

FOREST MANAGEMENT

FROM FOREST PLAN DEVELOPMENT

TO IMPLEMENTATION

HOW THE FOREST SERVICE'S PUBLICS ARE CHANGING

by

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INTRODUCTION

Successful implementation of a forest plan depends in large part on 1) the quality of that plan, 2) the amount of public ownership in it and 3) the ability of the Forest Service to effectively involve the public in the process of putting it into action. The first two points are of little help now. A large proportion of the National Forests have already completed their forest plans; the rest are soon to be completed. As a result, the last point becomes most critical. The purpose of this study was to yield information on the interests and behaviors of publics during plan implementation so that those forests implementing their plans can do it successfully with public support.

In this study, some factors in the forest planning environment that may affect forests that are implementing or about to begin implementing their forest plans are discussed. This study focuses specifically on how the roles of public interest groups may be changing between the development and implementation phases of forest planning. It examines those forests that have completed their forest plans as required by the National Forest Management Act of 1976 and are now in the process of implementing them. The experiences on those forests, taken as a whole, can foretell what may happen on other forests that will soon implement plans.

Questions to be answered deal with how the publics involved in forest planning are changing as the Forest Service moves from development to implementation of the plans and what groups are likely to be most involved in the Forest Service's planning processes in the future.

The Forest Service's publics have more than one route to use in pursuing their interests. The National Environmental Policy Act (NEPA) (42 U.S.C. 4321 as amended) process provides one route and is the concern in this paper. When that one fails, or for some reason the groups do not use it, administrative appeals or litigation are often used. These processes are less satisfactory both from the point of view of the Forest Service and the public. They are costly and cause a tearing down, rather than a building up, of communications.

This study is chiefly based on a survey of National Forest planners. Little written work is available on this very narrowly defined problem except as it falls into the general area of public involvement. An example of an study that looks at forest planning participants from empirical research is one by Jo Ellen Force and Kevin L. Williams (1989). That study looked at participants using a survey of the actual participants.

This study relies on forest planners who are close to the process. It looks at forests across the National Forest System with the exception of Region Six (the Pacific Northwest Region). That region is just now beginning to implement plans with only a few out as of this writing.

Background

Of the 127 National Forests, 88 had completed their forest plans as of January 1989. These 88 forests had all completed the first planning process that was legislatively mandated to deal with every acre and all resources within their boundaries and to do it using a very complex and involved

process. That process was described by the National Forest Management Act of 1976 (often called simply NFMA) (16 U.S.C. 1600 as amended). After a lengthy examination of the current situation regarding all resources (in NFMA terminology, the Analysis of the Management Situation), planners must produce a set of alternatives for the future management of the forest's resources. A plan is complete when it has been scrutinized by the public and other groups and agencies and an alternative has been selected by the Regional Forester.

A high degree of public involvement is required by the National Forest Management Act during the forest planning process. The National Environmental Policy Act of 1969 (NEPA) is even more specific in terms of public involvement requirements than NFMA and applies to any environmental action. The National Environmental Policy Act describes the public documentation that must be done before a proposal can be acted on. The Act does not require decision-makers to change policy based on public petition. It requires them to openly and professionally display all of the actions that are being considered and describe all of the effects that will occur if these actions are to be taken. In this way, the decision will be made in light of public scrutiny.

On the 88 forests with forest plans (as of this writing several more have been completed) the next task was to take the forest plan's goals, standards, guidelines and activities and put them into action. While the plans contain many specific directions in terms of quantities of outputs of goods and services, they are typically not specific in terms of locations of actual activities that will occur. The forests are so big, and the alternatives are so complex that it would have been very difficult to describe precise

on-the-ground locations for projects or to name these projects in most cases. What the plans do is stratify the forest lands into smaller management areas and then provide management prescriptions, standards and guidelines for management of those areas.

After a plan is completed, there is a lot of detailed decision-making that must still be done. It is done on a different level though and has more localized impacts. This phase is referred to by different names, however, the use of the term implementation is a common way to describe putting the plan into action. The Chief of the Forest Service has recently stated that additional "area analysis" will not be done under the forest plans. The concern is that another layer of planning and decision-making will cause further slowing in the efforts to implement forest plans. As a result, the nine regions of the Forest Service have developed their own approaches to the implementation process. Several of these regions have publications that outline their approaches to the implementation process. These processes vary somewhat from region to region but in most cases follow a pattern something like that of the Northern Region (Region One) described below (USDA Forest Service, 1989).

ANALYSIS PHASE (Integrated Resource Analysis)

1. Identify opportunities - Look for places to accomplish the Plan's goals and objectives
2. Identify Mgt. Concerns and Issues
3. Identify analysis objectives and the Area for analysis
4. Determine opportunity limits

NEPA DECISION PHASE

1. Define actions
2. Determine the range of those actions
3. Identify the Issues involved
4. Determine a Range of Alternatives including no action at all
5. Alternatives must provide site-specific location of practices

6. Identify Effects
7. Determine mitigation and monitoring
8. Prepare documentation

DECISION DOCUMENT - Forest Supervisor's decision on implementation
MONITOR and EVALUATE
(Amend or Revise Plan when needed)

The intermediate step, called the analysis phase or integrated resource analysis, looks at the various forest areas and develops a "best" approach to conducting the various activities such as timber harvests or recreation developments in a way that is consistent with what the plan requires and fits the needs of the public at the time of implementation. This is not a decision process but rather an analysis and as such does not carry with it the NEPA requirement that public participation occur. However, most regions have recommended that the public be afforded opportunities to comment on and get involved in this process so that both the agency and the public remain aware of what is happening and communication lines are kept open.

The last major phase of implementation is the decision phase. Here the public must be involved under NEPA regulations. Each forest plan project will undergo a NEPA analysis and decision that provides alternatives that can then be looked at by the public and commented on. The decision is whether or not to go ahead with the project and if it is to be done, just how it will occur and what mitigating measures will provide for protection of the environment. An example might be a recreational development. The plan typically tells how much more recreation activity is needed and then implementation will be the process used to determine where to have the development and just how to achieve it.

It is uncertain whether the drafters of NEPA understood the extent to which the interest groups would organize to get involved in the process they

designed. Since the law was passed, groups of all types have sprung up and become highly organized and intelligent about the process, the resources and the agencies that they are watching. Decisions by officials are frequently and sometimes routinely appealed by active citizens. Groups are even available to tell people how best to appeal a forest decision. During the earlier part of the forest planning process one group published a document that explained how to get involved in forest planning.

It is apparent that the era of "trust us, we know what's best" has passed. A new era of "consultative management" has begun (Tipple and Wellman, 1989).

Since implementation of forest plans is underway, it seems instructive to examine how various publics are becoming involved in implementation efforts. Such information might be useful to agency administrators in the implementation process and to administrators of those forests not yet involved in implementation. From this examination we should learn how best to approach this "consultative management" era with a fuller knowledge of who will be partners in the process.

This examination could involve the many factors or variables in the planning process. Some of these factors are dependent on others and the following suggests a logical approach to the analysis:

Planning Environment
Factors
(Independent Variables)

Analyzed Effects on
Public Involvement
(Dependent Variables)

Forest Location -----> Group interest and behavior

Where is the forest located with respect to large population centers?

**Organizational level where imple-
mentation work is being done -----> Group interest and behavior**

Where, in the organization is the work being done (e.g. District or Forest level)

Plan Development vs. Implementation ---> Public Issues

Have the issues changed between the two phases of planning?

Plan Development vs. Implementation ---> Group Size

Have the size of groups gone up or down -- or stayed the same?

Plan Development vs. Implementation ---> Group interest and behavior

Has group behavior and interest changed between planning phases?

Group Type -----> Group behavior

How do the groups differ with regard to behavior in the two phases?

