Social acceptability of alternatives to clearcutting in southeast Alaska: An exploratory study of the factors affecting judgement

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Social Acceptability of Alternatives to Clearcutting in Southeast Alaska:

An exploratory study of the factors affecting judgement

by

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Timber harvest on the Tongass National Forest in Southeast Alaska has long been controversial. With the closing of the region’s last two pulp mills, and the end of long-term timber contracts, logging on the nation’s largest National Forest is entering a new era. Research has clearly demonstrated that the public does not favor clearcutting as a timber harvest method, but the types of alternative timber harvests that are socially acceptable are largely unknown. Among alternative timber harvest systems, there appears to be considerable variation of ecosystem and socioeconomic effects that people take into consideration when making a judgement.

The purpose of this study was to examine the effects of a variety of silvicultural treatments in Southeast Alaska, including the public responses to the appearance and other consequences resulting from a range of experimental harvests at Hanus Bay. Without a better understanding of why people support or oppose timber harvest treatments, land managers will continue to be challenged in justifying management actions on public lands. Among people’s complex and sometimes contradictory desires regarding forest lands, there is a vital need to supplement our understanding of how people come to judgement over the extent, type, and intensity of forest treatments.

Interpretation of research findings has identified informants making decisions on social acceptability based on outcomes that support shared community values, sustaining lifestyles and appearance. What is desirable and preferred at the individual level can be subsumed by an appreciation of the Southeast Alaskan context, such that judgements consider sustainability for community integrity. Achieving community integrity will require a compromise between all forest user groups over the spatial landscape. There is a shift taking place in the forest to a new, more holistic natural resource paradigm that informants believe may be found in the middle ground. The middle ground is where timber harvesting has a legitimate role to play in the sustainability of community integrity, but must not jeopardize an Alaskan lifestyle that is dependent on commercial, sport, and subsistence goods and services from the natural capital of the forest environment.

The task to finding acceptable harvesting strategies may lie with transactive processes that are on-going and collaborative, since informants identified achieving a modest level of timber harvest output occurs within a geographic and social context with other forest uses.
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Chapter 1

Introduction

The characteristic *esprit de corps* of the Forest Service remains strong, but its policies are constantly challenged by special interest groups motivated by a range of economic and philosophical assumptions. The challenges often evolve into political campaigns in which the contending parties sometimes distort the facts of the past and the present to serve their particular needs and ambitions. The issues are often blurred by public servants themselves, whose goals always include obtaining the budgetary appropriations necessary to maintain current activities and provide additional "good work." There are, of course, regional variations to this profile. In Alaska, the great land and resource issues of the past decade have drawn a level of public attention to the Forest Service that would have been scarcely imaginable in earlier times – Ronald J. Fahl, 1994, Forest History Society

Ecosystem management carries with it the connotation of managing to meet social desires within ecosystem constraints. Forest managers have come to realize that a key determinant of meeting social desires is not simply achieving a given level of output, but obtaining that output in ways that are acceptable to the public. We know that clearcutting is not an acceptable practice to many Americans, (Rudzitis et al. 1995, Roper 1994, Shindler et al. 1993), but we know less about how people evaluate other silvicultural systems.

Forest managers possess only a limited understanding of people’s underlying reasons for opposing timber harvest treatments such as clearcutting. Even with minimal recognition of the biophysical effects of timber harvest, people have shown negative responses to clearcuts on public lands (Rudzitis et al. 1995). This study has been designed to examine the effects of a variety of silvicultural treatments in Southeast Alaska, including the public responses to the appearance and other consequences resulting from a range of experimental harvests. Without a better understanding of why people support or oppose timber harvest treatments, land managers will continue to be challenged in justifying management actions on public lands. The following investigation provides an exploration of those underlying properties/factors that affect people’s judgements on the acceptability of alternative timber harvesting in Southeast
Alaska. The study was developed to understand the effects of different forest management practices. A critical component of the larger Alternatives to Clearcutting (ATC) study is the research directed toward people’s values and expectations regarding the management of the Tongass National Forest. Among people’s complex and sometimes contradictory desires regarding forest lands, there is a vital need to supplement our understanding of how people come to judgement over the extent, type, and intensity of forest treatments. In short, the following ATC social research process was conducted to learn about Alaskan concerns, desires, values and the levels of acceptability for a mix of silvicultural techniques (Allen 1996).

To experience Southeast Alaska is to appreciate great interplay between forest, bog, stream, sky, and sea. Timber and the Tongass are regarded as the marriage that built Southeast Alaska, a relationship that opened the forest for the resource extraction and development of a great archipelago. The social context in Southeast Alaska is unique because of the area’s geographic isolation, the extraordinary biophysical setting, and the dominance of the Tongass National Forest in the pattern of land tenure. The Tongass National Forest is subject to its own authorizing statutes - (e.g., the 1980 Alaska National Interest Lands Conservation Act [ANILCA], and the 1990 Tongass Timber Reform Act [TTRA]) -, both of which were intended to bring peace, stability, and a degree of certainty into the forest, and to the people who live adjacent to the forest (TLMP 1996). Yet there is still tremendous disagreement about appropriate management activities on the forest, which is played out in settings from local cafes in Sitka, Alaska to the halls of the United States Congress.
Within the context of forest management in Southeast Alaska the issue of clearcutting and traditional forestry takes on added significance, as it remains the dominant harvest method on both the Tongass National Forest, state and private lands throughout the region. Over the course of fiscal years 1997 and 1998, 5,549 acres were harvested on the Tongass National Forest; of this total, 4,317 acres were clearcut – 78% (TRACS data 1999). Between 1983 and 1995, 52% of the area’s timber harvest volume came from Native Corporation Lands, 45% from the Tongass, and 3% from other ownerships (USDA 2000).

Southeast Alaskans share many of the national public’s concerns about the practice (Roper 1994), as reflected by 1996 and 1997 referendums in Sitka, Alaska on a local policy to prohibit clearcutting in nearby areas on private lands. The measures failed both times, but the margin of defeat was narrow enough to demonstrate that clearcutting is a divisive social issue in that Alaskan community. Other indicators of the issues’ magnitude include public comments received by the Forest Service on their proposed management actions. For example, a summary of public comments on the Revised Draft Environmental Impact Statement (RSDEIS USDA 1996) for the Tongass National Forest plan concluded the following -

Almost all of those who commented on harvest methods were opposed to the continuation of clearcutting in the Tongass National Forest ... Commenters found clearcuts unappealing and unsightly ... others stated clearcutting jeopardizes the natural resources of the Tongass and their subsistence, commercial, and sport use of them ... They cited threats to fish and wildlife, specifically mentioning negative effects to coastal brown bears, wolves, and salmon (USDA Forest Service 1996).

The ATC study is intended to assist natural resource managers in choosing management alternatives by providing essential information on the costs and benefits of adopting alternative silvicultural systems. To achieve this intent, the research team is
examining biological, physical, economic and social responses within an integrative
research framework (McClellan 1997). Alternative silvicultural systems have many
potential benefits, including sustainable timber harvests, protection of fish and wildlife
habitat, maintenance of biological diversity, maintenance of slope stability, reduction of
visual impacts, and greater social acceptance of commodity production (ATC Study Plan
1994).

Guiding questions

This study is an exploratory process designed to uncover new, innovative, and
unique approaches to understand the causal network affecting people’s judgements about
alternative timber harvest methods. It will provide forest managers new ideas to address
timber management in public land settings where there is strong opposition to widespread
clearcutting of forests. Central to understanding people’s judgement of acceptability are
some basic guiding questions that arose from previous research on social acceptability in
Southeast Alaska (Shindler, Peters, and Kruger 1996). Assertions and concerns that
clearcutting and even-aged management are unacceptable due to their effects on other
valued resources, has led to the following questions:

- How important is the appearance of a harvested area on people’s judgement of acceptability?
- How important is the amount of timber harvested on people’s judgement of acceptability?
- How important is the ability of a forest to provide for deer productivity on people’s judgement
  of acceptability?
- How important is the ability of a forest to provide for fish productivity on people’s judgement
  of acceptability?
- How important is biological diversity and maintenance within a forest on people’s judgement
  of acceptability?
- How important is the amount of damage left to the remaining forest after harvest on people’s
  judgement of acceptability?
- What, if any hierarchy exists among factors that affect judgement of acceptability?
These questions were explored by embracing an experimental methodology which provided a visually engaging, rational menu of information displaying cause and effect consequences of choices and trade-off implications for eight uneven-aged experimental timber harvest treatments (see Appendix G). The research concentrated on one existing case where alternative silvicultural treatments have been applied – the Hanus Bay, Alaska site on the northeast corner of Baranof and Catherine Islands. This site is approximately twenty-five air miles northeast of Sitka, Alaska.

**Thesis Organization**

The second chapter, entitled Social Acceptability Framework, explores the origin of social acceptability as a field of study, its concept, and theoretical framework. It looks at the definition for acceptability, how judgements are organized, and the ‘place-based’ theories and propositional bases that will be explored within this thesis. As well, some of the literature relevant to the social acceptability concept will be explored.

The third chapter, entitled Methodology, addresses the qualitative research method, how the experimental methodology was conceived and the needs identified by the literature and research for the development and experimentation with social research methodologies to properly investigate the social acceptability concept. It describes the research approach taken, the research operation and explains the key informant interview process. Finally, there is a description of the three-part analysis procedure followed in the analysis of the textual data and a description of the overall sample of informants.

The fourth chapter, entitled Findings, is a synthesis organized around the guiding theme questions, and the concerns, desires and values for the Tongass National Forest held by residents. Theme question synthesis describes associated attitudes, beliefs
and values held by the overall sample of twenty-seven informants in this study. These findings provide a context for how the residents of the Chatham Area view past, existing and proposed forest management in Southeast Alaska, which is important knowledge to have when ‘noticing and thinking’ about the factors affecting social acceptability judgement of alternatives to clearcutting. Following theme question findings, I present the findings for the six guiding questions and the ‘acceptability’ levels for the eight experimental harvest treatments at Hanus Bay, Alaska. Findings stay true to the data by providing their words in context.

The fifth chapter, entitled Discussion, will interpret the findings building upon the complex nature of acceptability, and examine the formation of judgement for the range of alternative harvest techniques from two conceptual perspectives: (1) Shindler and Brunson’s multiple propositional base, and (2) the ‘place-based’ framework. As well, the key area of commonality within the overall sample will be illuminated and related back to the two conceptual perspectives.

The sixth and final chapter quickly reviews the factors affecting judgement and discusses a promising methodology and it potential contributions to managers for developing community-based discussions of environmental values. Finally, it presents future research opportunities, directions and ends with a closing statement.
Chapter 2

Social Acceptability Framework

Origin of the social acceptability concept

The USDA Forest Service’s New Perspectives program was described as an initiative to develop scientifically sound and socially acceptable forestry for the future (Salwasser 1990). The program of New Perspectives evolved into ecosystem management, which has been called “a multiple-use philosophy built around ecological principles, sustainability, and a strong land stewardship ethic, with a better recognition of the spiritual values and the natural beauty of the forests” (Robertson 1991). As Mark Brunson (1993) has observed, this implies ecosystem management is intended to move beyond general biology towards making forestry socially acceptable, as well as scientifically sound. Unfortunately, there is an equal amount of debate on the subject of acceptability as there is on sound science. George Stankey and Roger Clark (1991) conducted a problem analysis for the social component of New Perspectives and determined “there is an inadequate understanding of what constitutes acceptability with regard to the practice of New Perspectives and of the associated impacts of these differing conceptions.”

A substantial amount of learning has taken place since the early 1990’s as a result of the efforts of many social scientists. In 1992 a workshop was held by the Consortium for Social Values of Natural Resources, an interagency cooperative based in the Pacific Northwest, to address the lack of understanding identified by Stankey and Clark. Out of the workshop emerged a definition for the social acceptability concept, bringing to light many of the problems that surround the issue (Shindler and Brunson 1999). A product
from the workshop, which has assisted other research, is a definition for social
acceptability crafted by Mark Brunson (1996a) -

_Social acceptability in forest management results from a judgemental process by which
individuals (1) compare the perceived reality with its known alternatives and (2) decide
whether the "real" condition is superior, or sufficiently similar, to the most favorable
alternative condition. If the existing condition is not judged to be sufficient, the individual
will initiate behavior — often, but not always, within a constituency group — that is believed
likely to shift conditions toward a more favorable alternative._

The research technique in this investigation was able to present "real" conditions on the
forest by using a rational menu of information that displayed six consequences, which
result from harvesting timber. Informants were able to engage in the judgemental process
described above, and revealed which treatment was the most favored (or most acceptable)
alternative condition.

