildland interface, gateway community, suburb, or urban area. Similarly, categories associated with economic base were timber, mining, ranching, agriculture, services, recreation/tourism, industry, transportation, retirement, and government.

Supplementing Workshop Data

To provide more richness and context to the workshop data, other types of existing spatial data were added as supplemental GIS layers. Sources of such information included U.S. and Canadian censuses, USDA Economic Research Service, National Visitor Use Monitoring (NVUM), National Survey on Recreation and the Environment (NSRE), Oregon and Washington Statewide Comprehensive Outdoor Recreation Plans (SCORP), as well as information available from various chambers of commerce, the American Automobile Association, market studies, retirement books, the National Association of Counties, the National Association of Realtors, and more. The addition of such information enriched and filled in existing data gaps, which were especially prevalent in private and sovereign land ownership. By adding these additional data into the GIS, relevant social and biophysical information could be used to inform the data gathered through the workshop process (fig. 4 provides an example of querying retirement destination type and population).

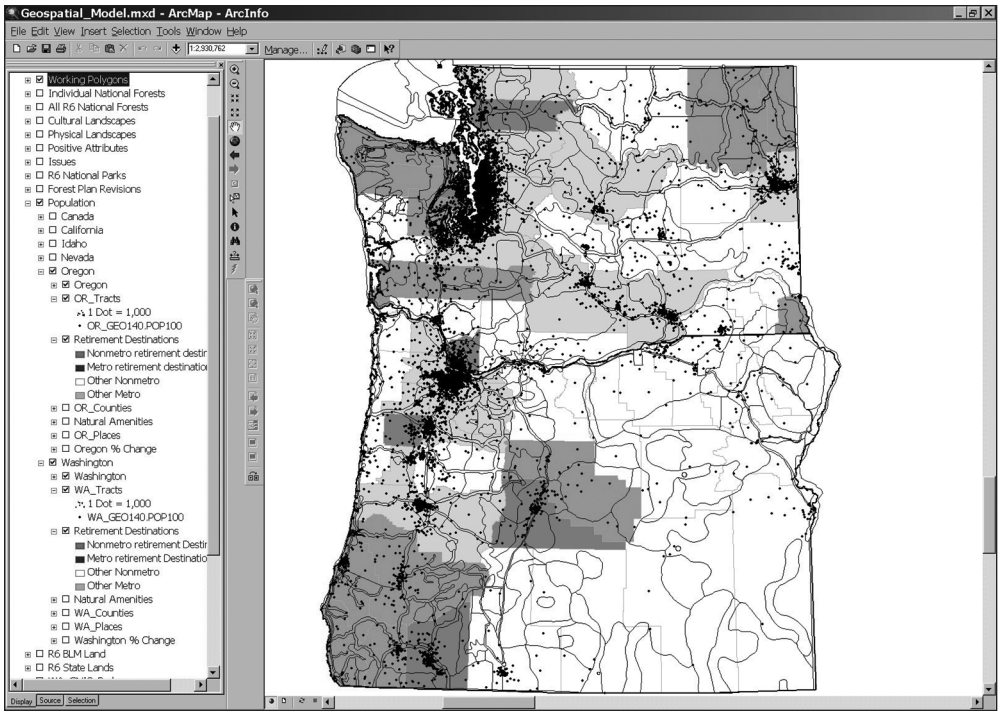


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Figure 4—Using geographic information systems to query retirement destination by type and population.

Using the 160 worksheet categories and the preexisting spatial data, analysts generated maps that displayed all polygons that shared a given quality or qualities; in the GIS program, areas that share such qualities "light up" across Region 6. The GIS system also permitted the user to select a specific polygon, calling up all polygon-specific information including both the workshop-derived data and the supplementary information obtained through the censuses, NVUM, SCORP, etc. In this way, both macro-level (regional) and micro-level (polygon-based) information can be simultaneously compared and evaluated.

Products Generated From the Process

Products other than the GIS tool have been developed as a result of the Region's place-mapping efforts. For example, gap analyses, which assess deviations from desired conditions, were conducted for each of the 485 polygons. To carry out the analyses, a decision was made about whether identified recreational activities (e.g., OHV use, dispersed recreation, riparian recreation) were occurring in the polygon. If the answer was affirmative, attention was then turned to the general character of the experience associated with that activity within the polygon—specifically, the area's setting and its environmental safety. Based on assessment of the activity, setting, and safety, a judgment was reached about whether the polygon was currently acceptable, unacceptable, or "at risk." "At risk" polygons were those in which the biophysical setting was compromised or likely to become so, the quality of recreation experiences was poor, or environmental safety (e.g., OHV use in urban areas) was a concern. At-risk polygons were expected to generate unacceptable levels of conflict or resource impacts in the future and were flagged as important considerations in planning direction and policy. Like the workshop mapping exercise, the gap analyses were intended to give an initial impression of suitability that can guide further investigation at smaller, more detailed scales.