If the planners who will be implementing the forest plans understand the relationships between these factors, they may be better able to meet and work with the groups that will approach the forests during the upcoming implementation process. This study looks at these factors in detail through the use of a survey of planners that are deeply involved in the process now.

The Survey

As of December 1988, 88 national forests had published their forest plans and final environmental impact statements under the National Forest Management Act regulations. Of these, a contact was established on 78 forests who had the depth of experience needed to discuss both development and implementation of the plans and who had a desire to help with the study. Appendix B contains a list of all the forests surveyed and the date of release of the plans of those forests (dates were not found for several.) Each planner or forest specialist that participated had been involved with both development of the forest's plan and then had become involved with implementation of that plan. In several cases, it was necessary to find a person who was involved but was not a planner because many of the planners had moved to other jobs after the forest plan was released. In two cases, planners were surveyed at their new forests.

Of the 78 forests, survey questionnaires were completed by one participant on 71 forests. The forests that completed the survey are also noted in Appendix B. Appendix A is a copy of the survey questionnaire with the responses entered in the spaces.

The questions in the survey covered a variety of factors, however the key question was one in which the planners were asked to rate the level of involvement that they observed by thirteen interest group types. Their scores on this question formed the basis for comparisons which appear in much of the following discussion.

The core of the survey was focused on the following group types that were commonly used to classify groups during plan development content analyses:

Local Government
State Government
Environmental Interest Groups
Logging/Wood Products Industry
Tourism Industry
Mining Industry
Grazing Industry
Commercial Fishing Industry
Hunting/Fishing Interests
Recreation Groups
Native Americans
Individuals as a group
Others

These names were used to categorize any interest groups about which planners were asked to comment. Although flaws can be found in this approach, by and large, the respondents found these to work quite well in categorizing their publics. Only a few needed to use the "other" category for groups that were involved on their forests.

The survey was electronically transmitted using the Forest Service's Data General computer network. The network consists of mini-computers with multiple work stations on nearly all of the district offices, all forest

supervisor's offices, the nine regional offices and the Washington office. Most responses to the survey were returned through this system. The process was expedited greatly by the system. When responses began to be late coming back, reminders were sent out asking participants to please respond soon. Results were then compiled using a PC (personal computer) spreadsheet program. The data were checked and then analyzed using standard mean and frequency analyses and in some cases tests of statistical significance and regression analyses were made.

RESULTS AND INTERPRETATION

This section presents the survey results with interpretations based on the FACTOR --> EFFECT structure introduced on page 6. Additional data and other survey results are found in the appendix.

Forest Location -----> Group Interest and Behavior

The question here is, what is the effect of the location of the forest on the behavior and interest levels of the various publics? Correlations were examined between the factors of 1) distance of the forest office to the nearest city of over 50,000 population and 2) size of the nearest town of 50,000 or more.

Thirty-seven percent of the forests surveyed are located within 30 miles of a city of 50,000 or more. Nineteen percent of the forests are more than 120 miles from such a city. Six percent of the forests cited their nearest city

being over 1 million population while 33 percent reported populations between 50,000 and 75,000 in the nearest large city (over 50,000 population).

These data were analyzed to see if proximity to population centers had any effect on behavior and interest level in planning by conducting regression analyses. Regressions were examined between both distance and population and the ratings achieved by the various group types for level of participation (zero to 3; zero signifies no participation, 3 for high participation, 2 for moderate and 1 for minor).

In all cases but one, no statistically significant relationships were found between group score and distance to nearest city, population of nearest city or the logarithm of the population (regression analysis data are found in Appendix C.) The case which did show a significant relationship was that of the logging and wood products group which had a negative relationship with the logarithm of population. The significance level was found to be .007 and the R^2 was .104. This is a low coefficient of determination (R^2), indicating that much of the variation in the scores is explained by factors other than proximity of the population center. However, the relationship is statistically significant. The analysis would likely have shown a stronger correlation if the resolution of population size had gone below 50,000. Many data points were grouped there since 37% of the forests are located near cities of that size.

While the data produced few statistically significant results, the slopes of the fitted regression lines were as was anticipated. For example, recreation group participation seems to increase with greater proximity to

population centers and other amenity advocate groups showed this same positive relationship. Grazing and mining groups showed negative relationships as did logging groups, and governmental groups showed very little relationship to proximity to population centers.

Proximity to population centers may be most important in considering where the plan implementation work is being done. Planners may be able to anticipate the interest level their process will enjoy by considering what type of activity is proposed, what groups are likely to get involved and whether or not those group types need a metropolitan area to support their activities.

Organizational Level Where Implementation Work is Being Done --> Group Interest and Behavior

While most forests complete their implementation on the lowest administrative level, the Ranger District, each forest was asked to respond to a question concerning this topic. Sixty-four forests reported that their implementation work was, in fact, being done on the Districts. Five forests said that it was being done at the Forest Supervisor's office while two forests stated that both levels were doing some of the work. The study intended to look at the effects of the organizational level at which the planning is done on the way groups responded. Since development work was all done on the supervisor's office level and the implementation work is largely being done on the districts, no comparisons could be made.

However, the question was aimed at finding out where the citizen who wanted to get involved could do so. The districts are typically located in the

smaller towns and would be nearer to the actual project locations so the people who are concerned on a local level could gain access much more easily. Often, however, the expertise needed to carry out complex analyses does not exist on the district. In these cases, either the Supervisor's office takes responsibility, as in the case of the 5 forests mentioned above, or some expertise is shared, as is the case on most forests. The two forests that said that they shared the work probably divided up the projects and the more complex programmatic ones went to the Supervisor's office for execution. On the Chugach Forest in Alaska, the forest plan appeal was settled by agreement to do in-depth analysis of the management areas with a full EIS being required on each of the areas. This meant that all of the work was to be done at the supervisor's office level. This approach is not, however, being followed on other forests.

In contrast to the implementation process, the plan development process across the nation was almost totally done at the supervisor's office level. Plans were complex and spanned all districts and the public involvement brought in concerns from a very diverse group of publics. The scope of the issues was much more broad than an individual timber sale for example. It included the level of timber harvest for the entire forest and all other programmatic decisions. Individuals nationwide became involved with many of the plans because of their interest in these broad issues.

Since such a high proportion of the forests responded by saying that the implementation work was being done at the district level, it is apparent that the publics that are interested in participating and who have localized concerns will find the process to be at least geographically convenient for them.

Plan Development vs. Plan Implementation -----> Public Issues

The National Environmental Policy Act of 1969 requires that the public issues concerning a proposal be examined in detail and that alternatives be developed to address them. The National Forest Management Act of 1976 also requires that this be done in order to determine which activities must be analyzed in the greatest detail. In forest planning, the list of issues typically included such things as "What level of timber harvesting should occur on the National Forest" and "How much recreation development should be done". In implementation, the issues were expected to be directed more toward where activities should or should not occur rather than if they should occur. The USDA Northern Region implementation process description (Feb. 1989) states that, during implementation, issues need to be specific to the analysis to be conducted (and to the decisions to be made) and the areas to be analyzed. This statement is consistent with the National Forest Management Act implementing regulations. Other regions are also looking at treatment of the issues, some stating that issues that were brought up during the forest planning process should not be made a part of the analysis during implementation.

The survey asked the planners on the forests whether the issues that were coming up during implementation were the same as or different than those that came up during forest plan development. The answer from 75% of the planners was that they were the same issues. A few said that there was a combination of new issues and old ones and the remainder (18%) said that the issues were new ones not brought up during plan development. While the question may have been interpreted in more than one way, it seems that we may

be seeing that the publics involved with plan implementation see this phase as a new chance to get their side of these issues aired. If a group was not satisfied with the results of the plan development phase, it could now try to bring it up again whenever the agency tries to carry out one of the plan's activities.