Brunson (1996b) has stated that acceptability judgements are made at the
individual level, but are susceptible to group influences and provide a motivation for
group behaviors. As a result of the group influence, social acceptability can be expressed
as an aggregate form of shared judgements formalized by an identifiable and politically
relevant segment of the public (Shindler and Brunson 1999). Acceptability is further
complicated by place-based or a situationally specific context. This would imply that
those citizens who are on the front lines of forest plans or proposed actions will be the
first to pass judgement as a result of how the action (or actions) will effect themselves,
their families, their communities, and the ecological environment (Shindler and Brunson
1999). The influence of the actions may cause a political reaction, validated by the
average citizen joining an interest group (or groups) or becoming active in the political
process of decision-making.
**Theoretical framework**

The place-based or situationally specific framework has recently been argued as an important concept that needs to be addressed in our evaluation of environmental policies. Bryan Norton and Bruce Hannon (1997) have explored aspects of the ‘place-based’ or ‘sense of place’ framework, and argue it may provide the basis for a new approach to environmental values. They suggest the place-based approach is anchored on an empirical hypothesis that place orientation is a feature of all people’s experience of their environment (Norton and Hannon 1997). They postulate a general concept of sustainability may be based on a local commitment of citizens to protect their natural and cultural heritage. Norton and Hannon (1997) propose a theory of environmental valuation that is based on a commitment to place. Their theory suggests a need for a re-tooling of natural resource planning and policy formulation, which can be facilitated by using scientific-conceptual models that are informative to the lay person, that work towards advancing a sustainability development pathway from the bottom up. They suggest this will require natural resource managers to communicate to the public and simultaneously learn from the public, in the development of locally based models for the articulation of local values.

As well, Williams (1995) has observed an ecosystem is a kind of place; socially created by conferring a particular kind of meaning on some piece of the landscape. He states the new ecosystem management paradigm gives recognition to the idea that the landscape (place) carries a broad range of meanings, where these meanings can vary widely across individuals and social groups. In essence, “the heart of ecosystem management is to guide decisions affecting a place using a rich understanding of its
natural and cultural history – i.e., its context” (Williams 1995). Williams postulates ‘places’ must be discovered empirically, and ecosystem managers will likely need comparatively more social input at a local level. As a result of an extensive literature review, Williams suggests the public can identify and classify land units that hold varied and often intangible meanings. He suggests open public discussion is important because traditional forms of public input and planning (e.g., letter counting or poll taking) are not the same as “working through” or “coming to public judgement.” To best achieve this movement to working through the issues, a transactive or collaborative approach may be needed.

Shindler and Brunson (1999) have continued to research the social acceptability question beyond their previous, more focused studies, and have recently undertaken a problem analysis identifying nine propositions on acceptability. The ATC social study provides evidence in support of propositional statements #3, #4, #6, #8, and #9, with the other statements being mentioned incidentally without frequency or strength. The nine propositions are -

**Proposition #1:** Conditions that arise as a result of “natural” causes are almost always accepted.

**Proposition #2:** People judge forest settings not only by what is there, but also why it is there.

**Proposition #3:** When feasible alternatives exist, acceptability depends on the fairness as well as the desirability of those alternatives.

**Proposition #4:** Acceptability judgments are based on information and knowledge that comes from a variety of sources.

**Proposition #5:** While many factors influence judgements of forest practices and conditions, acceptability ultimately depends on personal observations of the outcomes.

**Proposition #6:** Acceptability depends upon the level of public trust in natural resource agencies and in the process by which decisions are made.
**Proposition #7** Acceptability depends upon the perceived risk associated with a condition or practice.

**Proposition #8:** Acceptability is judged within both geographic and normative contexts.

**Proposition #9:** Management practices are more acceptable when people believe they can achieve multiple objectives (i.e., providing products for society while maintaining natural conditions).

This study does not suggest propositional statements #1, #2, #5, and #7 are not relevant to the concept of social acceptability in Southeast Alaska, only that they were not salient factors within the textual data. This may be accounted for by the constraints placed on the research process through its use of semi-structured interviews, where the bulk of the interview was guided by a protocol of written questions that were asked aloud. Simply, the protocol may have inhibited informant’s leeway to elaborate or bring up topics of discussion that would have illuminated these four propositions. As well, the research design did not allow for the type of exploration between the researcher and informant that would be needed to allow for the emergence of data to support these propositions. For example, Proposition #5 could not be explored since the mutual construction of the scene under study did not take place in the forest on the ground, within the individual stand-level treatments. Informants were not placed in a position where they would be able to make personal observations of the outcomes.

**Studies relevant to the concept of social acceptability and research in Southeast Alaska**

The question of socially acceptable forestry is a driving issue and of increasing concern to forest managers. Forest managers recognize that success depends on practices that take into consideration the values people bring to forest practices (FEMAT 1993, Hansis 1995, Brunson 1996a). Many researchers have studied the acceptability of forest management practices, ranging from studies specific to practices in a certain location to
those that take a broad-brush approach. Shindler and Reed (1996) studied local public support for use of prescribed fire and mechanical thinning in the National Forests of the Blue Mountains in eastern Oregon and Washington. Local community residents supported use of prescribed fire; people who trusted the Forest Service, who were more highly educated, and who had greater knowledge about fire were most supportive. Even a higher proportion of locals supported mechanical thinning of stands; support was positively related to attitudes toward the Forest Service and among those who favored economic returns from forest management. Respondents showed more support for thinning than prescribed fire, likely due to the perceived increase in economic returns. The authors concluded people need to see management practices with their own eyes, that credible information is essential, that people desire both natural conditions and forest products, and that understanding the rationale for management practices is a prerequisite for support.

Steel and others identified research contributions into value orientations where "postmaterialism" is a new, central feature of postwar generations. Postmaterialism, in contrast to a materialist value priority is less concerned with economic growth and security issues than it is with Maslowian "higher order" values such as love for the aesthetic qualities of the environment (Steel et al. 1994). These new features have given rise to the argument that the adoption of these higher order needs may lead to less materialism and lifestyles that are less threatening to the environment (Dunlap, Grieneeds and Rokeach 1983). The following identifies the core properties that distinguish the observed shift in public values from the dominant (extraction based) paradigm to a new
(more holistic) natural resource paradigm, as articulated by Dunlap and Van Liere (1978):

**Dominant Paradigm**

*Our belief in abundance and progress, our devotion to growth and prosperity, our faith in science and technology, and our commitment to a laissez-faire economy, limited governmental planning and private property rights which all contribute to environmental degradation and/or hinder efforts to improve the quality of the environment.*

**New Paradigm**

*The inevitability of 'limits to growth', the necessity of achieving a 'steady-state' economy, the importance of preserving the 'balance of nature' and the need to reject the anthropocentric notion that nature exists solely for human use.*

Subsequent research by Dunlap and Van Liere (1984) provided findings in support of their proposition the assumption of commitment to the dominant social paradigm leads to a lack of concern for environmental issues.

The social component of the Demonstration of Ecosystem Management Options (DEMO) study (Ribe 1994) is one of the more comprehensive attempts to study the acceptability of alternative timber harvest treatments, as a function of rater demographics, preferences and attitudes; perceptions of scenic effects, perceived naturalness, and use for recreation; and information about the forest and effects of management. The primary methodology was a multi-phase mail survey of Oregon residents, Washington residents, and national residents. Key characteristics influencing respondents’ ratings of acceptability included forest recreation preferences, consumptive vs. amenity use of forests, degree of knowledge about forests, rural/urban residency, and income.

Perhaps the most relevant study to support this research was the work conducted during 1994 specifically on the acceptability of alternative harvest practices on the Tongass National Forest (Shindler, Peters and Kruger 1996). The study was a scoping
effort to identify issues and areas of concern and values underlying judgements about alternative harvest practices – designed more to identify questions than to answer them definitively. A limited number of small group meetings and individual interviews were conducted with residents of the Stikine Area (Petersburg, Kupreanof, and Kake, with an additional sample of timber industry representatives from Ketchikan). Photographs of alternative harvest treatments from the Pacific Northwest were used to stimulate discussions, but were not rated or compared to each other. Participants responded to a wide range of values and uses of the forest, including scenic values and attitudes toward clearcuts, timber production, recreational uses, tourism, habitat and biodiversity, subsistence, cultural resources, education, existence and spiritual values.

The study demonstrated a wide range of values affect peoples’ perceptions of timber harvest. From the standpoint of scenic quality, nearly everyone preferred conditions resulting from alternative techniques to those resulting from clearcuts; slash was a negative element in general, as was the network of roads required. People were also concerned about cost effectiveness, the viability of alternative practices, and the effects on timber industry employment. Another central concern was how alternative harvest practices would support fish and wildlife populations. The study summarized Southeast Alaskan attitudes as follows:

*People are more likely to find a practice acceptable if they can visualize how it will look, understand its effects on sustaining the natural characteristics of the surrounding forest, believe in the information they have received, feel that the practice will benefit the local community, and that they have had an opportunity to interact in the planning process (p. 71).*

The researchers’ point out, the subject of acceptability is complex and must be considered in the context in which a management practice is proposed.
Generalization of social acceptability is difficult because each situation is unique and varies with the affected individuals, groups, communities, and cultures. The study by Shindler, Peters, and Kruger (1996) demonstrated preferences were for mature forests over young ones, natural looking over managed stands, and partial cutting over clearcuts. They suggest the determinations of social acceptability reflect technical knowledge, biophysical consequences, economic constraints, and political interests. Shindler, Peters and Kruger conclude, discovering socially acceptable alternative forest harvest practices may be primarily a matter of “working through” complex issues with specific, individual communities to find durable solutions.

It is clear from these and similar findings (Shindler et al. 1999, FEMAT 1993, Brunson 1993) that acceptability is a broad concept that has many dimensions, and factors that affect judgement about the acceptability of alternative harvest treatments will not be made independent of where harvest occurs. As Debra Clausen (1999) has observed, the investigation of the subject has barely begun, and the research on socially acceptable forest management practices is young and undeveloped. It is a concept, which attempts to integrate all of the held values of a community in one forest management strategy.
Chapter 3

Methodology

This study builds upon the complex nature of acceptability, and examines the formation of judgement from two conceptual perspectives: (1) Shindler and Brunson’s multiple propositional base and (2) and the ‘placed based’ framework. The study contributes to the social acceptability concept by focusing on a specific ‘place’ (Hanus Bay), where experimental harvests have been physically established within the northern management area of the Tongass National Forest – the Chatham Area. To develop a broad understanding of how people evaluate these new silvicultural systems and the properties/factors that affect people’s judgements on the acceptability of alternative timber harvesting in Southeast Alaska, nine groups/types were purposefully selected based on common understanding of interests to the management of the forest.

The research process will explore the social acceptability concept by applying an innovative interviewing methodology that combines poster displays with a commonly applied interview protocol. The poster provides a visual set of stimuli to respondents to reveal with immediacy the trade-off implications for eight experimental timber harvest treatments at Hanus Bay, Alaska.

Research approach

The approach used in this study encouraged storytelling, reflection, critical examination and comparative analysis on the part of the informants, which evoked rich detail. “Thick description”, a concept developed by ethnographer Geertz, “presents in close detail the context and meanings of events and scenes that are relevant to those involved in them” (Emerson 1983). By utilizing the qualitative research approach, a
thicker description provided by in-depth interviews allowed for the exploration and emergence of underlying categories, properties and factors affecting an individual's judgement on the social acceptability of alternatives to clearcutting in Southeast Alaska. By approaching the social world using this method, sometimes termed analytical induction, I was able to recognize nuances of attitudes and behaviors that might have been missed had I used other research methods.

As Clausen and others have pointed out, the social acceptability concept is complex, and in order to move the field of investigation forward it will require integrative approaches. Ehrenhalt (1994) has observed people need to be given a rational menu of information if they are going to be expected to make a rational choice about their future. He believes it is important to “figure out how to include the people in real-life decisions, where the consequences of the choice are out on the table … And they can’t be ice cream versus cake decisions. This isn’t an ice cream versus cake decade. It is more of a spinach versus broccoli decade. American voters have the ability to cope with that, to make the best of a limited set of choices, and then live with them. But you have to put the choices in front of them first.”

In essence, public opinion is only meaningful when citizens have a reasonable understanding of more than one side of the issue (Shindler and Cramer 1999). These recommendations prompted the inquiry into developing a research tool to express multiple effects, hence multiple sides associated with alternative timber harvest treatments.
Research operation

This study attempted a new way of communicating information about the visual and ecosystem effects of alternative timber harvests in Southeast Alaska. It was designed to assist respondents in making informed judgements about the acceptability of alternative timber harvest treatments. Researchers have long noted that the amount, type, and saliency of information presented to respondents can profoundly affect their judgements. This method was an experiment to understand how simultaneous display of key effects could inform acceptability judgement.

The first phase of the research compiled and synthesized relevant information regarding the treatments at Hanus Bay. The research method emphasized a visual learning approach that utilized a main stimulus of a 3’ by 3 ½’ poster board in a left side, top to bottom sequence. To reduce bias in the research process, the treatment order was held constant for each informant. The six consequences of the experimental forest treatments were displayed in a simple, easy to read fashion: (1) visual effects, (2) timber yield, (3) residual stand damage, (4) estimated effects on deer productivity, (5) estimated effects on fish productivity, and (6) estimated effects on biological diversity and abundance. Development of the stimulus required extended discussion with biological and physical scientists at the University of Montana and USDA Forest Service to generate hypotheses about likely effects, and communication to respondents in understandable, yet scientifically accurate language (see Appendix A). The research tested only eight of the nine experimental treatments, since pre-testing of the visual aid showing the existing treatments along with the description of the Hanus Bay study site in
context, demonstrated a majority of people saw no difference between 2% (Treatment 6) forest retention and 0% (Treatment 9) forest retention – T6 was dropped from the study.