In addition to the gap analyses, the knowledge gained from this process was used to develop a forest-level protocol for mapping place meanings and values. This protocol assists in finer scale analyses that are necessary in order to make informed, place-specific managerial decisions. The protocol includes sections on the background and rationale for place mapping; the process of reviewing existing social data; the determination of the need for additional, place-specific data; guidelines for conducting meetings to generate place maps; and uses and limitations of the information produced.

Considerations in Using the Approach

Issues of Scale

Incorporating social information into complex resource decisions is always a challenge. It is especially challenging because most other resource information (e.g., from wildlife specialists) is spatially explicit, and many human values do not have a direct or necessarily spatial dimension because values are intangible or nonmaterial (Lewis 1994). Those values that do have a spatial component vary tremendously in their spatial extent; whereas a watershed may be reasonably described as having a single vegetation type (or discretely mappable types), or providing habitat for a specific species, some public values may entail attachment to a single tree (e.g., the largest spruce), and other public values may extend to the watershed as a whole (e.g., old-growth forests) or be predicated on a type of activity that can be accommodated at specific sites across the watershed. Thus, users of information generated from place-mapping activities must remember that it is only one type of information about values and that values may have many different spatial scales.

This approach lends itself to representing values at a coarse, general level intended to offer a glimpse into regional land value dynamics. Polygons created through this broad-scale analysis provide overarching, sociogeographic, contextual perspectives for the region. Individual forests or other public land units can use this information as a starting point in conducting their own refined assessments; the detail and specificity needed for such finer scale work may be obtained by "drilling down" into polygons, using more aggressive data-collection techniques such as public meetings, interviews, surveys, etc. (e.g., as done in the NVUM data-gathering process as described by Burns.[4] Conducting finer scale analyses will also help to avoid some of the tension that can arise between local specificity and place nuances versus representing information regionally in a way that has utility for management, planning, and information sharing across management units and administrative levels.

Issues of scale are also important when juxtaposing the working polygons (485) with the larger, subregional polygons (24). The benefit of aggregating the working polygons (i.e., creating the subregional polygons) is that doing so provides a broad perspective of regional functioning. A potential drawback, though, is that the uniqueness that people think is so important about place meanings may become obfuscated. Thus, the optimal approach to dealing with this issue of scale may be to look at aggregated, subregional polygons alongside the smaller working polygons,

[4] Burns, R. 2006. Understanding outdoor recreation in Oregon and Washington. Presentation to Region 6 USDA Forest Service and Oregon State Parks, Portland, Oregon.

simultaneously considering the information developed from finer scale assessments performed by individual forests. Doing so will enable understanding of the interplay between smaller and larger scales and how specific meanings are embedded within larger contexts.

Accessing different scales may also help clarify some of the apparent contradictions that arise from looking only at broad-scale information. For example, based on identified recreational opportunities and land designations, a specific polygon might appear to be unsuitable for OHV use when, in fact, locals might be aware of prime OHV opportunities. However, because OHV-conducive qualities did not emerge based on workshop proceedings, the polygon would not indicate that OHV use was compatible with its social or political attributes.

Definition of Terms

Another important consideration in this approach relates to the definition of key terms that were used. For example, because "niche" has been applied ambiguously within USFS policy, it was difficult to arrive at an incontrovertible interpretation of "niche" during the mapping process (e.g., does "niche" refer to a forest's current niche, desired niche, anticipated niche, etc.?). Participants may have generated responses to "niche" conditions using different understandings of the term. Similarly, there may have been a lack of clarity concerning the notion of "deviation," a category of the geographic place inventories. For example, when participants were judging "deviations," did they consider factors that interfere with the visitors' ability to have their desired experiences? Or, on the other hand, did they interpret this to mean that if visitors strive for their desired experiences, this would cause conditions on the ground to deviate from what is acceptable? Parties interested in conducting this type of exercise in the future should be prepared to clarify the timeframe associated with the terminology (e.g., past, present, or future) and the nature of the conditions (e.g., desired versus expected). Planners should be conscientious in conveying singular definitions of potentially confusing terms, recognizing that ultimate connotations will depend in part on guidance from the Forest Service Washington office.

External Validity

In this process, as is often done, information gathered was based on the expert opinions of forest staff. There is nothing wrong with beginning with expert assessments, and for many purposes these may be quite adequate (Haas 2003). Indeed, some evidence suggests that public opinion is well-represented through staff consultations. For example, a project conducted in southern California found that

citizens ratified approximately 90 percent of the material and assumptions staff generated through mapping procedures similar to those in Region 6 (Juarez 2007).