Comments on a question that allowed planners to describe the changes in their own words, indicated this tactic was being used. Many planners said that some publics were not satisfied with the way that the plan came out and now were again trying to accomplish the same goals by getting involved in the implementation phase.

Plan Development vs. Implementation -----> Group Size

Interest groups that became involved with forest planning during the last 9 years have ranged from small ad hoc groups of concerned local people to national interest groups with large budgets and memberships in the millions who incorporate large legal staffs and lobbyists. These exist on both the industry and environmentalist sides. On the one hand, the small groups could have tremendous local clout and impact on the District Ranger's decisions while on the other, the large powerful groups would have little effect locally but would put pressure on national congressional leaders and on agency people at the national and regional level. Forest planning saw a lot of activity on the national level by the large and powerful groups as well as locally from the smaller groups.

The survey required planners to respond to a question on the group size and interesting results were obtained. Fifty-five percent said that the group size had not changed. Twenty-four percent said that group size had gone down while twenty-one percent said that the size of involved groups had increased. This is rather inconclusive evidence for making a statement about group size. Most likely we can say on the whole that, in the eyes of the people who are implementing the plans, the net change was not noticeable. It is a very difficult question because while it asks for a relative judgement, it requires a very objective look at the participants with a very in-depth knowledge of who was involved in both phases.

Plan Development vs. Implementation -----> Group Interest and Behavior

Interest groups became involved with forest planning for many different reasons. They have members who share interests that would be potentially affected by decisions in the forest plans and they wanted to have some input into the decision-making process. Many just wanted to be informed as to what the Forest Service was doing on the National Forests.

For some groups, the most advantageous time to get involved with the decision-making process on the forests was during comprehensive forest-wide planning. For others it is more effective in terms of their needs to wait until the projects are being planned or areas are being examined in detail. In addition, a group that saw its best opportunity to get its point across during plan development may have tried and failed in that process, in which case it would likely try again during implementation of projects under that plan. On the other hand, if the types of decisions that affect a group are not likely to

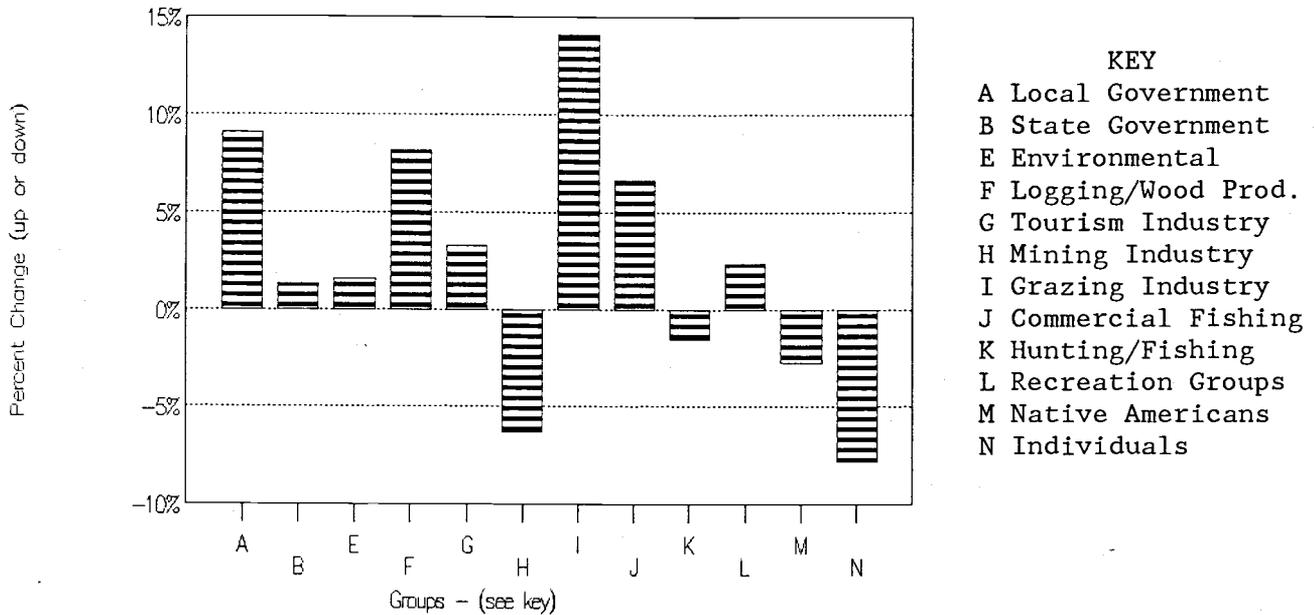
be made during comprehensive planning then that group would be more likely to try to assert itself during the implementation phase. There are other strategies as well which will be discussed in the following pages.

The participants were asked to rate each group's level of participation, both during plan development and implementation. A rating of zero for a group indicated no involvement during that phase. A rating of three indicated a high level of involvement. Two would be moderate and one would indicate that the group had only minor involvement.

The chart on the following page shows the percentage change between the involvement levels that were reported in the survey. Those above the horizontal mid-line experienced increased involvement while those below the line experienced decreased involvement during implementation relative to involvement during the development process.

Of all the changes noted in the chart on the next page, four mean changes are statistically significant based on a t-test (.10 alpha level). These are F - Logging and wood products industry, I - Grazing industry, N - Individuals and O - Others (on the table these are marked by asterisks). For purposes of this study, however, changes in participation level for each, assuming that the estimates of the planners were at least correct in direction, if not the degree, will be discussed (for complete statistical information see Appendix C).

Change in Participation Level Between Development and Implementation



Note: This chart represents only the change of each group's level of involvement relative to the earlier level for that same group.

The ranking or "score" shown below is based on the 0 to 3 scale mentioned above.

Code	Group Type	Average Score in Development	Average Score in Implementation
A	Local Government	1.26	1.37
B	State Government	2.16	2.19
E	Environmental	2.70	2.74
F	Logging/Wood Products	1.93	2.09 *
G	Tourism Industry	1.30	1.34
H	Mining Industry	1.36	1.27
I	Grazing Industry	1.11	1.27 *
J	Commercial Fishing	.21	.23
K	Hunting/Fishing	1.84	1.81
L	Recreation Groups	1.81	1.86
M	Native Americans	1.04	1.01
N	Individuals as a group	2.01	1.86 *
O	Others (specified)	.33	.49 *

While some groups exhibited a decrease, there is a general increase in scores. This is substantiated by the comments made by planners. They said in many instances that the public has been coming out more and more in the planning process. Such comments as "the public became educated in the Forest Planning process and now they are much more active" characterize a recurring theme among planners. The trend can be expected to continue. This trend follows what is described by Peters and Hogwood (1985) and in the earlier report by Downs (1972) when they describe the "issue-attention cycle". Their concept applied here would indicate that the advent of NEPA and NFMA heralded a period of increased public interest in natural resource involvement from which the implementation of forest plans is likely to be a chief benefactor by way of an aroused public.

The group types, listed previously, exhibited various changes in levels of participation between the two planning phases. The following pages contain discussions of those changes organized by group. The order in which they are discussed is merely that used in prior listings and does not imply importance of any of the groups. Where the survey findings were of limited importance, the groups were included with others so the emphasis would not be removed from those for which there are findings that warrant more discussion.

Local Governments

Local government showed the second highest relative increase in involvement between phases. As local interests such as tax revenues from timber sales and road construction and maintenance projects affecting local

residents appear, the salience of issues becomes higher on the local level. County and city governing bodies respond to the salient issues as must all political bodies. This increase was most noticeable in the two Eastern regions of the Forest Service where forests contain smaller acreages and there is much more "edge effect". That is, where private lands lie along forest lands and in-holdings are common. Perhaps this land pattern can explain a higher level of political salience that impacts local governments who in turn become involved with the Forests' implementation of projects under the forest plans.