An important component of the study was collecting information about how people would react to the alternative timber harvests, and what aspects of a harvest and its effects are considered most important. To do this, a selected sample of Southeast Alaskan residents was generated (the unit of analysis was limited to residents). Twenty-seven informants were picked consciously to assist in the development of different worldviews, to ensure a broad range of groups/types and to test whether or not there is a common understanding of interests within the groups/types. It is recognized the acceptability of alternatives to clearcutting will be affected by the manner in which people view the human/forest relationships, so the research team identified nine groups/types of significance based on common understanding of interests to the management of the forests in Southeast Alaska. The nine groups/types are: (1) logging/timber workers found in management, (2) logging/timber workers found in the woods, (3) conservationists/environmentalists, (4) Alaskan natives active in subsistence, (5) active hunters, (6) commercial fishers, (7) tourist industry operators, (8) sport fishers, and (9) recreational users. From each of these groups/types, three individuals were interviewed and recorded on tape for a total of twenty-seven indepth interviews of Alaskan residents that commonly interact with the Tongass National Forest.

The narratives of the interviews comprised the basic textual data set for the analysis. This focus limits the capacity to generalize these results to the larger population of American citizens, for whose benefit the Tongass National Forest is maintained, yet it offers a significant and politically relevant perspective on local interests and expectations.
Twenty-five of the informants were selected from five communities in the northern Chatham Area (Juneau, Sitka, Tenakee, Angoon, and Hoonah), with the remaining two informants from Portage Bay in the central Stikine Area.

**The interview**

The twenty-seven interviews were carried out in a variety of places and under a variety of conditions. Interviews were conducted at individual’s homes, places of employment, tribal associations, in a church, on a boat and in the park. Travel to interview locations took the form of ferry, boat, bush plane, four-wheel drive, mountain bike, and a foot. All informants were contacted in advance and given an opportunity to review the study goal and context by way of a handout which included a short narrative and a geographical information systems (GIS) spatial map of the Hanus Bay study area (see Appendix B). The handout was provided for each informant to keep for future reference. No individuals contacted were unwilling to participate in the study, although one informant would not allow the meeting to be documented by tape recorder. This particular informant has been misquoted and taken out of context in the past, and therefore does not do recorded interviews anymore. All informants can be characterized as having been eager, willing and requiring varying degrees of probing. The interview always began with a review of the handout and a short history of the study to assure a common starting point for each informant. A few informants had previous knowledge of the study, which in its most extreme case was represented by an on-site “windshield tour” of Hanus Bay, sponsored by the Sitka Ranger District. Of the twenty-seven informants, twelve had heard of the ATC study, fourteen had not, and one individual thought they may have heard something, but was not sure if it was information specific to the study.
During the first phase, each interview was developed by a series of guiding themes in the form of questions, which were repeated for each informant (see Appendix C). Guiding theme questions were open-ended to elicit “talk” about general attitudes and feelings for the Tongass National Forest and Southeast Alaska, prior to addressing specific stand-level treatments.

Following the first 16 open-ended questions that were selected to capture the dynamics of informant’s attitudes and feelings, was the introduction of the alternatives to clearcutting study at Hanus Bay. The second phase consisted of two poster displays, the first displaying where the treatments exist on the landscape, and where the study area exists within the Tongass National Forest. A third map was displayed on the first poster to provide a global scale context, and to demonstrate the distribution of coastal temperate rainforest in the world and where it can be located. This scale proved useful, for several informants commented during the open-ended questioning, on the importance of thinking about the management of Southeast Alaska within the global forest system.

During the geographical location review of the experimental project, a second, more detailed GIS map was presented to offer a more focused look at the study site, showing where each of the experimental treatments are located. The map presented a historical picture of the effected watersheds, identifying old timber harvest operations and the road systems. This proved very useful in not only providing a more complete history of the landscape context, but also in developing trust within the research process. By providing a more detailed account of the watershed context and its previous harvest units, the judgements’ of acceptability of the alternative harvest treatment’s extent, type, and intensity was effected. Judgement of acceptability for many informants was not made
independent of where harvest occurred relative to the overall development history to the Hanus Bay area.

Once the informants were comfortable with the project area location the second poster was presented, which displayed with greater detail the different experimental harvest treatments at Hanus Bay. The informants were walked through the display (see Appendix D), given time to absorb the layout and information, and encouraged to ask questions for clarification. At this point, the stage was set and the third phase of the interview was initiated. Six repeated questions were posed on ‘importance’ values and ten questions on ‘acceptability’ values (see Appendix E). In closure, informants were asked to help develop a better study by offering what factors they believed were not presented on the poster, which would affect their judgements as to whether or not a harvest treatment is acceptable. Finally, informants were encouraged to offer any other information and comments that may not have been covered, or areas within the study they wanted to reinforce. Interviews lasted anywhere between one and two hours.

Data analysis

My approach to analyzing the textual data followed a three-part analysis procedure: Noticing, Collecting, and Thinking about interesting things (Seidel 1998). This was not a linear process that led to the writing of this thesis, but rather, a complex process of data analysis that is iterative, and progressive, recursive, and holographic (Seidel 1998). To help in explaining this approach, at a general level, noticing is the art of making observations, writing field notes, tape recording the interviews, and gathering documents (to name a few), to create a record of the things that had been noticed. The record that was developed, was then coded to develop a more descriptive naming scheme.
My open coding procedure followed the procedure outlined by Strauss and Corbin (1990). Collecting and sorting for analysis took place in the breaking up, separating, and disassembling of research materials into pieces, parts, elements, and units. Once the facts were broken down into manageable pieces, I was able to sort and sift through them, searching and laying out types, classes, sequences, patterns, wholes and frequencies of response. The aim of this process is to be able to assemble or reconstruct the data in a meaningful, comprehensible fashion (Emerson 1983). This process required a moving of back and forth between Noticing and Collecting (Seidel 1998, Tonkiss 1998, Miles and Huberman 1985). Finally, the thinking process examined the materials that were collected, combining them into meaning patterns and checking, and re-checking them to see how these patterns revealed and reaffirmed the concepts embedded within the text.

The sample

The lower the density of human population, the less the specialization of types. This is an important social fact to consider when addressing the social acceptability of alternatives to clearcutting in Southeast Alaska, a region so remote that its population density is around 2 persons per square mile, compared to the U.S. average of over 70 persons per square mile (Allen et. al 1998). Presently, about 74,000 people live in the towns, communities, and villages of Alaska’s southeastern panhandle (Allen et. al 1998). Within the greater population of 74,000 people, the ATC social component focused on twenty-seven informants who were selected on the basis for their representation of one of nine identified “types” or different “publics.”

Of the twenty-seven informants interviewed, four were female and twenty-three were male. The average age was forty-eight (23 years of age to 76 years of age) and the
average length of residency in Alaska was twenty-eight years (3 years at the shortest to 76 years at the longest). Twenty informants are active in subsistence, utilizing fish, wild plants, deer, spruce roots, cedar bark, camping/exploring wildness, seaweed, moose, geese, timber (trees), berries, mushrooms, cockels, clams, seal oil, crab and other natural goods and services. Twenty of the informants regularly and periodically visit the Hanus Bay area to fish, hunt, sightsee, hike, camp, subsist, seek anchorage (shelter), reconnect to culture, day recreation, harvest timber (work), and commercial fish (crab) in the bay. Informants demonstrated the Hanus Bay area is an actual physical environment or setting where many types of activities take place, therefore possessing many values.

Of the informants who were willing to share their level of educational attainment, one had not completed high school, one had completed high school, nine had taken some college level courses, four had completed college, and seven had post graduate degrees. Of those who revealed their annual income, five made between $10,000-$30,000, ten made between $30,000-$50,000, and five made between $50,000-$100,000.

Nine of the key informants can be characterized as having been born and raised in Alaska, with the other eighteen coming from all over the lower forty-eight states. Of the eighteen informants "from below", seven informants originated from the Pacific Northwest, three from the West Coast, three from the Midwest, two from the Southwest, two from the East Coast, and one individual who has lived in thirty-six states as a result of several marriages and military service. Few of the arrivals landed in Southeast Alaska with predetermined jobs, all having done different types of work over the years to make ends meet. As i15 indicated, after many years of living in Alaska, an individual is bound to accumulate a lot of crazy 'things' on their resume. Examples of employment presently
held by the key informants are: sporting goods salesman, fly-fishing shop owner, general manager for a logging company, director of operations for a major tour company, grassroots organizer for a regional conservation organization, seasonal fisheries biologist/commercial fisherman/coffee shop owner, retired commercial fisherman, kayak shop owner, caretaker of Tlingit ancestral sites, traditional Tlingit weaver, kayak guide/odd jobs, sport fishing guide, commercial fisherman/carpenter, mechanic/carpenter/high school teacher, retired lawyer/entrepreneur, seasonal biologist for the department of Fish and Game, public official/board member to a native corporation, sport fishing guide, sport fishing guide/subsistence researcher for the department of Fish and Game, retired state trooper, director of a regional recreation and tourism association, logger/manager, logging and road engineer, town mayor/board member to a native corporation, commercial troller/sport fishing guide/bed and breakfast operator, logger/bullbuck, and a logger/faller.
Chapter 4

Findings

The following chapter is organized around three major areas of inquiry. From a research investigation standpoint, the primary dependent variable is the judgements held by informants, and the independent variables are the myriad of influences and values (properties/factors) upon those judgements.

Areas of inquiry

(1) the concerns, desires and values for the Tongass National Forest held by residents;

(2) the importance of different resource characteristics among respondents (guiding questions), and

(3) the preferences of respondents relative to the nine harvest treatments at Hanus Bay.

First area of inquiry - Concerns, desires and values

These findings provide a context for how the residents of the Chatham Area view past, existing and proposed forest management in Southeast Alaska, which is important knowledge to have when ‘noticing and thinking’ about the factors affecting social acceptability judgement of alternatives to clearcutting.

Residents of Southeast Alaska are often referred to as being rugged individualists due to the social and environmental conditions one has to endure year round. Some communities are accessible only by sea or by plane, and once there, a person may experience a lack of some basic amenities commonly found in the lower forty-eight states, e.g., electricity and running water. The seasons go from one extreme to another, one hundred plus inches of rainfall in the summer to one hundred plus inches of snowfall.
in the winter, with one hundred mile per hour Taku winds in between. The summer days are long, often characterized by ‘Fun Runs At Midnight’ and the winter days are short, often characterized by spectacular light shows in the sky. The food people eat is by no measure standard to the lower forty-eight states, not to say store bought, prepackaged food is not available and readily consumed. But many Southeast Alaskans still live closely to the land and the resources that it provides. Clothes are typically not worn for style, but rather worn for substance. Neoprene extra-tough rain boots are the sole of choice by summer and long johns the warmth liners by winter. Wool is not a luxury in Southeast Alaska, it is a necessity and a bulwark to the elements. Housing can take many forms, some as traditional as any community in the lower forty-eight, but others that can be found in the warmer months and commonly referred to as “Tent City.” Lines of communication can either be traditional in form (telephone and U.S. Postal Service) or by way of a hand-held radio, by plane, or by boat. It is not uncommon for the days news to be yesterdays facts. And amusements take the form of Rainball Tournaments, glacier hikes, fishing trips, 4th of July parades along footpaths disguised as Main Street, and seaweed gathering excursions.

Deeply embedded within the landscape of Southeast Alaska is a special feature that was either referred to directly or talked about in many ways – lifestyle. Consider the following excerpts that reflect the lifestyle feature –

*The natural environment. Here, the ecosystem, the mountains, fjords and the waterways are a special place in North America. [This is what] has kept me here and was the principal reason for coming here in the first place. This was never an economic decision to move here. I moved here specifically for the ecosystem and the lifestyle that the Pacific Northwest coast offered. [11]*

*I have done everything, I have worked in the cannery, I have fished, but I have never been a logger. It is the lifestyle. That is the reason we live here now, I could live anyplace. I am a retired state worker, did fairly well, I do good in the stock market. And I come here partly
because of my heritage, and primarily I would say more than that, is my dad left me the
property ... And I told them, well what if you could retire your whole life? That is the way it
was in the village see. No 8 to 5, you know. When you got up in the summer when there was
fish, you had to go get fish at certain times, you had to get berries when they came out. [i20]

I think the subsistence lifestyle. Yeah, I think that is really imperative. The quality of life we
have because of the natural resources around us are just really a treat, and I am fortunate
enough that I have a lifestyle and livelihood that I have a real intimate relationship with the
plants, primarily spruce and the cedar and some of the ferns and grass, those kinds of things.
[i10]

Informants value a lifestyle that is closely connected to the natural environment,
and the defining characteristics of the biophysical landscape. Many identified the unique
lifestyle to the coastal communities of Southeast as what brought them to the region, or
what keeps them from leaving. Lifestyle is a feature that is defined at the individual
level, with each informant having different properties. The following will explore those
properties mentioned.