Despite examples indicating professionals have a solid understanding of public sentiment—at least that of their current visitors–the literature also contains examples in which resource managers misperceived public values and views (e.g., Absher et al. 1988, Ibitayo and Virden 1996, Twight and Lyden 1989). It is easy to understand how this could occur, as managers often hear from a vocal minority who may not represent the full range of public opinion. To be most reliable, processes that rely upon managers' perceptions should verify and expand upon these perceptions by gaining feedback directly from the public.

In this project, the need to cross-validate information gathered in the mapping process analysis was evidenced by participant comments on the geographic place inventories. Even though participants worked hard to put themselves in the position of citizens or visitors, the worksheets indicate that some participants were speaking from their role as resource stewards, not as public mouthpieces. This was especially common for the identification of "issues" and "deviations." For instance, the following "issue" statements generated by participants appear to reflect the language of managers (and presumably their concerns as well) more than the language of the public:

- How do we balance social and biophysical carrying capacity?
- How to minimize catastrophic fire within socially acceptable levels?

On the other hand, some of the issue statements most likely capture the essence of public concerns fairly well. For instance, in the Bend, Oregon, area, issues included the following:

- How can we grow while preserving the positive character of towns?
- Is there enough water for fish and recreation activities (e.g., rafting)?

Thus, there is some concern about the degree of consistency between the views obtained through these meetings and the public values they were intended to reflect. This issue can, and should, be examined in the future through the use of actual constituent participation. Again, this points to the necessity of individual forests conducting their own hands-on assessments of public opinion. By directly consulting the public, forests can verify the accuracy of original findings, identify discrepancies between public and agency perceptions of forest priorities, and develop a more localized understanding of the area's social dynamics. Currently, several forests are performing their own assessments, applying results toward forest plan revision (Blue Mountain forest plan revision) and travel management plans (Deschutes and Ochoco National Forests).

Current Status of the Project

This was and continues to be a large effort with ambitious aims. The project gathered a great deal of momentum in a short amount of time with relatively little expenditure of resources. Currently, members of the regional office are working to add more data types to maps, disperse information to specific forests and districts, and build forest and district capacity to develop procedures for gathering more localized, nuanced information about specific areas.

By using a standardized approach on all national forests in the region, Region 6 planners hope to achieve a common language and frame of reference that captures important issues and values. Such regional consistency across forests is rare. Ideally, this consistency can be used to facilitate communication and collaboration among forests. Although the decentralized nature of the National Forest System has afforded it the ability to make localized, specific, and timely decisions, decentralization also has the side effect of impeding intra-agency communication. Many forests and districts deal with similar problems under similar circumstances but may be unaware of each others' insights into management strategies. By using data gathered through this process, forests can begin to overcome barriers created through decentralization and identify more opportunities for collaboration. Identifying similarities could open avenues for information sharing: What problems were encountered on forests? What solutions were introduced? What worked and what did not? By engaging in these discussions, USFS staff can begin to build networks that can help better inform forest planning, conflict resolution, and other important concerns.

Final Comments

Striking a balance between maintaining a localized understanding of place and recognizing the regional flavor of an area is an ongoing process. Having the type of geospatial data gathered through this process can bring a great deal of clarity to a region and help mitigate some of the conflict that develops when dealing with issues of scale. This process aids in overcoming issues of scale by nesting lower level, more focused analyses within each broad subregion. Indeed, blending of scale is perhaps one of the greatest achievements of the project. Data can be viewed at a refined scale (485 polygons) and concurrently evaluated at a larger scale (24 polygons). Ideally, these scales should also be evaluated relative to results derived from forest- or project-level analyses conducted by individual units. This may prove invaluable in understanding how public lands management should be approached within a niche-based context. Geospatial data (often preexisting, e.g., NVUM or census data) in conjunction with the written data gathered from USFS personnel,

can be used to help public land managers begin to better conceptualize the unique attributes of the area and assess the relative quality, availability, and value associated with particular areas and activities.

The mapping process described here encourages—even demands—a diversified biophysical and social approach to public land planning. Because the data gathered and compiled in this process are so varied, any conclusions derived from them need to be evaluated by an array of different stakeholders including resource managers (e.g., forest supervisors, district rangers, recreation staff), state and local government representatives (e.g., county commissioners; city, state, and regional planners), and nonprofit agencies (e.g., county and regional economic development organizations). Various specialists need to be brought into the process as well, for instance sociologists (to evaluate people's values and attitudes), landscape architects (spatial relationships), geographers (landscape elements), and economists (supply, demand, and services). This aids in generating unique interpretations of data, avoiding the chance that a single agenda or perspective would color the outcome. By using diverse data types and including diverse participants, this approach has the potential to unite different stakeholders and make significant contributions to forest planning approaches.

Contact information

Terry C. Slider, RLA, NARRP
Regional Landscape Architect, Planner
Recreation, Lands and Minerals
333 SW First Ave.
Portland, OR 97204-3623
Phone: (503) 808-2439
Email: tslider@fs.fed.us

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