State Governments

State governments showed increases in their participation but not as noticeably as did the local government. This trend and degree could be explained by the same reasons as for local government involvement only less impact due to the more removed nature of state government. In addition, the state government as a group, had a very high average level of involvement (2.16) in plan development and even slightly increased it into plan implementation. State governments typically have agencies such as a Department of Fish and Game that regularly monitor Forest Service planning and become involved consistently. They are prepared for this kind of activity and do it as a part of their normal operating activities. The reason for this is that states usually do not have a large land base but they do have responsibility for fish and game populations. The Forest Service, on the other hand, is responsible, not for the populations, but for the habitats. In order to protect and promote the populations of fish and wildlife the State agency is

constantly involved with what the Forest Service is doing on the habitat. This accounts for part of the relatively high level of participation in both planning levels. Other state agencies are similarly involved with forest planning and can be expected to follow this same pattern.

Environmental Groups

Environmental groups were difficult to classify. Undoubtedly, some planners classified some as recreation groups when they could also have been classified as environmental groups and vice versa. What is shown, however, from the study data, is that the environmental groups have easily the highest level of participation in both processes and have also shown an increase from the first phase to the second. Simply the site specific nature of implementation could be used to explain the increased level, however, the increase is minor. The Forest Service planners say environmental groups, as with industry groups, have not achieved what they wanted in plan development and are now using every effort to secure their objectives.

Environmental groups have expressed dismay with many of the forest plans. Citing national administration policy for the last 8 years, they felt in many cases that the Forest Service had missed an opportunity to do some good things on the National Forests. Environmental groups then began to gear up to take the battle to the courts and the Congress to achieve their goals (Hanson, 1986).

Part of this energy will certainly be focused on implementation of the forest plans. Survey figures and comments by planners indicate a very steady and continuing effort by these groups to remain involved with implementation.

Logging and Wood Products Industry

The wood products industry groups have not had a consistently high level of participation in planning activities, at least not in the NEPA-outlined public involvement approach. This was demonstrated in the ratings given to this group in the plan development phase. The trend, however, shows a significant increase in participation. The logging industry is increasingly utilizing the Forest Service processes to become heard. The 8 percent increase from plan development to plan implementation shows this. The comments from planners support this as well and stress the fact that industry people expected higher levels of harvest than the plans provided and now are getting involved to save what they see as the remaining harvest levels from further reduction in the face of concerns of environmental groups.

The forest industry has often relied on political rather than public means to secure their ends. In addition, they have enjoyed a decided industry leaning of Forest Service managers (Twight and Lyden, 1989). This bias has provided the wood products industry with supplies that they have relied on rather than becoming involved in the same way that other interest groups have. Now, with added pressures to reduce harvesting in many areas, this appears to be changing. We can expect more active wood products industry involvement in the future.

Mining Industry

The mining industry became less involved in plan implementation. While this industry showed some involvement in forest plan development or

implementation on 60 forests, the involvement went down on 12 forests while increasing on 6 between the two planning phases. This could be explained more easily than for some other groups since the mining interests run along historical or philosophical lines. The 1872 General Mining Act (30 U.S.C. as amended) which is essentially unchanged to this day, had the net effect of statutorily defining mineral extraction as the highest and best use of all federal lands (Dana and Fairfax, 1980). The Forest Service administers mining activities only in that it must provide the industry with access to claims so that miners can extract minerals. With other resources, the Service actively carries out programs but it is more reactive in the case of minerals. Forest planning, however, needed to develop standards and guidelines to govern the extraction of the various kinds of minerals. During development of those standards and guidelines the mining interests were expected to be very interested and involved because the forests were then developing policy toward granting access. There is less reason for mining interests to be involved during implementation because most projects focus on other resources.

Grazing Industry

The grazing industry shows a relatively low level of overall participation (using the nationwide average); however, looking at the data for the 5 western regions where rangeland is a major resource, it can be seen that the involvement is not minor at all. Actually, 51 forests showed some involvement of grazing industry proponents. Many forests said that the grazing industry involvement was high especially in the implementation phase. The grazing industry showed the largest increase between planning phases. Here we

have a group of people who are relatively independent and might not be expected to quickly join in a process as abstract as developing a forest's comprehensive plan which considers all resources and develops a mix. During implementation, however, when there are grazing allotments to be decided, this industry might be highly vocal in the process. On forests where the level of involvement changed between planning phases, 12 showed increases while only 3 had decreases. This is significant and shows a distinct increase in that industry's involvement level.

Commercial Fishing

Commercial fishing affects so few forests that it did not provide the study with more than a few data points and no change was noticed. In the forests in Alaska this industry is a much more active voice in forest planning. It also is often heard in the Pacific Northwest, an area which is not included in this study. What the forests do in and around the salmon-producing streams has the potential to impact the fish populations and to have long term impacts on fishing income. As a result, the fishing industry can be expected to be very vocal in plan implementation. Experiences with plan implementation in Prince William Sound on the Chugach National Forest have proven this out. The fishing interests were very active in both phases of the process and showed an increase in the implementation phase because they were very concerned about specific streams that were high value salmon-producers. Again, the specific nature of the decisions in implementation as opposed to plan development guided the behavior of an industry group in forest planning.

Tourism, Recreation, Hunting and Fishing Groups

An interesting observation can be made about the recreation and hunting and fishing group trends. While hunting and fishing groups showed a small decline in interest going into implementation, the recreation interests showed an almost identical increase. Both groups showed nearly identical numbers of forests showing increases as decreases. What might have happened is a confusion over what is meant by the two categories. It could be very difficult to separate a recreation group from a hunting or fishing group so the planners may have experienced some difficulty in answering these questions. If we combine the two categories, the results show that the level of involvement of our new combined recreation/hunting and fishing group is nearly the same for both phases of planning.

Tourism can be best grouped with recreation as well. While recreation interests are normally concerned with activities as they relate to people, the tourism industry looks at these activities as a business. This industry, as a group, has somewhat different motives than the recreation groups but they often share the same general goals. Their involvement did not change very much.

Native Americans

Native American groups showed a noticeable decrease in involvement after plan development was complete. Fifty-two forests reported some participation by Native groups. On the 12 forests that showed a change in the Native involvement between phases, 8 showed a decline while only 4 showed an

increase. This could be explained by a legal requirement. The National Forest Management Act specifically requires that Native tribes whose lands may be impacted must be notified. This was done during plan development and had the effect of automatically involving Native leaders. This is not a requirement in the implementation phase and during implementation, not all projects would impact Native lands so they would not necessarily be involved with this phase. This could explain the relative drop in involvement. It should not, however, be taken as a relative lack of interest, especially in sacred lands and lands adjacent to tribal lands.

Individuals

Survey participants were also asked to consider and rate the individuals involved with the forest planning process as if they were a group. Many people write to the forests and express concerns with the way the plans are developed without demonstrating affiliation with a larger group. They do, however, usually express a point of view that can be linked with that of a group. The participants in the survey in some cases probably lumped these commentors with the group that best matches their concerns. The individuals category had a fairly high average participation level. It was also one of three groups that made a statistically significant change between the plan development and implementation phases. In the case of individuals, the change in involvement was downward by 8 percent.

This drop in participation could be explained in part by comments that indicated that people in implementation were becoming wiser in the ways of the

process and were joining with groups in order to get their point across. This trend would tend to increase group participation while reducing independent participation. In addition, plan development covered much broader topical and geographical scope probably creating more interest, hence, more involvement by individuals. These observations are consistent with the data.