Informants’ value having neighbors, even though they may have moved to Alaska
in search of wilderness, or places less populated and developed. When speaking about
what is special to Southeast, the values of culture, people, communities and heritage were
properties commonly mentioned. One informant does not believe there are many other
places in the United States where a person can find big roadless, wild stretches of land
and the communities and cultures that spring up around all that stuff. Another informant
loves the country and its wildlife, fishing, and general beauty, but finds the people to be
what is most special. He values the old timers, and the pioneering spirit, which
contributes to the making of community. Other informants, mostly the native informants,
find the right to live freely in the land of their ancestors to be special and they are
committed to their lineage. Consider the value of heritage to this informant –

I used to hear the old timers say I was born here, I lived here and I am going to die here. To
me that was just a statement. It did not mean much of anything. Now it hits home that I was
born in this house, I have lived in this area and guess what, I am going to die here. It is a
huge statement of what was, is, and is going to be. My whole life revolves around Chatham Straits, Peril Straits and deer hunting and fishing and guiding. I am real comfortable and I know the area, and I know how to catch fish and I know the history of many of the areas because of my research with Fish and Game and because of my father and my mother [i18]

Informant 16 moved to Alaska for wilderness, but over the years the role of community has become a very important value. For her, community is more than a place of people, it is a place to find others who believe as she does, that the Forest Service has harvested too many trees in too short a period of time. She is very proud of the unified “public” within Tenakee, that has taken a stand for the community and its adjacent areas within the Tongass National Forest. The community is a place to catalyze political activism and prevent history from being repeated in the greater Tenakee area. Consider the following excerpt –

*The community here is real important to me, and it was not what brought me here. I think when I first moved here, I tried very hard to pretend that the town did no exist because I wanted wilderness. I wanted to be living in the wilderness. After a decade or two you start to form some bonds with people, intentionally or not, and now you know – and I have become increasingly proud of this quirky place, what we have accomplished in terms of – how different this looks than it would have had not Tenakee been politically active and fairly aggressive in its relationship with the Forest Service. What do you think it would look like if you had not been aggressive? Well, Hoonah looks like the backside of the moon. It is pretty grim over there as I am sure you are aware. It is just a total tragedy for the people who live there. All the wealth that they had in terms of non-cash resources is gone. The ecosystem is trashed. The deer are diminished. The hunting pressure is immense. You know, it is over And it happened in the space of a few decades.* [i16]

All informants mentioned the biophysical landscape playing a valuable role in their lives. Commonly mentioned properties were intact ecosystems found in the panhandle, made up of mountains, fjords, waterways, abounding wildlife both terrestrial and aquatic, general beauty, and large expanses of wilderness. Within the landscape informants find opportunities to fish (both sport and subsistence), hunt (both sport and subsistence), hike, camp, boat, kayak, make a living, and seek solitude. Several informants mentioned the lack of regulations and restrictions to be a special property, because Southeast Alaska and its landscape still offers a place where a person has room
to roam, work and roam. But as many things about the panhandle are special, to one informant nothing stands out, it is just a place where you live and work.

Informants indicated many of the values for Southeast Alaska that are special, are also important. The TNF is important to providing a living and livelihood for all informants as a place to earn a wage, or a place to hunt, fish, recreate, gather resources for human consumption and survival. One informant was not able to identify one aspect being more important, he questions how you can separate one portion of the web of life from another – it is all valued. Another informant remarked he views Southeast as Noah's Ark, where the people who live in the forest never got off the ark, and are still in the forest because it is capable of providing goods and services to the people –

Well, you know, when you listen to elderly people or church people they talk about Noah's Ark. I view Southeast Alaska as Noah's Ark, in that maybe the people who live here never really got off the Ark, that they are still here and this land still provides for us. That is how I view Southeast Alaska, as Noah’s Ark. [i9]

There is a strong recognition for the value of the direct benefits received from the forest, and its utility. As well there is a spiritual value – And it is pretty easy to get into one of those areas and kind of lose yourself, and get the feeling that you are the first person that ever walked there. That is a pretty wonderful thing. Balancing development with the natural ecology of the forest are dominant features in the Chatham Area, and can be summed up by the following excerpts –

I think there is a variety of things. One, you want obviously the forest to be protected and wildlife nature as it is in the Tongass to be protected to some extent. The tradeoff there or the balancing act is how you balance tourism and how you balance the timber industry within that scope or within that idealist type of idea of what you like about the Tongass. I like to think that there are ways to be able to balance the use of the Tongass through tourism as well as through timber harvest and the timber industry. You know, everyone's opinion will vary on how much should be happening in the Tongass. I think there can be a balance that can be struck. I do not know what that is, but hopefully there is a balance. Because it is a great economic opportunity for this region and has been for years, and years and years. Although, it probably has been abused at points. It is an economic opportunity from the commercial tourism side and that needs to be managed, but then it is also a great social opportunity for residents and visitors alike in Southeast to enjoy it. [i4]
In a lot of ways it is really a gift in that it is been preserved somewhat over the years. But I do feel that need to take a little bit more, -- probably why I am even sitting here -- more of a role in the care taking. Being more active as far as policy. And those kinds of things. And not just a critical sense. I think one of the things you mentioned before we started that was important was it is going to be logged. There are some things that are going to be used. It is a tremendous resource and the plants have a lot to share with us. But it is a give and take. There are some things you are going to lose if you use things to an extent like that. So, yeah, I think that there is some compromises that can be made on both sides.

I would like to see it maintain its old-growth characteristic as much as possible. But still allow a sustainable level of timber harvest. I am not opposed to timber harvest. I worked in the woods for years. I do think that the forest was mismanaged for many years. Under the long-term contracts, I think they were cutting – high volume old-growth and they were cutting at a level that can not be sustained over the long-term. So I am happy to see them attempting some of these alternatives to clearcutting.

The Tongass National Forest is observed to be a unique resource (temperate rainforest) globally as well as locally, and should be valued for its unique place in the world. The majority of informants who were asked if they make a distinction between the Southeast panhandle and the Tongass National Forest indicated they did not. Although they understand there is a political distinction for management and ownership purposes, the actual forests of Southeast do not make this distinction. Consider the following, which speaks for most informants –

I tend to think of them pretty much the same, although I know there is a fair amount of private land within the forest and within Southeast. But I pretty much view all of Southeast Alaska as the Tongass. I guess the one exception, of course, is that the knowledge that the Tongass is specifically public land and that everyone owns that, and has a voice in its management. To me it is really valuable, I mean it is kind of the ultimate form of democracy that everyone has a say in how that land is managed and has a stake in how it is managed. So I would say that is probably the difference between kind of the rest of Southeast Alaska and how I view the Tongass.

The TNF is a place that plays host to many forms of interactions. Informants indicated it is a place to recreate in, to work in, to gather natural goods and services from, to escape to and ‘wonder.’ Simply, the Tongass National Forest is a place that provides a rich diversity of resources for the people that live in the panhandle of Southeast Alaska. Recreation was the most often mentioned feature taking place in the forest by informants, with various properties ranging from low end bird watching, beach combing and
photography to high end hunting, fishing, kayaking, and mountain climbing. Informants indicated that although many of the activities enjoyed take place off the forest, in estuaries or on the waterways between the islands, they consider the various natural systems to be in a constant state of flow, and therefore connected. Consider the following excerpt on the value held for a healthy ecosystem –

Well, often it will be on a kayak trip, and it is a combination of paddling through and doing side trips. Just exploring. Sometimes hunting. I don't fly fish. Most of my fishing actually is salt water, but I am still concerned about the riparian ecosystems. I would like to see what we have stay healthy and keep the whole web of life in a healthy state. [i8]

As well, the idea of “doing” does not mean a person has to take anything from the forest other than a memory, a feeling or an experience. Consider the following informant’s explanations, which continue to illuminate the importance of lifestyle and the value of special places –

I hunt also. And recreational. I mean you know that is why we live here ... and sometimes that is exactly why you are there. Getting something or coming back home with something is merely the frosting on the cake. It is being out there and experiencing it. That is really – there is a lot of life out there. There is a lot of growth and energy that is just tremendous. I think people realize even just visiting here but they can not quite put their finger on it. But there is, there is so much growth and energy going on. [i10]

We hike. I mean that is our major favorite form of recreation when we ever get a minute is to go walk in the woods and climb a mountain. We are interested in caves and we are kind of interested in our surroundings ... there are places that are real special to me. I think some places are holy in the most profound sense of the word, but this is probably not the building to get into those kind of beliefs. And I think some areas particularly are – well, like I say, there is different areas that have special meaning to you, and part of it is just the experiences you have had there, what you have seen and what animal encounters you have. And other places just really move you because of their intrinsic value. You know, either you get it or you do not. [i16]

But not all informants feel that way, they need a purpose for “doing”. The following excerpts demonstrate the complexities of Southeast Alaskan lifestyle characteristics –

I have been logging up here for 37 years in it. I fished up here, I have a commercial fishing boat and a hand troll permit. I have hand troll fished here and I have halibut fished commercially. I have trapped here and caught wolves and martin and mink and otter and that was for recreation more than anything else, not commercially. But, let us see, done a lot of boating just for recreation and just traveling through the Tongass and everything. Done some prospecting, not in the Tongass, it was up in the interior, but I have done some on the islands here. That is about it. [i27]
It always has a purpose. It is pretty hard to go out there and not have a purpose, like a lot of people do have a purpose when you go out after something, if you are going to go out after deer, and you just go well, I think I will beachcomb a little bit, or I will shoot a seal since I did not get a deer, or you know we always have a purpose. It is pretty hard to just go recreate. [119]

Informants demonstrated a broad range of values in how they interact with the forest, and what they expect the forest to provide and the personal right of access to those resources. As one resident stated, the forest provides a piece of mind to look out the window and to see it intact and give thanks to whomever, for providing for this forest to provide for you. The forest plays a significant role in providing the subsistence resources accessed by the informants. Consider the following two excerpts –

The provision of what I live on. The subsistence. You look around you and you say this guy is not a subsistence fisherman, but I am. I am a subsistence hunter, because that is what I do. If I could not hunt in the fall, my fishing season only lasts four months out of the year. What is a person going to do for the rest of the time? You go out and you hunt, otherwise you might as well move to Arizona and go golfing or something. This is my life. [125]

I go out literally [to the forest] and my family calls it the mall for me. I will go out to the mall on a weekly basis, whether it be for, greens right now are good. Berries, fish, the roots, the ferns. All of those are happening pretty much year round. [110]

Informants in general believe logging has a place in Southeast Alaska, and can be done in a way that strikes a balance between the economic needs of communities and its compatibility with the ecosystems of the region. All informants recognize the rational for domestic harvesting of timber, and generally feel the National Forests are appropriate places for such activities. Consider the following excerpts –

I think it can be done right. I do not want to come out and say that there should not be any. But there is ways they can do it. I know they have done selective logging in areas that we used to fly over with clients and where I walked in those areas and seen the stumps and seen the trees down, but when you flew over, you could not even tell they were there. [12]

I think the Tongass is vast so I think that there has to be some economic opportunity there. I am not against timber – I am not against the timber industry. I think that they have to be more selective and more careful than they were twenty years ago when they came in and clearcut a lot of areas. These were not issues back then and they are now and they should be. So I think there is an opportunity to make it an economic factor in the economy of Southeast Alaska and continue to harvest timber, but do it in a responsible manner. [14]
But there was strong opposition to the historic hand to glove relationship between the commercial timber industry and the U.S. Forest Service. The policy of clearcutting represents an extreme that had its place in the past, must be accounted for, and carefully considered when re-negotiating the future. And where the policy of no-cutting represents an extreme that has a place in the future, when policy and planning takes into account past harvesting patterns at the landscape scale, within the landscape context, accounting for the values people have for ‘places’ within the forest. Consider the following excerpts –

Well, I think that I like the fact that people are able to make a living from the forest harvesting wood. I think also that the focus of forest management on the Tongass, at least since the fifties, has not been good. It has been industrial and a corporate focus. One that was never intended for the National Forest, I do not think. And so I have a mix of feelings about it. It think that it is that the Tongass and other National Forests it is totally appropriate to use those for generating a wood supply or a pulp supply or some kind of fiber supply, but that it needs to be done not on a corporate industrial level. I don’t think that is what it was intended for. I think it’s much too narrow a focus and the reliance on large scale clearcutting limits so many other opportunities on the forest and I don’t think that most people, most Americans that have a say in forest management think that’s the way that forest should be managed – public forests should be managed. So I have a real mix about logging. [i6]

Well in general I am in favor of a level of activity. I am not in favor of the previous level of activity where they were logging four hundred million feet a year, three hundred, four hundred million feet a year I think, is too much. But a sustainable level of harvest over, you know, realistically if you are going to maintain an old-growth characteristic you need three hundred year rotation which you are not going to see. But at least under the current TLMP if you have got a hundred year rotation on commercial forest land you have got quite a bit of other lands that is not being harvested at all because its not in a LUD or what ever they call it. That allows logging. And the recent appeal decision changed a lot, too. It basically changed the areas that we have been fighting in particular to preserve around here and other places, too. [i13]

The economic role of logging to the mixed economy of Southeast Alaskan communities is vital to community integrity, and should continue to utilize the resources of the forest. But many informants are skeptical as to whether the past forest management policies were truly to the betterment of long-term habitat, subsistence, and
community health. The social reality of our heavy dependence on wood fiber as well presents a personal struggle for many informants, as emphasized by two informants –

*I have mixed feelings. On the one hand I think there is a need for [logging]. I think that the Tongass can make a contribution to local economies, and so I support the idea of an appropriate scale of logging. But it seems to me that the fact the whole thing being driven by mills and stuff, the way it has in the past, has been a big problem ... You have to pay a lot more attention to logging because it is almost nonrenewable in the sense that you cut an area and then, basically, it is not available for anything else for the next 100 years or so. [i21]

*I have mixed feelings, you know. I started out being real anti-logging, because you look at these areas where they have logged, and it is real hard on the eyes. But then I realized myself, you know, I kind of felt like I was being hypocritical because I see all this logging and it upsets me, yet I live in a wood house, and I use paper all the time. And even though I know that there are alternatives to clearcutting, no one ever wants to pay the price. If that would mean like a price increase per sheet of paper or whatever, nobody ever wants to pay. You grumble if a board goes up five cents, so I really do not know where I stand anymore. It is kind of complicated. [i11]

Although they may prefer to see in a utopia no more logging, they recognize its social and biological utility and necessity. But many feel the long-term timber contracts of the past, and direct subsidies to the timber industry for road construction and stumpage do not represent a true economy. Selective logging when combined with policies that promote value-added production may be a sustainable, and truer ecological/economic course to follow. The policy of clearcutting as a job creation tool is not the road the majority of the informants would like to go down. As informant 20 stated, *I am generally against clearcutting just to create jobs.*

Informant’s desires, concerns, and values for timber harvesting are complex, but all would agree on the need for long-term sustainability of the forest ecosystems. The majority of the informants believe there has been overcutting on the forest. For some the harvesting of timber is incompatible with their lifestyle, and for others it defines their lifestyle. As one informant stated, *Southeast never would have developed if it had not been for logging.* But as another recognized, the resource development model set up
many decades ago, was set up in a way that was eventually going to cause all kinds of
tensions and resource conflicts and problems for management for healthy wildlife and
fish populations. And right now we are trying to figure out a way to do it better, and do it
smarter.