Others

Since the categories did not include all possibilities and this study was designed for use on all national forests, it was necessary to insert a category for "other" group types. When forests had important local groups that had high levels of involvement, they included those groups in this category if they did not seem to fit elsewhere. Some interesting group descriptions came out and, in some cases, the groups fell in this category if the planners could not decide between two already named groups; for example, environmental and recreation groups. Examples of groups that were mentioned are the following:

- Adjacent landowners group.
- ORV users.
- Recreation resident owners' association.
- Local citizens near ORV routes.
- Area watch league (named for the specific area they had concern about)

While small in numbers, participation of the groups showed a relatively large increase from plan development to plan implementation. This is consistent with comments by planners that, when people wanted to get involved

and be heard, they would find a group that could represent their needs. Often this was a new group. Local homeowners associations would be logical groups to begin to get involved with plan implementation and site specific projects. One planner said that the "NIMBY" group was coming out in implementation. NIMBY stands for "Not in my backyard." Plan implementation is likely to spawn many more new groups because, where plan development was much more nebulous, the implementation phase will occur in many peoples' "backyards".

Group Type -----> Group Behavior

The study looked at the relative involvement levels between groups as well as between planning phases. It would have been a little too much to expect the planners to estimate the relative rankings of all groups against each other so the survey only asked that they name the first, second and third ranking groups in terms of level of involvement in each phase. By combining these rankings, it was possible to develop a relative ranking for all groups across the nation. One limitation was the way in which the groups were named and the way that survey respondents interpreted those names. An example of this problem is as follows. A group called the Wasatch Watch League in Utah was named in one instance. Would this group be considered a recreation group or an environmental group -- or perhaps even a hunting and fishing or wood products industry group? Planners were expected to make these calls relying on their familiarity with the groups. It was difficult to find a better way of providing them with categories. The tables on the next page show how the various groups ranked in terms of level of involvement.

RELATIVE RANKINGS IN PLAN DEVELOPMENT INVOLVEMENT

Group Type	Relative Ranking
Environmental	1
Logging/Wood Products	2
State Government	3
Individuals as a group	4
Hunting/Fishing	5
Recreation Groups	6
Grazing Industry	7
Local Government	8
Mining Industry	8
Tourism Industry	10
Native Americans	10
Others (specified)	12
Commercial Fishing	13

RELATIVE RANKINGS IN PLAN IMPLEMENTATION INVOLVEMENT

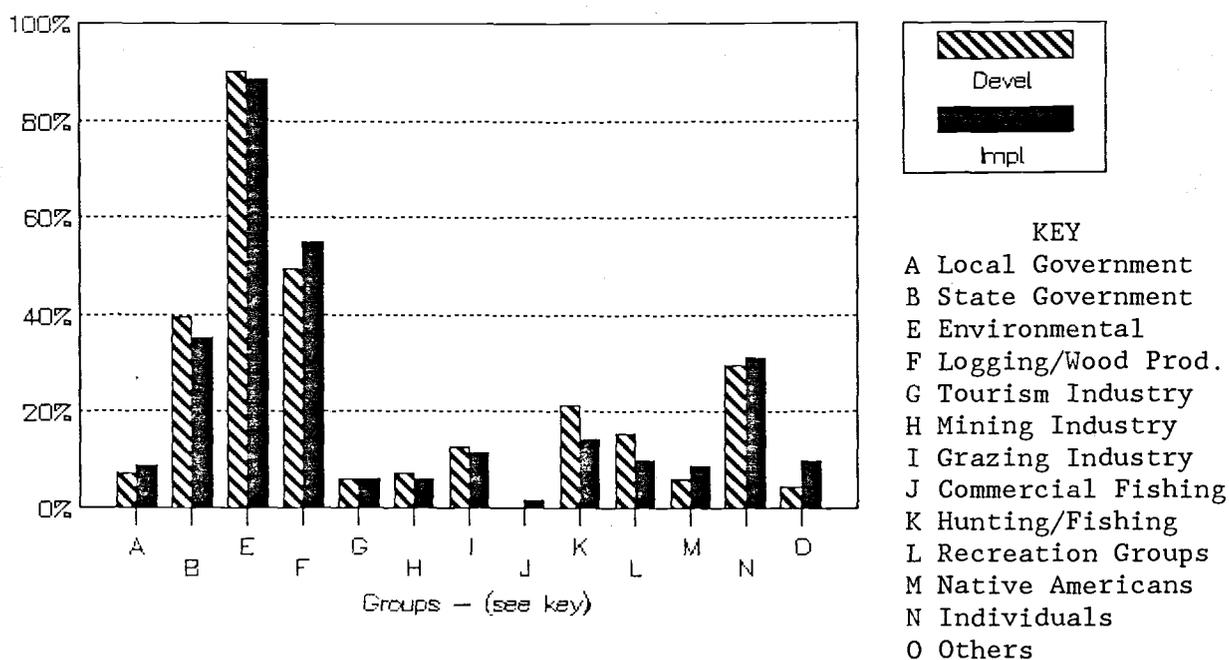
Group Type	Relative Ranking
Environmental	1
Logging/Wood Products	2
State Government	3
Individuals as a group	4
Hunting/Fishing	5
Grazing Industry	6
Recreation Groups	7
Others (specified)	7
Local Government	9
Native Americans	9
Mining Industry	11
Tourism Industry	11
Commercial Fishing	13

These rankings are based on nationwide averages of the numbers of times that the groups appeared among the top three. What may be the most active group on a specific forest (for example, commercial fishing) may be on the bottom of the list nationally.

Of some interest is the fact that there was relatively little change in the rankings of these groups between the two phases of planning. It appears to

be a somewhat stable mix of publics that are involving themselves with planning. While the earlier discussion indicated that some groups are increasing or decreasing in their levels of involvement, the overall picture is not changing substantially. The "Other" group showed a relatively major gain, going from 12th to 7th. This resulted from the changed noted on page 26. New groups are being formed by parties that have specific concerns that they need to vocalize. The chart below shows how the groups generally maintained their involvement between development and implementation.

Groups Ranking in High 3 in Participation



Some Comments from Planners on Group Behavior

In Appendix A (Summary of Results and Means and Frequencies Analysis) is a short summary of comments from planners to an open-ended question in the survey. Comments are compiled by region to give a flavor of what the planners are thinking in different parts of the country. Most of the comments are directed at explaining changes that planners have witnessed going from the development of the plans into the implementation phase.

These comments seem to reflect a sense of frustration with the lack of progress in satisfying the publics. There seems to be a sense that the consensus-building efforts during the plan development phase has not paid off. The planners, as a whole, seem to feel that the forests should have achieved more from the planning efforts and that they now should not be facing the same strength of opposition as they did during plan development.

CONCLUSIONS

The trends that were recognized from this study can be summarized with a few statements. The publics seem to be becoming more aware and capable of dealing with complex planning processes. They are learning how to join together to deal with these processes and to better focus their efforts. Many groups have come away from the forest planning process feeling that it did not serve them well. In these cases, the grudging consent that was hoped for did not materialize and those that have not resorted to other means can be expected to be involved in the future.

The broad general scope of the forest planning process may have lulled a few groups into expecting "business as usual" and, when they found that it was not to be, they have changed strategies and become actively involved in the implementation process to assure that they will be heard. The groups that helped the Forest Service with the first round of planning will continue to be involved. No group has given indication of bowing out and calling it done. Some may have expected that all the important issues would be decided with the close of the planning process when the final plans were published. This has not happened and, in fact, the planning process has stimulated even more interest in the forests than there was before.

Perhaps, with the advent of the implementation phase, there may be an even better chance to involve the publics in an even more meaningful way. Kaplan and Kaplan (1982) say that the degree to which a person comprehends a situation and understands what can be done can be crucial. Just the perception an individual has of a situation can make possible or eliminate the opportunity for participation. Plan implementation deals with individual projects and groups of projects that are much more easily comprehended than the forest planning process itself. Tools like FORPLAN and complex econometric studies are useful for the manager but they can tend to alienate the public. Because it is specific and targeted, plan implementation provides the opportunity to improve the quality of participation that is achieved in the future.

What is important for the Forest Service is that it learn more about its publics, the owners of the National Forests, and that it provide them with the best service possible in terms of management. To do this, it must effectively

communicate with them. The public needs to be truly involved in the management. Fazio and Gilbert (1986) said that the majority of public relations failures do not come from a blatant "public be damned" attitude. They come from the lack of ability to analyze issues, involve citizens in decisions and anticipate public reactions. The Forest Service can also fail because it is unable to move effectively to do what's needed to deal with conflict and ill feelings among its publics.

Interest groups have positions on issues. They will commonly come out with statements on their needs as they relate to resource management. Forest planners can usually determine what these positions are and it is not hard to find out if the plans are meeting them. But, this approach misses an important part of public participation. It misses the need to focus on interests -- what are the interests in the forests -- rather than on positions. This idea, expressed by Tipple and Wellman (1989), appears to be applicable to the problem of moving from plan development to implementation. In plan development we heard the positions. Forest planners know the stances of the groups on the various issues and they know how closely the plan comes to meeting those positions. They now need to look more at the groups themselves and why they have joined together into groups to know how to deal with these publics during implementation. In working out project level decisions, planners have the chance to get to the ground and work with publics to provide the best mix of goods and services that can meet the needs of the nation.

The Forest Service now must ensure that implementation has the support of its publics. The managers and planners need to expect continued involvement

and conflict. They must not envision any reduced level of public participation simply because the plans are completed. The Forest Service must develop new ways to identify new participants in implementation and then actively seek their involvement. It needs to learn to anticipate new issues during this phase while not expecting the old ones to disappear. The implementation phase should represent to the forests a new opportunity. New publics have become interested in the National Forests while others have achieved a new level of awareness of forest management. Those groups represent a deep well of interest, concern, information and assistance.

Any expectations of publics backing off from intense participation are inappropriate. Planners need to adapt or they will be forced to spend much of their energy dealing with appeals and litigation. The planning environment has changed and will not return to the way it once was. The "trust me" era is gone forever.

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APPENDIX A

SUMMARY OF RESULTS AND MEANS AND FREQUENCIES ANALYSIS

(A copy of this summary was sent to each of the participating forests)

The survey questionnaire used consisted of nine short response questions and one open-ended question which asked for additional comments. The following describes the various questions and provides the means and frequencies of the responses that were received.

Question 1: Your forest was selected because you have completed your FEIS and Forest Plan. However, a plan is not necessarily ready for implementation at that point. Indicate the status of your plan now by marking an "X" in the appropriate blank:

- a. 64 forests Area analysis or project implementation
(many forests responded by crossing out "area analysis, one stating that area analysis is not permitted after forest planning.)
- b. 1 forest Appealed and currently suspended from implementation
- c. 11 forest Being amended at this time
- d. 23 forests Other Explain Many responded said that they were doing both implementation and were amending and or dealing with appeals on their forests.

NOTE: Some respondents filled in more than one blank denoting that their forests are involved in more than one step currently.

2. Where is most of the implementation NEPA work being done on your forest?
(mark an "X" in one)

- a. Supervisor's Office 5 forests
- b. District Offices 64 forests

NOTE: 2 forests marked both spaces, indicating that some work was done at both levels.

3. How far is it between your SO and the nearest city of over 50,000 people?

Average = 72 miles (this can be zero)

Results:

<u>Distance from a town of 50,000 or larger</u>	<u>Proportion of Forests who Responded</u>
0 to 30 miles	37%
31 to 60 miles	14%
61 to 90 miles	19%
91 to 120 miles	11%
> 120 miles	19%

4. How large is that city? Avg. = 484,000 people (est. to within 20,000)

Results:

<u>Population of Nearest Major City</u>	<u>Proportion of Forests who Responded</u>
50,000 to 75,000	33 %
76,000 to 100,000	23 %
101,000 to 125,000	6 %
126,000 to 150,000	4 %
151,000 to 250,000	13 %
251,000 to 500,000	6 %
501,000 to 1 million	9 %
over 1 million	6 %

5. Public issues that are being raised in implementation of your plan are generally: (mark an "X" in one)

a. The same ones that came up in forest plan development 53 forests

b. New ones that were not brought up in plan development 13 forests

NOTE: 5 forests marked both spaces.

6. In general, the groups that are getting involved with your forest's plan implementation phase are (mark an "X" in one)

a. Larger than 15 forests

b. Smaller than 17 forests

c. About same size as 39 forests

those that were involved during development of your forest plan.

7. Mark an "X" in the box to indicate your estimate of the the level of involvement of these groups in the two phases of planning (a group that does not exist on your forest or was not involved should have no "X" entered):

	Level of Involvement			No Involvement *
	Minor	Moderate	High	
a. Local Government	//////	//////	//////	
Development phase ----->	51	16	2	2
Implementation phase --->	38	26	2	5
b. State Government	//////	//////	//////	
Development phase ----->	13	30	27	1
Implementation phase --->	12	27	30	2
e. Environmental Groups	//////	//////	//////	
Development phase ----->	5	11	55	0
Implementation phase --->	2	14	54	1
f. Logging & Wood Products Ind.	//////	//////	//////	
Development phase ----->	16	22	26	7
Implementation phase --->	12	19	32	8
g. Tourism Industry	//////	//////	//////	
Development phase ----->	35	21	5	10
Implementation phase --->	32	19	8	12
h. Mining Industry	//////	//////	//////	
Development phase ----->	34	17	9	11
Implementation phase --->	32	17	8	14
i. Grazing Industry	//////	//////	//////	
Development phase ----->	32	13	7	19
Implementation phase --->	25	14	12	20
j. Commercial Fishing	//////	//////	//////	
Development phase ----->	14	1	0	56
Implementation phase --->	13	0	1	57
k. Hunting/Fishing groups	//////	//////	//////	
Development phase ----->	19	29	18	5
Implementation phase --->	18	29	17	7
l. Recreation groups	//////	//////	//////	
Development phase ----->	23	28	17	3
Implementation phase --->	24	23	20	4
m. Native American groups	//////	//////	//////	
Development phase ----->	34	15	4	18
Implementation phase --->	34	11	5	21
n. Individuals (no group affil.)	//////	//////	//////	
Development phase ----->	14	27	25	5
Implementation phase --->	21	20	23	7
o. Others (specify) _____	//////	//////	//////	
<u>Note: A variety of groups</u>	//////	//////	//////	
<u>appeared here.</u>	//////	//////	//////	
Development phase ----->	5	3	4	59
Implementation phase --->	2	4	8	57

*When no level was marked, it was assumed to be a "zero" and the group was not involved with the planning phase.

8. Using the letters for the groups listed on the previous page, rank the three groups that were most heavily involved in **PLAN DEVELOPMENT** on your forest:

- a. Group with the highest level of involvement *
- b. Group with the second highest involvement *
- c. Group with the third highest involvement *

9. Now repeat question 8. for the groups in **PLAN IMPLEMENTATION**:

- a. Group with the highest level of involvement *
- b. Group with the second highest involvement *
- c. Group with the third highest involvement *

NOTE: For Questions 8 and 9 I have summarized the results in terms of the percentages of forests that place the various groups into the top three or top two categories of participation levels.