Informants believe timber harvest benefits encapsulate three areas: (1) human
needs and consumptive habits, (2) job creation and revenue generation for local
communities, and (3) diversified communities and diversified economies within the
region. The following excerpts are organized around the three areas —

Area 1 — human needs and consumptive habits

I mean we are all world citizens in the great economic scheme of things at this point. We
might as well not kid ourselves. You know, obviously those products go to facilitate human
needs, desires. So ... I mean to a certain degree someone is always going to have to be
[cutting timber], we are always going to have to raise a crop of wood. Just for the
foreseeable future that is definitely part of the scenario. [i1]

Well, wood has to come from somewhere, you know. And I think everybody at some point
wants to build a home you know, and you do not want timber to be so expensive that you can
not even afford to purchase lumber. And high value added stuff people are making, whether
it is furniture, you know, finished lumber or things like that. That is a benefit and it has got
to come out of somewhere. [i2]

Area 2 — job creation, revenue generation, and infrastructure for local
communities

It provides jobs, is an economic driver for Southeast, it provides funds that are returned to
the community, for example, to school and road construction. Prince of Whales Island
(POW) never would have developed - logging activities such as road building linked the
communities together. It has as well, created an ethic among the workforce that bolsters
private enterprise instead of handouts. [i3]

Well, it starts right here. It starts with I get a paycheck, I go down to the store and buy my
groceries. I go buy a car. If I buy a car it benefits people back in Detroit. If I buy groceries
it benefits the wheat farmer in Montana. Pay taxes, it benefits everybody, to one degree or
another. I raised my kids. They go to school. That benefits Montana. Then they have
families and — and it — it just — that is a pretty obvious question, as far as whether it be in the
woods or whether it be on the farm in Nebraska. [i23]

Area 3 — diversified communities and diversified economies within the
region

I think there are benefits to diversified communities, diversified economies in communities
and the fact that people are intimately engaged through their work in forest is really
important to me. It is like my taking subsistence fish and deer from the forest. If there are people in my community that depend on taking trees from the forest for their living, I think that helps build stronger communities and it helps build the community’s understanding that they rely on a healthy forest and a healthy ecosystem. I think that is really important for us.

Well, I would like to think that a healthy economy in Southeast Alaska requires a natural resource that can be harvested, can be used. And again, I guess, my thinking in terms of the ideal, which I do not think is realized very often more historically than now, but the idea of using some of those resources to create local jobs and local employment and local business, to me that is valuable. It is part of the – helps create some economic diversification and balance. But it does not seem like people have done a very good job of figuring out how to do that in some way that really does create local benefits that are spread out through the region. I think that is what my vision would be, smaller scale that created local jobs and that created some local multiplier effect.

As indicated, for some informants Southeast Alaska would not exist if it were not for the timber development industries. The road systems and infrastructure that resulted from those industries are vital to the region, its individual parts, and ultimately community integrity. Consider the following remarks on infrastructure and community integrity –

All of the infrastructure. I do not think you can alienate any of it even in a community that is not active in the timber industry, whether it be the money that comes in from the stumpage or whether it is peripherals having to do with logging camps nearby. I think it is a very big part of the economy ... you need to have that give and take for the health of the community.

Again, even though it is uncomfortable because they are not all – we are not all loggers and we are not all environmentalists, but we have to live together. But it is just exactly that diversity, that is going to be our strength. I think we have to have some logging.

It opens up access for recreation on it so that we do not ... through the road systems and created communities and stuff that was not there before that have survived after [the logging] is gone. Lodges and stuff that would not have been for the use of the roads to go fishing in some of them streams. The industry is what caused that and helped make it go. To me that is a big deal.

Communities are connected and other forest resources and uses are accessible due to timber harvest and its road networks. But some informants believe the fragmentation that has taken place in the region since the 1950’s has been such, that a continued course of action which mirrors the past development direction will have detrimental impacts to a changing economy in Southeast and to community integrity. Future economic
opportunities will be foreclosed. Consider the following informant’s observation on why geographic and social context counts—

My impression is I do not feel like logging so far, has taken kind of the geographic or spatial distribution of its effects into consideration. That it has—in order to provide a balance in the economy and in terms of the impacts, you need to look more than just where the trees are. You need look where people are, and where communities are, and what other uses there are, and how to create a spatial balance for the forest. [i21]

Several informants believe the Frontier State of Alaska today is much like the westward movement of the past, a state of ‘boom and bust.’ Without greater economic balance and diversification, the westward movement stuff will continue, and children will learn to adjust and value living in berry bushes over old-growth spruce/hemlock forests. Some informants expressed this belief not only in words, but as well in actions, for many are preparing for the next economic boom cycle—tourism. The future selling point of Southeast Alaska, given all the development “below” and the pressures expressed by society for open spaces and wildness, is the intact habitat and wilderness of the panhandle. Consider the following remark on tourism—

This community is going to adjust, we are going through an adjustment period right now. We have to switch to the next cyclical boom. If you look at Southeast Alaska and you look at the cycle of, economic cycle, then you compare it to Angoon. I mean we have had whaling stations, herring production plants, we had canneries, you know, everything is based on one single resource. We had logging, mining, you know, so now we have tourism. [i19]

The majority of informants do not question the fact timber is a renewable resource, but given the location of the region and its access to markets, the only competitive advantage the forest products industry has is tightly grained old-growth, where old-growth timber is only renewable on a 300+ year cycle. It was expressed there needs to be a greater emphasis placed on value-added production at the local level, where the ratio of jobs to board feet cut needs to be increased, thereby providing for community
integrity through the creation of a diversity of economies, one of which is subsistence.

Consider the following excerpt that highlights this feature –

The old-growth characteristic wood is not a renewable resource. You can grow more trees, but you cannot grow more old-growth trees, not in a one hundred year rotation. Maybe three to five hundred. Some of these trees are a thousand years old, seven hundred years old. Wood in them is so tightly grained. It is just wonderful stuff. And I would like to see somebody taking advantage of that. There are very few small operators who are doing that... A study they found that in British Columbia and parts of Washington there were sixteen jobs for every million board feet that were being harvested, whereas in Alaska there were only four. In Ketchikan there were only two jobs per million board feet. If we could change that ratio, the volume of timber to the number of jobs ratio and do more of the processing here would do more to benefit the economics of Southeast than just whacking out all that timber I have seen in some places like Corner Bay, the fish runs around Corner Bay have diminished over the years since they did all that logging. And I have to believe that it is the habitat that has been affected. [113]

A short sighted, short-term profit view is no longer valued by many informants, and needs to be replaced by a more mature recognition for a long-term, sustained timber operation that leads to greater diversification and balance between ecological systems and community economies. One informant believes resource use is an important component to any culture, and cultures need to maintain contact with the land. Consider the following excerpts –

One of the biggest problems I think that we have as a culture is our separation from that natural connection, and I think harvesting in the forest is a direct contact that is really valuable for not only people that actually go into the woods but for the rest of the community. So as many of those connections as we can have – direct connections to the land, the better I think that is. The healthier kind of social situation it is, the healthier community situation it is. [116]

So the forest has a lot of values job-wise, but not always in cutting trees down. We need to look ahead. Economics change over time. As is well known, ours is changing more towards tourism at present. The selling point for people coming here is the fact that it is not like any other place in terms of still being somewhat intact as habitat and wilderness. The more we lose from that, the more we are going to lose those opportunities. [118]

Several of the informants who are involved with the timber industry do not believe the industries contact with the land has had any negative impacts to the forest environment as a result of timber harvesting, and in fact, there may be only beneficial impacts to forest health and subsistence economies. Consider the following
I do not see any negative consequences. I have not seen one. Because as long as I have been up here, we have always been careful to take care of the streams that have been around, for example. I have never seen anybody go out and jump in the middle of a stream, even before they had regulations. They did not want to do that. I know back in the early, early days they used to drive up and down some of these streams, some of the flat river bottoms and stuff like that, but it is incredible, that today some of those are the greatest spawning beds for fish around. So maybe we need to go drive [down the streams] in the future. [Laughter] So the science has changed, but the processes are still there? Yeah. I do not know of any negative effects on the Tongass. [122]

[When timber is] improperly harvested ... nowadays, I think most of the controls that are in place pretty much eliminate most of the negative consequences. . harvesting the timber helps the wildlife in a lot of areas. I know it does. Can you tell me a little about that? Yeah, I hunt deer and the populations increase around timber harvest areas. Moose when you harvest a unit of timber, that is the first twenty years that unit has been harvested is ideal moose habitat. They gravitate towards it. Most of the hunters you talk to will agree with me that the best place to hunt is along the edge of a unit. It increases their food sources. So they do good. Well, you probably will not agree with me, but eventually the visual gets better too. Once the regrowth comes back, it looks better to me to see a unit of young healthy timber than it does to look at old dead snags. [126]

But in general, most informants believe timber harvesting and its use of clearcutting that has taken place within the panhandle had negative consequences. Areas of impacts informants mentioned include: visual landscape, ecological diversity/habitat (both terrestrial and aquatic), spiritual, politicization of forest management, road construction and networks [future access] - rock pits - log transfer facilities, garbage left behind by logging camps, asymmetric impacts to other forest user groups, lost commercial development opportunities, decreased forest access a foot (clearcut slash is hard to hike in), economic vulnerability due to a lack of diversification, loss of Tlingit heritage sites, subsistence goods and services and sport use. A few typical comments to represent the majority of the informants are –

When you go in and clearcut areas, that ultimately runs off the wildlife. When you go in and clearcut an area that is maybe, oh, a heavy trafficked area for cruise ships, ferries or tour boats and now you are looking at a bald landscape along what was once a beautiful fjord. [14]

One of the negative consequences that I see is the difficulty to have access to our resources, you know, like deer and some basketry stuff, spruce roots, and the loss of our historic sites from logging practices. [19]
Those informants who are not retired or not planning to retire in the near future would like to see the Tongass National Forest continue to play its current role in their lives. Those individuals involved in the timber industry would like to see the forest not locked out to development, to be able to continue their profession and provide for their families. Consider the following excerpts in support of these informant’s values for the future –

*Providing me a living and a place to recreate.* [13]

*Well, if it does not get totally locked up, the role it plays ... it will continue to provide a living for my family and all the other families that are around here and their families.* [222]

*Well, hopefully future employment. Just basically the same role. I would like to see it continue on and continue my place in the Tongass to stay the same, basically. I would like to see that, I am not sure that is going to happen. I look at the change from a 100 year rotation to a 200 year rotation.* [26]

For the informants who make a passive living off the resource extraction and development of the forest, they too would like to see further and continued development of the regions forest resources. But they value a preference for greater management emphasis towards an improved balance between the forests ecological health and all its natural capital in combination with local diversification of community economies. Many are concerned over the dominion of one user group (logging) to all other user groups, and the lack of spatial balance in the forest that results. Consider the following excerpts reflecting on their future values –

*I am in a business that relies on having pristine environments for people to go recreate in. And I have, hence a vested interest in seeing that, to the most part, things stay the way they are. That things are managed with the future in mind, so that – you know, you hear a lot of times so your grandchildren can go in there and see the same thing that you saw because we are fortunate enough – in some of these streams you can go in and see the things that our grandfathers saw. My grandfather was up in Alaska in the twenties, and thirties and forties, you know. I think it is almost a birthright to be able to see what he saw. And perhaps he saw lots of clearcuts too, even though I do not think that really got going until the fifties. I am not positive. So you know, economically it is crucial to my business, but it is also something that I feel that I have a responsibility to pass on. I would not want to be the
generation one hundred years from now where they say, oh, yeah, that is pretty much when they let things get away and did not turn things around and make things right. [12]

I think almost everyone’s economic — at its real core everyone’s economic interest here in Sitka is dependent on the National Forest, whether it is through tourism or through fishing or through guiding. Whatever it might be. Yeah, I think so. Clearly it is pretty closely tied to my interests here. Living in Sitka. [16]