Dev.	Impl.				
Q.8	Q.9				
<u>7</u> %	<u>8</u> %	of respondents ranked	<u>loc. gov't</u>	first, second or third.	
<u>39</u> %	<u>35</u> %	of respondents ranked	<u>state gov't</u>	first, second or third.	
<u>90</u> %	<u>89</u> %	of respondents ranked	<u>environmental</u>	first, second or third.	
<u>49</u> %	<u>55</u> %	of respondents ranked	<u>logging</u>	first, second or third.	
<u>6</u> %	<u>6</u> %	of respondents ranked	<u>tourism</u>	first, second or third.	
<u>7</u> %	<u>6</u> %	of respondents ranked	<u>mining</u>	first, second or third.	
<u>13</u> %	<u>11</u> %	of respondents ranked	<u>grazing</u>	first, second or third.	
<u>0</u> %	<u>1</u> %	of respondents ranked	<u>comm. fish</u>	first, second or third.	
<u>21</u> %	<u>14</u> %	of respondents ranked	<u>hunting/fishing</u>	first, second or third.	
<u>15</u> %	<u>10</u> %	of respondents ranked	<u>recreation</u>	first, second or third.	
<u>6</u> %	<u>8</u> %	of respondents ranked	<u>Native Americans</u>	first, second or third.	
<u>30</u> %	<u>31</u> %	of respondents ranked	<u>individuals</u>	first, second or third.	
<u>4</u> %	<u>10</u> %	of respondents ranked	<u>"others"</u>	first, second or third.	

Dev.	Impl.				
Q.8	Q.9				
<u>4</u> %	<u>6</u> %	of respondents ranked	<u>loc. gov't</u>	first or second.	
<u>25</u> %	<u>23</u> %	of respondents ranked	<u>state gov't</u>	first or second.	
<u>83</u> %	<u>76</u> %	of respondents ranked	<u>environmental</u>	first or second.	
<u>38</u> %	<u>32</u> %	of respondents ranked	<u>logging</u>	first or second.	
<u>1</u> %	<u>3</u> %	of respondents ranked	<u>tourism</u>	first or second.	
<u>6</u> %	<u>3</u> %	of respondents ranked	<u>mining</u>	first or second.	
<u>4</u> %	<u>8</u> %	of respondents ranked	<u>grazing</u>	first or second.	
<u>0</u> %	<u>1</u> %	of respondents ranked	<u>comm. fish</u>	first or second.	
<u>3</u> %	<u>6</u> %	of respondents ranked	<u>hunting/fishing</u>	first or second.	
<u>7</u> %	<u>6</u> %	of respondents ranked	<u>recreation</u>	first or second.	
<u>3</u> %	<u>6</u> %	of respondents ranked	<u>Native Americans</u>	first or second.	
<u>17</u> %	<u>17</u> %	of respondents ranked	<u>individuals</u>	first or second.	
<u>3</u> %	<u>7</u> %	of respondents ranked	<u>"others"</u>	first or second.	

10. Please add any comments that further characterize changes you have observed between Public Involvement in plan development and plan implementation?

THE FOLLOWING IS A LIST OF PARAPHRASED COMMENTS BY REGION THAT WERE SUPPLIED BY PARTICIPANTS TO QUESTION 10.

Region 1 - NORTHERN REGION - MISSOULA

- More polarized publics during plan implementation.
- Industry has turned to political arena for help.
- Issues have become more distinct.
- Public is becoming more involved at the project level when directly impacted.
- Neither side got what it wanted in planning (plan development phase).
- Environmentalists are putting pressure on project implementation while development people are going political.
- Environmental groups are cooperating more with each other.
- Large city media has taken the environmental side. They are more persuasive than local radio.
- General public is becoming more sympathetic to the environmentalists' side.
- While issues have really not changed, there are more facets to each issue.
- During dev. the P.I. was straightforward; now more into "legal" means.
- Players are changing and some agreements/understandings are being lost.
- Big decline in public interest since plan finished.
- Concerned indiv. tend to find a group that can push their point of view.

Region 2 - ROCKY MTN. REGION - DENVER

- Publics have realized the importance of the plan.
- In plan dev. the roads and harvests were the only big issues; now no activity is immune to controversy.
- Plan dev. was "just another plan by the bureaucrats"; in impl. they realize that the plan is having an impact on them.
- Different individuals are involved now, many with diff. more site spec. concerns.
- Env. groups are losing public support because they are intransigent on issues.
- We were so early with our plan that the publics didn't know what it was; they are getting ready for revision tho'.

Region 3 - SOUTHWEST - ALBUQUERQUE

- Lots more involvement since the final plan put out. Everyone got excited.
- Coalition of Native Amer. and hispanics were involved during plan dev. but they have split during implementation.
- Little threat or impact was perceived in the plan dev. phase; now the publics are becoming much more interested.
- Issues becoming more specific; some that we thought were resolved, were not.
- Public involvement must improve during the next go around or the FS will lose more public support than it already has lost.
- Participants have gained sophistication, willingness to work together, and there is less polarization and rhetoric now.
- Involv. during impl. definitely tied to "whose ox is being gored".

Region 4 - INTERMOUNTAIN - OGDEN

- We are receiving a whole lot more interest in implementation.
- Grazing interests are more involved in impl. (permittees, assn's and lawyers.)
- Some groups, especially environmental, have much more input due to the specificity of project implementation.
- Interest groups are forming a land management coalition to work with Forest on plan impl.
- There is a trend for groups to become more involved now since they feel that their interests were ignored in plan dev.
- People are willing to put their money where their mouths are - getting lawyers.
- Even tho' we tried, the grazing interests did not get involved until impl.; now they are getting ready to sue.

Region 5 - CALIFORNIA - SAN FRANCISCO

- Public's understanding of the plan has incr. greatly during impl.
- Next time we should determine the impl. issues earlier to avoid the problems with people's heightened concerns when proj. are specific.
- Our forest is isolated so the same groups that worked on dev. are in impl.
- Forest planning process has taught people how to appeal decisions.
- People feel they have more power to disrupt the FS now that the plan is out.
- Appellants didn't put all their cards on table during planning; now they are appealing with info. and comments they did not bring out before.
- NIMBY's (not in my backyard) are most influential during impl.

Region 8 - SOUTHERN - ATLANTA

- A lot of form-type letters were used by people who had no further involvement.
- PI increased during impl. due to appellant's activities and FS aggressive public involvement activities.
- Pressure and delay tactics are being used by environmental groups through the appeals process.
- Timber ind. is more concerned now and let us know that they will become more involved in the future (than they were in plan dev.).
- Diversity of interests has increased much since development over.

Region 9 - NORTHEASTERN - MILWAUKEE

- More publics are becoming aware of the plans and the integrated imple. process.
- Environmental groups "held back" during plan dev.. They were being deceptive.
- Env. groups were interested all along; other user groups did not and are now getting much more interested since they now know what the plan will do.
- There is increased participation of those not happy with the plan.
- Dev. saw more involv. by env. and logging groups; implementation has more involvement by individuals (locals) tourism groups, state gov't. (commerce.)
- Env. groups stay involved no matter what; others get involved based on their own specific interests.

COPY OF COVER LETTER THAT WENT TO THE 78 FORESTS

Survey Participant:

Thank you for becoming part of my study of public participation in forest planning. You will find that the following survey questionnaire to be quite clear and easy to complete. I hope that the value of the information it provides will make your time well spent.

There are only 10 questions. You will note that the key question in terms of my study is Number 7. In it, I would like you to spend a little time thinking about the levels of participation of groups (and individuals as a group) in your forest's planning efforts. If a group had no involvement in either development or implementation, leave that row blank. Rate each group for both plan development and plan implementation based on three broad levels -- minor, moderate and high. These are characterized as follows:

- Minor** - The group was represented only briefly in the process and was not a consistent commentor.
- Moderate** - The group was noticed in the process and consistently commented on products of the process. It was not, however, a dominant force in the planning process.
- High** - The group was consistently represented and played a major role in the process. (Note: "Individuals" normally would be listed as "high".)