At present, there seems to be satisfaction by the majority of informants with the status quo provided they are vigilant, and as long as all are able to find access and enjoyment to what they value, and to be able to have those values available to their children and grandchildren. Their relationship to the land, the forest, and all its resources both physical and passive, are valued in their lives. The Tongass National Forest is family —

Oh my gosh. It is one of my family. That is my Aunties and my Uncles out there. I mean, but it is so much a part of who we are. I mean we could be in the middle of Seattle if we just needed to live, but we obviously like a better lifestyle. But yeah, it’s just like home. It is so important to who we are as a coastal people. I just do not think you can take it out of the picture. It just would be too tough. It is a very close relationship. [110]

Informants who are retired or are about to retire tend to value the Tongass National Forest playing a more spiritual and recreational role in their future years. Retirees, due to their age, personal investments, financial independence, and having a substantial amount of time to reflect on what was, what is, and what will be the character of the forests of Southeast, tend to be of two sub-types. They are either indifferent to the forests fate because the ‘place’ of Alaska has changed along with the Alaskan lifestyle, or view themselves as agents working towards shaping the forests future away from its industrial past. Consider the following two excerpts —

From 1935 to I’d say the 40’s, you know you didn’t live up here for work, you lived because it was a really relaxed lifestyle, you were independent yourself, you know fishing, and some logging too, but you know it wasn’t on the scale of the pulp mills or anything like that. And I always say what you did was, you went out in the summer and fished and made money, some money you have to have for rice and corn and flour and sugar, milk and things like that. But then you came home and made babies the rest of the year, you know. I just know if you ask any old timer, they’ll tell you that you didn’t live here for a job, now it’s always jobs! We’ve
got to have jobs, we've got to have jobs, jobs!! We have to cut the trees, we have to take the
gold, we've got to take silver, we've got to take fish. You know that's all it is now, it's just
like it is down south ... I want to die. My wife and I talk about it all the time, there is no use
in being here anymore. No, this is not the quality of life, this is not Alaska, this is not the
Last Frontier, this is just like California or any other place. [120]

Future role of the forest for me is to maintain my life as it is now. Not that I am not growing
and learning every day but my perspective has changed since I am a retired person living in
my retirement home and the place that I am more than likely going to die in. I am not going
anywhere, so it means to me if it can just maintain what it means to me now twenty years
from now, I will be a very happy guy. It has already fulfilled all of its promise to me. It just
has to carry that and fulfill it for as long as I live and my children, that kind of stuff. There is
nothing magic about what I expect out of it. I expect out of it what I have got now ... but if
you can hold out to be the last 10% within your little ecosystem. If we can hold on to
Tenakee, for instance, which is my focus, not all of Southeast Alaska, I do not presume to be
that big of a person. I have done that sort of thing and I understand the issues, but I am
going to have to focus it down to where I live, and if we can manage to be the last ten percent
of just putting the trees away, that would be really wonderful. [115]

The majority of the informants believe there is a legitimate need to preserve

nature for its own sake. Consider the following informant’s values for the preservation of

nature, the need for balance between all species, and why –

Whereas I think I would look at it a little more that pretty much everything out there, whether
it is bears or eagles or salmon, for the most part, have as much a right to live where they
have always lived. You know, we are part of the whole scheme so we are always going to be
in there, too. But it is kind of the old liberty thing. You know, your rights go so far until you
start disrupting the rights of others. I think it is a good thing to manage quite a bit of it
based on the fact that other creatures have a right to live there for the most part undisturbed.
You are never going to have zero footprints, but you could have less rather than more. [12]

Well, in my opinion that should be some of the highest consideration that we give. We have
completely failed to do that in the Lower 48 and that is one of the reasons that the Tongass
specifically, and Alaska in more general needs to be viewed really pretty differently than
forest management down south. We still have the ability to manage for preservation of wild
areas in Alaska that we do not have down south. Just period. It is just not there. It is gone.
We have decided not to do that. And one of the things is for its own sake. I think that should
be a real high value. [16]

It was expressed wildlife and nature do have as much a right to live and be just as

they have always existed, in a state free from the burdens of humankind. But where you
designate such areas, how much land is placed under such a designation, and to what
degree of trammeling is allowed, is open to debate. In general, it is considered a

legitimate management goal especially when placed within the context of the lower forty-
eight states, which many believe to be lacking such natural conditions. Southeast Alaska is becoming a place in the world of which there are fewer and fewer such places with each passing generation. The utilitarian orientation of many of the world’s societies will make wilderness and wild places more and more valuable over time. Those who disagree with preserving nature for its own sake are occupied by the history of Alaska and the setting aside of lands for Wilderness and National Monument status. As a result of historic land designations, some land and locations are now off limits to both traditional subsistence use and industrial resource development. For example, those involved in the logging industry see Admiralty Island (a National Monument) as a timber resource containing high value wood products on loggable terrain. They question the logic of letting a forest decay and die over time, when it could be properly managed to produce resources and revenue. The Native community cites the recent controversy over Glacier Bay National Park as an example of where low impact subsistence was overruled in favor of cruise ship sightseeing tours for outside tourists visiting the panhandle. The Hoonah people were forced from their traditional lands so that the land could be preserved for natures’ sake or wilderness, to the detriment of the traditions and culture of the Hoonah people. The following excerpts reflect these values of having an extractive relationship with nature and the disagreement within the overall sample towards the role preservation should play –

*There has to be something to drive our economy. To me it seems ludicrous to think about it. Don’t we have Wilderness Areas and National Parks and is not Alaska already full of those. And is not the National Forest, was not it set aside for us to work in? I think we have millions of acres of wilderness. I do not know the exact number but you can look on a map and it stagger me. [126]*

*Well, there has got to be some of that I suppose. I guess because of my relationship with the forest, I have a difficult time thinking about just packing in and packing out and not touching anything. There is so much [in the forest] and it is probably why my relationship with the*
logging is such a gift that is presenting itself, that we probably need to use some of that in order to have a relationship with the forest. So I have difficulty when it is just set aside for just setting aside. No flying, no camping, no use. [110]

Well let me give you, going back to Glacier Bay again. Certainly people want that to be a one use area and that is for sightseeing. Well, I do not agree with that, I think that is wrong. I think that is a huge area that a small group of people can subsist and hunt off and not hurt the park. And I really think it is wrong for the Park Service to have tourists looking only. I mean if our Native people want to go into Glacier Bay now, they have got to go buy a ticket on a cruise line, that is ridiculous. It is part of Alaska, it scares me that the rest of Alaska could get tied up like that. [i17]

The majority of the informant’s value a management plan that looks to finding greater balance on the forest between non-commodity and commodity uses. Most would like to see the level of logging scaled back, embracing alternative cutting techniques over clearcutting. Consider the following observation –

Well, I think I would cut less timber, and cut it more selectively and try to get more primary processing done here so instead of going and paying logging companies to build roads and paying them basically to come in and cut trees by charging them so few dollar per board foot, I would try to you know charge a fair price and essentially get more revenue off of the stumpage and also manage for other uses such as recreation and wildlife, and so on and put a heavier emphasis on that. [i14]

Scientific data should speak for the policy and management of the forest, not to the exclusion of people. Community stabilization (integrity) should be a high priority supported by timber harvesting, but finding a plan with a balance between all the economically viable user groups. This does not eliminate the use of clearcutting, but requires greater attention to planning, and providing the American public with a voice at the table through the use of community collaboratives. The following excerpts reflect these values –

I think with the conservation end in mind and that there are a lot of other user groups that are also economically very viable out there. But more in the middle and more towards the, really the non-logging. I see what the problem with clearcutting in logging is ... just that one user group can so vastly affect another. You know, that when you give it over to a few guys clearcutting and they can blast through there in a couple of weeks and effect the way that thing looks for the next twenty years for everybody else, for all the other users, even loggers. They can not come back and log it until it is grown again. You know, the next generation. I think that, for the most part, I see that as an inappropriate use these days. [i2]
I think in some way try to stabilize communities, you know, and I think that would include some kind of logging. I think, you know, this whole idea of collaborative stewardship has some promise. Where you bring more local stakeholders to the table with the understanding that the American public is going to have a say in all this stuff, and try to, like, get a lot of the issues and controversies and areas of conflict out in the open early. [15]

There can not be one vision for the forest. Local niches should take priority to export markets, facilitating a management shift to value-added, locally owned industries as opposed to large-scale commodity production and export. The focus needs to be on people and community. To support this, one informant would not be inclined to value damaging forest ecosystems versus saving dollars, and would be willing to spend more money (with a limit) on certified forest products.

The ideas of sustainability were mentioned by a few informants, consider the following excerpts –

Since management is being performed by an agency of the federal government, it needs to be totally managed, if it is being managed as an asset. So all of the assets have to be managed, and you do not just select trees because they are what someone else wants to buy. If you have an asset that is an ecosystem of any kind, what is the asset of that ecosystem? I do not know. Is it going to yield some nifty new botanical or another? Will the pollen in it give an immunity to a crop that will save Western Europe? I do not know, nor does anyone. So how should it be managed? I think it should be managed sustainably which means that you would remove things no faster than they can be replaced. It does not mean that you do not cut someplace and let some other place go. But I think that if it was just managed with all its assets in mind and all of the potential values including for its own sake, nature, that is how I would see it being managed. [115]

If you are talking timber harvest, the idea of sustainability seems really self-evident to me ... my first criteria is sustainable yield of anything that is cut. You do not cut it faster than it can be replaced. And if that is a 500-year rotation, that is what you base it on. [116]

Some informants do not believe the Forest Service has placed a lot of value on other programs, like recreation and subsistence. They feel there needs to be a broader agreement on what mix of benefits people are going to get from the Tongass National Forest, and the full range of economic opportunities to the region. The following remarks highlight the value for greater economic diversity and balance in the forest –

I would probably continue logging on some limited basis, you know because it is all a part of the major plan which is loggers have to have jobs also. I think that I would also have some
for recreational, subsistence which is never taken serious by the Forest Service, should be also somehow brought into the picture as far as management. [i19]

There is a management structure overall, there is some research and some information and monitoring going on and decision-making that draws on that, as well as on public views and public opinion and what they want. So I think that there is some of the basics in place. I guess the main thing that I would probably do different, and probably the main issue that I would focus on would be trying to develop a little bit broader consensus, not consensus, but a broader agreement about what mix of benefits people are going to get from the Tongass. Because I think right now there is a the history of it, it has been a given that there is going to be logging occurring to support, you know, mills and there sort of seems to be developing an idea that you want to create more value-added processing. [i21]

Many of the informants expressed a lack of confidence with the use of widespread clearcutting, the effect it has had on the natural environment and the role clearcutting has played in regional, local economies. Informants value 'place', which is shaped by the scale of business and the proportional impacts caused by those businesses. Consider the following excerpts –

You know it hits logging again. It hits a little bit of mining. I suppose I am being a little unfair there too ... We have to keep a real close eye on how much we are doing there. And the Native lands, too. It is not all Tongass. I mean we do not have much control over that, but some of the most egregious, horrible logging practices are going on, on Native land you know. Particularly some of the Shiatika land on the west side of Admiralty. Lake Kathleen, all those spots out there, they can not even book that cabin because nobody wants to go out there. It is just a horrendous eyesore. They actually upped the trout, cutthroat trout limit in the lake there because nobody is going out there and fishing and there is too many of them now. [i2]

You know, so I think it is about specific places. The other thing I am worried about with tourism is it is starting to look like old timber, which is really centralized and it is very – and it is dominated by big companies. You know, I mean we have always advocated for, small scale, high value-added, locally owned timber processing and you would like to see some of that happen in tourism. And I think the trend is going away from that. That is disturbing. Cause I think that actually hurts community stability over the long-term. [i5]

Well, certainly the continuation of the same kinds of timber harvest that have gone on, although it is a smaller scale now and it is less, certainly is still in our face here in Sitka. And those will have a direct impact on my enjoyment because every time I go out I will go past one of those two areas and yeah, I think that will have an impact on me. One of the areas is a place where I personally do some deer hunting and so I will not be deer hunting in there if those sales are sold. And then there are other people that use both of those areas for hunting and other kinds of subsistence things that while the logging is going on and for there after for a long time they will not use those areas. They will have to shift to some other area, maybe one of my places where I go and so that will be another kind of secondary impact. [i6]
With what many see as a shift to a smaller timber program in Southeast, there is a heightened interest and concern for the new area of growth and development – tourism. Informants see the old, centralized industry of timber being replaced by a new industry that has the potential of overwhelming not only the natural resources, but also the small community lifestyles of the panhandle. Large scale, corporate tourism has the potential to be as scurrilous as the non-local corporate timber interests of the past, and local native corporate timber interests of the present. The following excerpt demonstrates this concern for ‘place’ and tourism –

_I also think that the size and the scale of tourism and sort of the style of tourism is slowly becoming a problem, whether it is helicopters or cruise ships in your favorite anchorage and things like that, you know. I am worried about with tourism is it is starting to look like old timber, which is really centralized and it is very – and it is dominated by big companies._ [i5]

Within all the change taking place is the ever present concern, and in some cases fear, of a future lacking job opportunities. As one informant stated, _the lack of work, the cut back of people being able to come here and make a living._ But as some indicated, if Sitka was able to survive a predicted economic disaster from the closure of the APC mill, then other communities will find resiliency within the social and economic fabric of Southeast Alaska. In general, there is concern for large scale, centralized corporate interests in the panhandle (i.e., timber, mining, and tourism) that have the potential to destabilize long-term community stability. Even those involved in the timber industry recognize a need for a new vision that will provide for greater stability and local integrity. Consider the following excerpt –

_A number of years ago, when the pulp mills were active, logging was a lot more stable because of work. There was long-term contracts. I am not advocating that everything that went on with them was right, because we were logging huge volumes. And a lot of loggers at the time said this is crazy. We should be logging more constant, smaller amounts on a constant thing, rather than being market driven we should be availability driven and take a certain amount, and take some good out, take some bad out, takes some and do it year by year so everybody knows they have a job. They can make long-term plans. Then they can_
buy equipment on long contracts, and all of these things. But we were – the pulp mills were much – were market driven and there was huge wastes ... you have got to remember what hind sight is, there was a lot of mistakes made. Some of them were honest and some of them probably were not ... from our perspective now, it is one year, it is almost from day to day.

Informants expressed concern over the track record of the past where every other state at one time held the title of ‘Resource State’, where today the resources in those states have been significantly diminished. One informant mentioned Wisconsin used to be timberland, and now it is dairyland. Idaho at one time had one of the world’s largest stands of white pines, and now there is virtually no white pine left. Informants throughout the interview reflected to our Nations history, our westward expansion, and the lessons we can learn from other ‘places’ –

... and said let us look at the buffalo, and they said they were from plain to plain, right? Passenger pigeon, they had all that too. I guess what I would have to throw in here is they keep saying, oh this is a resource state, this a resource state, we have got to take our resources, you know it was meant to develop. God gave it to us to use, and they used three ... and all these guys. You know every state was a resource state, when you look at Idaho, which I came from, we had the worlds largest stand of white pine, there is virtually no white pine left. We had gold and silver up in the northern [panhandle], huge deposits, McCall, Idaho, up in there. You know we had every resource, but where is it now? They are gone, you go down to California and the redwoods, and they had all of these things, what happened to them? Because they went in and cut them. What about Wisconsin? Used to be timberland, and now it is the dairy land, so every state is a resource state or was a resource state. And then as they took it out and got rid of it, they had to go into something else. So I do not see this where it says, well, gee, we do the same as Idaho did, or we do the same as California did, you know? [120]
Second area of inquiry – People’s responses to importance of different resources

The following section will address the repeated measures taken on the levels of ‘importance’ informants rated for the six consequences tested in this study. ‘Importance’ response was measured using a five point Likert scale, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important, and 1 being not at all important. The findings are displayed by grouping the data into three response categories, which are: {5,4} very important/important, {3} somewhat important, and {2,1} not important/not at all important. Each category has an associated percentage, reflecting the strength of response of those informants who are in agreement within the survey. As well, the number of informants who responded (N) is identified and the Likert mean for the overall sample. Following a graphical display for the repeated measures is a short summary and direct text of the general values held by informants to support the survey findings. See Appendix H for cumulative data set.
Findings to: How informants feel about a timber harvest effect on fish productivity, Likert $\mu = 4.7$

$N = 24$

![Bar chart showing Likert scale responses]

(5,4) = Important (3) = Somewhat important (2,1) = Not important

The majority of informants believe it is important to consider the effect timber harvesting has on fish productivity. Most believe there needs to be monitoring and evaluation for changes in productivity and habitat quality, while a few believe the laws and regulations in place provide adequate attention. It was mentioned by several informants, fish play a similar role as deer to the subsistence users of Southeast, but may be a better indicator species of forest quality due to their habit of not moving around the landscape from one watershed to another. Informants noted fish are important to the overall biological diversity of the forest.

*We have got some species out there, fish wise, that simply because of their numbers are always going to be close to on the brink. So that makes it very important how they are doing and it makes me much less tolerant of logging practices that could jeopardize something like steelhead, and possibly wipe out a run almost.* [12]

*It is important because it is a very important species or range of species for the economy and the communities in Southeast Alaska for subsistence, for tourism, and for the direct economy of the jobs. Again, I think [fish productivity] is an indicator of what kind of damage is done in the watershed overall, and how healthy a watershed and ecosystem are.* [16]

*Well, because the State of Alaska, and I think even the Federal government requires buffer areas, wherever timber is cut, the effect on fish is minimal now. So I think [the effect of a timber harvest on fish productivity] is not important. I think that the law requirements meet or are met to take care of the problem.* [117]

*If it is managed right, it is not important at all. It is very important to me in the sense that it is done right. I do not want somebody to go up there and mess up a whole riverbed of spawning ground.* [127]
Findings to: How informants feel about a timber harvest effect on deer productivity, Likert $\mu = 4.5$

The majority of informants believe it is important to consider the effect timber harvesting has on deer productivity. All informants find great value in having abundant wildlife and healthy deer populations, and the majority of informants suggest clearcutting does not promote high quality, long-term habitat conditions. Conversely, the majority of informants directly involved in the timber industry agree with the importance to consider the effect of timber harvesting on deer productivity, but believe clearcutting does not impact their survival.

*That is a very important issue to me, because my take of deer is directly proportionate to what they do with their forest. I have a direct economic link (subsistence).* [i1]

*[The effect of a timber harvest on deer productivity] is very important for us because that is one of our main foods, especially during the winter. I will be out August 1st, I will guarantee you.* [i24]

*It is very important. It is pretty simple in my mind, that is where they live. The trees are pretty important to the deer.* [i12]

*That is important. It is not the only importance ... I think there is a need for a lot of these different styles of cutting ... if you have got an area that is highly impacted by [humans], then we need to accommodate that and not add extra pressure to the resources whether it be deer, fish, wildlife or other plants.* [i10]

*[Not at all important], we have been involved with clearcutting the whole time up here ... if you drive through these units in the evening and look out there, you will see all kinds of beady eyes poking back at you. There is deer everywhere, and they love it.* [i24]
Findings to: How informants feel about a timber harvest effect on biological diversity and maintenance, Likert μ = 4.3

The majority of informants believe it is important to consider the effect timber harvesting has on biological diversity and maintenance. The inter-connections of healthy deer and fish populations to biological diversity was mentioned by a substantial number of informants. One informant has observed science does not have all the answers to how the parts fit and work together, making diversity important. Another stated the cure for AIDS may be found in the biological diversity of Southeast Alaska. And another describes the reduction of a forested landscape to a single age, several species forest results in a reduction of the forests overall health.

That is very important. There are plants out there that are probably very powerful healing plants, and we are harvesting [the timber] down so much, that we are probably losing an opportunity for maybe something that can deal with AIDS or something like that. And we are cutting down our opportunity to find out what kind of plants we have out there. [i9]

I think it is important to maintain biological diversity. It would appear from what little I have read about activities in other places, that when you get extremely large areas of single age, single species, only one or two species then the general health of the forest suffers. [i13]

I would say [biological diversity and maintenance] is pretty important. I guess logging can have its benefits when you do it, when it has its canopy thinned out, and then some of the undergrowth can spring back up. I do not have as much of an answer, but I would still say it was important. [i11]

I guess it is important, but you got to realize these things, most of them take care of themselves. Man just is not as important as he thinks he is. [i23]

You have got to take it all seriously or not do it at all. To me, you got to cover the whole spectrum, I never have believed in wanting waste on the damn forest and to me that is the most important part of it because I like to hunt and I like to fish and I use the habitat. [i27]
Findings to: How informants feel about the amount of damage to the trees left standing in the woods after a timber harvest, Likert $\mu = 4.0$

$N = 24$

The majority of informants believe it is important to consider the effect timber harvesting has on the trees left standing in the woods when utilizing an alternative to clearcutting. In general, informants believe if the objective of the silvicultural technique is to promote a variety of characteristics in the forested landscape that require standing live trees, then it should be done with great care to limit the amount of damage to the remaining stand. Too much damage defeats the purpose, and ultimately wastes resources. Several informants mentioned concern for woods workers safety, where people considerations should come first and residual stand damage second.

_I would have to say that is definitely important, if you are going to keep options open for future potential timber operations, future generations – it is another critical factor_ [i5]

_It would seem like that would have to be very important if you are talking about sustainable harvest._ [i6]

_To me it is not real important, it just takes care of itself. If you guys lay it out right, because logging practices consist of more than just me, it is me and you working together on this thing, and how it is laid out to be cut and all this has got to be taken into consideration._ [i27]

_If you are falling trees and they are falling on trees that you plan on saving, and you are doing massive amounts of damage to them, then in my opinion, that is almost the same as taking them. Maybe even worse because if they die, then it is useless._ [i11]

_Very important, because if you are going in there to selectively log an area and doing it in a manner that is “responsible”, but in the same vein you are finding 20% damage, then you have defeated the purpose of why you are in there._ [i4]

_That is important. Here is an example right down here [in front of my house]. See those trees about halfway up, the only one that died was the one furthest to the right, it was the most spindly and couldn’t take the punishment of losing all those limbs._ [i25]
Findings to: How informants evaluate the appearance of a timber harvest on the landscape, Likert $\mu = 3.9$

N = 24

In general, most informants believe the appearance of a timber harvest on the landscape is an important factor to consider, but it is not the most important factor. For many, forest appearance signifies the health of a forest, its accessibility, hike-ability, and hunt-ability. An intact visual landscape reflects an intact habitat, where the latter is of greater importance. Informants involved in the logging industry believe appearance is important, but take a ‘down the line’ perspective where a regenerating forest will grow back healthier and greener.

The visuals are part of what Southeast Alaska is. [21]

I think it is important how they harvest timber and how the landscape ultimately ends up, because that landscape is going to be there forever. [14]

Visuals are very important, but more important to someone like me who has hunted many areas. Have you ever tried hunting a clearcut? You can not do it. [18]

To me personally it is very important to see an intact ecosystem. It is just a good feeling. Also from an economic perspective, an intact ecosystem and an intact drainage is healthier for fish, which is getting back to my interests. It is where people are willing to go recreate. And my style of recreation and my livelihood comes from the fly-fishing. It is pretty hard to sell somebody in Juneau on getting a new rod and reel to go out and fish some little stream that runs through a desert. [12]

Well, I would evaluate it as very important. I might have a different set of values than most people because I know what happens in ten years ... a properly logged unit does not look ugly to me. [26]

Very important. [For example], at this point what happens in Corner Bay does not get me anymore. When they take another bit out of the alpine there, it is like, oh well. It is not the appearance of it [harvesting] that gets me excited anymore. [116]
Findings to: How informants feel about the amount of wood that a harvest treatment produces, Likert $\mu = 3.4$

N = 24

\[
\begin{array}{ccc}
\text{Amount of wood produced} & 12 & 5 & 7 \\
(5,4) & (3) & (2,1) \\
52\% & 23\% & 32\%
\end{array}
\]

{5,4}= Important {3}= Somewhat important {2,1}= Not important

The majority of informants believe harvesting timber in Southeast Alaska is a legitimate use of the forest, but in general would like to see a much smaller timber program throughout the region. Many informants stressed economics to be very important when considering the amount of wood that a harvest treatment produces. The survival of cultures, people and communities within the panhandle have a direct relationship to the harvesting of timber, but most feel the centralized timber industry of the past has no role in the future.

*I would say that is pretty important. We have been pretty involved in trying to find alternatives to the old way of doing things and economics is a big factor in a timber sale and what timber operators can do.* [15]

*To me personally, not at all [important]. I have no economic interests in any harvest of any timber in Southeast Alaska period. I own no property, I am not a logger, and I have no financial holdings in that industry whatsoever – period.* [11]

*No need to haul out garbage, there is no value there. The economics would not allow for harvesting everything [using helicopters]. We should only harvest those trees that have value.* [13]

*I would say it is somewhat important. If you are going to be inflicting the negative impacts that are going to go along with any harvesting, there had better be some positive things coming from that and one of those is the amount of wood that you pull out, the resultant economic and social impacts from that. If there is not enough to make it worthwhile, then it does not make sense. So that has to be somewhat important.* [16]

*It is not important [when compared to] breathing air.* [19]
Summary of levels of ‘importance’ – Table 1.

Combined categories are: {5,4} very important/important, {3} somewhat important, {2,1} not important/not at all important.

<table>
<thead>
<tr>
<th>N = 24</th>
<th>{5,4} Important</th>
<th>{3} Somewhat</th>
<th>{2,1} Not important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish productivity</td>
<td>92%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>Deer productivity</td>
<td>83%</td>
<td>13%</td>
<td>4%</td>
</tr>
<tr>
<td>Biological diversity</td>
<td>83%</td>
<td>13%</td>
<td>4%</td>
</tr>
<tr>
<td>Damage to stand</td>
<td>79%</td>
<td>17%</td>
<td>4%</td>
</tr>
<tr>
<td>Appearance</td>
<td>67%</td>
<td>21%</td>
<td>12%</td>
</tr>
<tr>
<td>Wood produced</td>
<td>52%</td>
<td>23%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Of the six consequences that result from the harvesting of timber, the factors that are most important to informants are those factors that relate to the productivity and maintenance of fish, deer and biological diversity. In general, informants stated concern over the effect harvesting has to their commercial, subsistence and sport use of fish and deer within the Tongass National Forest. Biological diversity is viewed as being intricately tied to the maintenance and support of those two highly valued resources. Damage to the remaining stand of timber was viewed slightly less important, with appearance coming in fourth and the effect a timber harvest has on the amount of wood produced to be of the least importance.