To assure consistency in the results, there are two key definitions that you will need to adhere to in answering the survey questionnaire. These may not quite coincide with your own idea of phases of planning but, for purposes of this survey, please use them:

Plan Development phase = All steps taken in development of your final plan and any appeal or remand work done after its completion.

Plan Implementation phase = All steps taken to implement or amend the final version of your forest plan (incl. area analysis, proj. impl. etc.).

You could complete and return this survey fastest if you use the DG method described below. If this is not convenient or comfortable for you, however, use the hardcopy method:

A. DG Method:

1. File this as a DG document you can edit,
2. Enter your responses and
3. Mail the new document to me on the DG to my address:
R.Wilhelm:R06F12A or

B. Hardcopy method:

1. Print this document out,
2. Enter your responses on paper and
3. Mail it to me at the following address:
R. Wilhelm
3125 NW Taft
Corvallis, OR 97330

To have your responses included in my study, please return it to me as soon as you possibly can. If you have any questions or need further clarification

please send me a DG message and either relay your question or leave a phone number for me to call you back.

Once again, thank you for being a part of this study. Keep a copy of this questionnaire and I will send you a summary of the results within about a month.

Bob

APPENDIX B

List of the 88 National Forests that had Plans completed ast of Dec. 7, 1988.

<u>REGION / FOREST</u>	<u>Date of Release</u>
NORTHERN REGION - R1 (13)	
* Beaverhead F02 -----	(4/9/86)
* Bitterroot F03 -----	(9/30/87)
* Idaho Panhandle F04 -----	(9/17/87)
* Clearwater F05A -----	(9/23/87)
* Custer F08 -----	(6/10/87)
* Deerlodge F09 -----	(9/23/87)
* Flathead F10 -----	(1/22/86)
Gallatin F11 -----	(9/23/87)
* Helena F12 -----	(5/28/86)
* Kootenai F14 -----	(9/14/87)
* Lewis & Clark F15 -----	(6/4/86)
* Lolo F16 -----	(4/8/86)
Nezperce F17 -----	(10/8/87)
ROCKY MOUNTAIN REGION - R2 (12)	
Bighorn F02 -----	(10/4/85)
* Black Hills F03 -----	
* G.M.-Unc.-Gunn. F04 -----	
* Medicine Bow F06 -----	(11/20/85)
* Nebraska F07 -----	
Rio Grande F09 -----	
* Arapaho-Roosevelt F10 ---	
Routt F11 -----	
* Pike-San Isabel F12 -----	
San Juan F13 -----	
* Shoshone F14 -----	(2/27/86)
* White River F15 -----	
SOUTHWESTERN REGION - R3 (11)	
* Apache-Sitgreaves F01 ---	(10/30/87)
Carson F02 -----	(10/31/86)
* Cibola F03 -----	
* Coconino F04 -----	(8/28/87)
Coronado F05 -----	(8/4/86)
* Gila F06 -----	(11/21/86)
* Kaibab F07 -----	(4/15/88)
* Lincoln F08 -----	(10/31/86)
* Prescott F09 -----	(8/4/87)
* Santa Fe F10 -----	(9/4/87)
Tonto F12 -----	(10/31/85)

INTERMOUNTAIN REGION - R4 (14)

Ashley F01 ----- (10/8/86)
* Caribou F05 -----
* Challis F06 ----- (6/3/87)
* Dixie F07 ----- (9/2/86)
Fishlake F08 ----- (6/13/86)
* Humboldt F09 ----- (8/19/86)
* Manti-LaSal F10 ----- (11/5/86)
* Payette F12 ----- (5/6/88)

* Sawtooth F14 ----- (9/16/87)
* Targhee F15 ----- (10/4/85)
* Toiyabe F17 ----- (6/23/86)
Uinta F18 -----
* Wasatch-Cache F19 -----

PACIFIC SOUTHWEST REGION - R5 (7)

* Angeles F01 ----- (11/6/87)
* Cleveland F02 ----- (6/2/86)
* Inyo F04 ----- (8/12/88)
* Los Padres F07 ----- (3/22/88)
* Plumas F11 ----- (8/26/88)
* Sequoia F13 ----- (2/25/88)
* LTBMU F19 ----- (12/2/88)

PACIFIC NORTHWEST REGION - R6

None

SOUTHERN REGION - R8 (15)

* Nat'l For. in Alabama F01 (3/10/86)
* Daniel Boone F02 -----
* Chattahoochee-Oconee F03
Cherokee F04 ----- (4/1/86)
* Nat'l For. in Florida F05 (1/6/86)
* Kisatchie F06 -----
* NF in Mississippi F07 ---
* George Washington F08 --- (9/9/86)
* Ouachita F09 ----- (4/1/86)
Ozark-St Francis F10 ---- (7/29/86)
* NF in No. Carolina F11 -- (4/16/87)
* Francis Marion/Sumter F12
* Texas F13 ----- (5/20/87)
* Jefferson F14 ----- (10/16/85)
Caribbean F16 ----- (2/10/86)

NORTHEASTERN REGION - R9 (14)

* Chequamegon F02 ----- (8/11/86)
Chippewa F03 ----- (6/2/86)
* Huron-Manistee F04 ----- (7/16/86)
Mark Twain F05 ----- (6/23/86)
* Nicolet F06 ----- (8/11/86)
* Ottawa F07 ----- (10/14/86)
* Shawnee F08 ----- (11/24/86)
* Superior F09 ----- (6/6/86)
* Hiawatha F10 ----- (10/24/86)
* Wayne Hoosier F11 ----- (1/4/88)
* Allegheny F19 ----- (4/24/86)
* Green Mountain F20 ----- (1/15/87)
* Monongahela F21 ----- (7/7/86)
* White Mountain F22 ----- (4/30/86)

ALASKA REGION - R10 (1)

* Chugach F04 ----- (7/27/84)

Dates in parentheses indicate Record of Decision date. Not all are known.
* Indicates forests that returned survey questionnaires.

APPENDIX C

Statistical Analyses

A. Results from regression analysis. Group participation level scores were regressed against the logarithm of the populations of the nearest large city (defined as larger than 50,000 population). Below are the values obtained from that analysis.

<u>Group Type</u>	<u>P-Value</u>	<u>F Statistic</u>	<u>Coefficient of Determination R^2</u>
Local Government	.53	.41	.01
State Government	.35	.87	.01
Environmental Groups	.89	.017	.00
Logging/Wood Prod. Ind.	.007	7.75	.10
Tourism Industry	.13	2.32	.03
Mining Industry	.52	.43	.01
Grazing Industry	.71	.14	.00
Commercial Fishing Ind.	.42	.67	.01
Hunting/Fishing	.63	.23	.00
Recreation Groups	.92	.01	.00
Native Americans	.53	.4	.01
Individuals as a group	.97	.002	.00
Others	.66	.2	.00

B. The following are the results of the one-sample paired data tests of significance discussed on page 18 of the text. They are based on 69 degrees of freedom (n = 70 forests). The alpha level was .1.

<u>Group Type</u>	<u>Average Score Change</u>	<u>Std. Deviation</u>	<u>t-Statistic</u>	<u>Significance Level</u>
Local Government	.11	.58	1.65	.10
State Government	.03	.82	.29	.77
Environmental Groups	.04	.73	.49	.63
Logging/Wood Prod. Ind.	.16	.65	2.02	.05
Tourism Industry	.04	.55	.65	.52
Mining Industry	-.09	.50	-1.42	.16
Grazing Industry	.16	.53	2.49	.02
Commercial Fishing Ind.	.01	.12	1.00	.32
Hunting/Fishing	-.03	.61	-.40	.70
Recreation Groups	.04	.55	.65	.52
Native Americans	-.03	.51	-.47	.64
Individuals as a group	-.16	.65	-2.02	.05
Others	.16	.69	1.89	.06