The displays did not reveal all of the factors that could have affected judgement. Respondents were asked about other considerations, and they mentioned the following items that may be useful to know in forming an opinion: disruption of soil data, simulation data to demonstrate how the forest will come back over time spatially and temporally, economic cost data, a ‘wildness’ measurement, relating the project level study data to the regional and global scale, forest ‘spirit’ measurements, individual understory plant data, summer and winter use data for deer, total number of original
board feet for each treatment and not just board feet harvested, "a lot of things because this is a subject bigger than the study", a Forest Plan with a vision, within forest photos, cumulative impact data within the watershed, wood quality harvested, unbiased biologist assumptions, and erosion data.
Third area of inquiry – Preferences of respondents relative to the eight harvest treatments at Hanus Bay

The following section addresses the repeated measures taken on the levels of ‘acceptability’ informants rated for the eight experimental harvest treatments tested in this study. ‘Acceptability’ response was measured using a five point Likert scale, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable, and 1 being not at all acceptable. The findings are displayed by grouping the data into three response categories, which are: {5,4} very acceptable/acceptable, {3} somewhat acceptable, and {2,1} not acceptable/not at all acceptable. Each category has an associated percentage, reflecting the strength of response of those informants who are in agreement within the survey. As well, the number of informants who responded (N) is identified and the Likert mean for the overall sample. The following displays provide a description of the eight experimental harvest treatments under study (within menu order). See Appendix H for cumulative data set. Following a graphical display for the repeated measures is direct text of the general values held by informants to support the survey findings.
Treatment 8 (T8) – no cut, 100% retention.

N = 19

Very acceptable because it is complete, is an intact ecosystem and it has not been messed with. Which is what I am looking for in terms of maximizing my use and enjoyment with the Tongass. [i1]

Very acceptable [because of] the visual factor. You have a healthy ecosystem for deer and fish, that leads to an area I want to recreate in and I could take people to professionally as a guide or book trips to as a business owner [i2]

Very acceptable, but at the same time realizing that might not be practical for 100% of the forest.

Trying to be a world about this thing, if you are going to have a timber sale, and if I am going to do it within that context, then it is not acceptable. If I am going to be fair about it. [i5]

It is a one, it is not acceptable at all. It is not even classified as a harvest treatment. [i22]

It is not acceptable if you want to log, but it is acceptable for the way it looks. You can’t get it to look any nicer than that. Well, you can, you could get rid of all the dead stuff and it would be a new stand. [i27]

It is very acceptable, it leaves open every single option for future management. If we decide at some future date that we have a totally acceptable way to manage or harvest wood from that fifty acres, we have left every option open to do that. [i6]

I would have to say not at all acceptable, because it is not logging and it is not solving any problems by not taking anything. [i11]

I think it is also important as to where on the landscape it is done, what slope it is facing, but Treatment 8 is very acceptable. [i12]

I don’t think that is a valid question to not harvest any, because they are going to harvest. The reality is that there is going to be cutting. [i18]
Treatment 5 (T5) – harvested 25% of the total trees. Small gaps were created ranging from ½ to 2 acres. All the trees in the gaps were cut. No trees were cut between the gaps. The net result left 75% of the total number of trees in the unit.

\[ N = 22 \]

Likert \[ \mu = 3.0 \]

\{(5,4) = \text{Acceptable}\}
\{3 = \text{Somewhat acceptable}\}
\{2,1 = \text{Not acceptable}\}

I think it is acceptable, mainly because it is small enough that the animals can get around and they can find habitat there. If you have to harvest something, it seems it would be a more manageable situation for the animals I guess. [i12]

In certain areas I think Treatment 5 would be acceptable because it still retains a lot of continuity around it, and we have been able to come away with some [timber] and it has an opportunity to regrow itself in that area. [i10]

It appears that they were very selective on their trees that they wanted. They probably took a lot of the old trees, very old trees. I would say it is pretty acceptable, mostly they seem to respect the environment more and are very conscious of what they wanted to leave behind. [i9]

It is really hard for me to evaluate that on a unit basis. I have got to see the big picture. It is basically how much of the unlogged areas of the Tongass as it exists now are you turning into Swiss cheese, and how big are the holes, and how many holes are there. [i8]

I would go with not acceptable. First it is visually offensive. It just does not look right. You are getting about the same amount of board feet out as you are thinning the area [in Treatment 3], by taking little patch clearcuts ... And I would just assume not answer questions about why there is little dots with no trees. [i2]

I do not like that. You can see it, the blotches, those are not natural. It is just that you can see it, and you can see here, the deer [productivity] is just medium. [i25]

I would say somewhat acceptable. I see degradation in the mid and long term impacts on deer [in comparison] to the no cut group of information. And everything else has, is comparable with that. Your major degradation here is in your mid and long-term on the deer, so I guess that plus the visual impact. [i1]
Treatment 4 (T4) – harvested 25% of the total trees. Small unharvested groups ranging from \( \frac{1}{3} \) to 2 acres in size were left. In between the unharvested groups, \( \frac{1}{3} \) of the trees were removed more or less equally spaced across the unit. The net result left 75% of the total number of trees in the unit.

\[ N = 22 \]

\[ \text{Likert } \mu = 3.4 \]

I would say close to very acceptable. It looks like you get a pretty good level of volume and you get good protection for fish and wildlife, and it is pretty good for biodiversity. [15]

Acceptable. Visually that is much nicer, and it would appear there has been almost no impact at all. From a deer habitat kind of thing high productivity and the same thing for fish. [i13]

Not at all acceptable. I think that is a waste of time and effort to cut 25% and leave all the rest there, unless you are hi-grading. [i17]

Boy you guys are making it hard. That seems to be where we are all headed anyway, camouflaged logging and that would definitely do it. Much harder, I would give that a not acceptable. [i26]

It is very acceptable, [the menu of information] looks pretty good on the vegetation. [i24]

Treatment 4 would be acceptable because you really do not ... from a visual aspect you do not see it. And from your [menu] comparisons, there is no difference [from Treatment 8]. [i18]

You can look at your figures and trade off, you know, but if you are going to get \( X \) number of board feet, would it be better to get it out of two 50-acre plots or one 50-acre plot? I don't know. But those are certainly more appealing aesthetically, Treatments 4 and 3 are; they are less glaring. It does not necessarily mean that they are a lot better. [i16]

Treatment 4 is somewhat acceptable with caveats applied [geographic context, rotation], and if those caveats are not satisfied, then it is not at all acceptable. [i8]

I like that, that looks alright to me. I would say, not being a biologist or whatever, I would say that was very acceptable just by looking at your chart there and the deer survival and the visual effect. [i25]

Yeah, I am comparing it to [treatment] 8. [Treatment] 4 seems to be, I would say acceptable. [i12]
Treatment 3 (T3) – left 75% of the trees more or less equally spaced across the unit.

\[ N = 22 \]

\[ \text{Likert } \mu = 3.3 \]

\{5,4\}=Acceptable\{3\}=Somewhat acceptable\{2,1\}=Not acceptable

From a visual aspect, it is certainly acceptable and in looking at the residual damage is less than the 75% treatments. [i4]

Let us see, this all gets good marks, the board feet [produced] is actually reduced. So that would be acceptable. [i1]

25% evenly. You know, it is hard to tell, you need to get on the ground is my first gut feeling. It is like, the damage has been spread out over the whole area now, and I am not sure that is best. Now I am thinking mainly for the animals, [the menu] says that it is okay. Then it would be okay [acceptable], but I am not real trusting. [i12]

I would give that one a somewhat acceptable. I have done that. Because of the intact forest you have to leave, you do not have anywhere to work, [there is no place] to go to. The way you have to thin, you end up starting in a particular place and working out from it, which I realize is what it looks like you are doing there [in Treatment 4], but you have several different things you have to consider when you are cutting. First off, what to do with the tree to save the tree. Especially in thinning, how to keep from damaging the other trees. And how to get it out after you have got it down and bucked. You need a certain amount of space and I think [Treatment 3] is more acceptable [compared to Treatment 4] because of that. [i26]

I would say, not being a biologist or whatever, I would say that was very acceptable just by looking at your chart there and the deer survival and the visual effect. [i25]

It would have to be somewhat acceptable. It is not as acceptable to me as Treatment 4 and 5 because for one thing, we are not getting the board feet out of it which is what we are there for. And we do have the higher deer and fish [values], but we have them in the other one. And I think for me, I am taking into consideration we have got an overall impact to the area. It does not have any little spots where it is un-impacted. It is all impacted. So I am a little worried about some of the fragile things that maybe, they are fungus, maybe they are mushrooms, maybe they are growth in the trees – but it is not as acceptable [as Treatments 5 and 4]. [i10]

Not acceptable simply because it is not economically viable for a helicopter. [i22]
Treatment 1 (T1) – harvested small groups ranging in size from \( \frac{1}{2} \) to 2 acres. All trees were harvested in these groups. In between these groups, \( \frac{1}{3} \) of the trees were left more or less equally spaced. The net result left 25% of the total number of trees in the unit.

\[ N = 25 \]

| sj | 25%
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<tbody>
<tr>
<td>5,4</td>
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<tr>
<td>3</td>
</tr>
<tr>
<td>2,1</td>
</tr>
</tbody>
</table>

\( 5,4=\text{Acceptable} \)
\( 3=\text{Somewhat acceptable} \)
\( 2,1=\text{Not acceptable} \)

I would say it would be somewhat acceptable. They all create some fierce problems. I say the ones that you are going to have the best results on is the ones that is going to be more acceptable to me. If anything else, the more you open it up, the more you are going to have problems [with blow-down]. [127]

I would say somewhat acceptable. That [treatment] would really depend, in some places I could see it not being acceptable if it was the whole [watershed], if there was a huge area. But if it was in the middle of an area where there was not other harvests. The visual damage seems pretty significant, but from the context, if it was only a few of these in a big block, that would not be as significant. [121]

It is not acceptable [because of] the erosion. Even though they did leave some trees, it is just too open. [19]

[In terms of all the treatments] it is really hard to narrow down. It depends on what you are talking about in terms of scale and how broad it is. I would say that is not acceptable. [Treatment 1] much more than Treatment 3 jumps out at you as having been treated, having been managed – from a distance even. And I think when you get on the ground there [at Hanus Bay] it would be even more apparent. [16]

You get a lot of wood out of it. I would find it not acceptable, because you get a lot of board feet, and the impact on the deer and the fish really is not that much, but the damage to the trees around it, it looks like it is pretty high. Maybe in the long run a lot of those trees would not survive because the damage is too great. [111]

In certain situations, I would say all of the [treatments] are acceptable. I do not think you can just choose one prescription and make it work. But mixing them and using them all in a specific sale, I think you can tailor the sales to the particular terrain you are working on and logging. [113]

I would go with acceptable. That one is not too bad to deal with. [126]
Treatment 7 (T7) – left 25% of the trees more or less equally spaced across the unit.

N = 22

Likert μ = 2.5

\{5,4\} = Acceptable \{3\} = Somewhat acceptable \{2,1\} = Not acceptable

Not at all acceptable. Probably even worse with the logging road right through it. Would it matter if the logging road was not present? No, I do not think so. You still have potential, tremendous potential for runoff, whether the roads there or not. And the road is going to wash out at some point in some areas and end up down in the stream below it. But it is just an eyesore too, and look at your deer short-term, high and the mid-term and long-term, low. You dropped your fish down to medium. Not worth it to me. I obviously see that on these [75% harvest treatments] you are starting to take out four times as many board feet of wood. Not worth it to me. [12]

I would go acceptable with that [treatment]. That one was not too bad to deal with. What I am thinking about right now is the cutting end of it. That is naturally what my mind goes to, the difficulty. I do not know if we are still #1, but we used to be number one in death per hours worked. That has to be my major consideration, keeping these guys going and not getting hurt. [126]

You see when you talk about deer mortality, it depends on where these cuts are. Now up high on the slope [Treatment 7 would be the same naturally], but down low, your deer can not survive that [cut] in the winter time. It would make for good grazing up high in the summer, but [the deer] need to have old-growth down low in the winter time. It would be somewhat acceptable up high and not at all acceptable down low. [125]

Not at all acceptable. Anything other than [Treatment 8] represents a compromise and the thing you really learn it seems out here an awful lot, even though we are not, I am not a preservationist or deep ecologist or whatever. I understand that you have to have all sorts of other uses [for the forest], and I applaud that and I think it is wonderful – but the art of compromise is the gentle art of losing slowly. [115]

I would say somewhat acceptable. That is more acceptable than Treatment 1, because there is less damage and it looks like there is less of a long-term effect on the deer aspect. [14]

If I was an economic company, any company to leave 25% in there would [be acceptable], more realistic. [But] if I was a subsistence company, leaving 75% and up would make sense to me. [117]

I actually find it somewhat acceptable. Well the area … especially the deer in our area, that would be important to us. The other [treatments] look like they might be all right [for deer]. [124]
Treatment 2 (T2) – left 25% of the trees in small groups ranging in size from ½ to 2 acres. All of the trees between the groups were then harvested.

N = 22  
Likert μ = 2.6

\{5,4\}=Acceptable\{3\}=Somewhat acceptable\{2,1\}=Not acceptable

Not acceptable [because of the likelihood] of blow-down - it is just a mess. [i14]

[Not acceptable]. I can tell you, you should not be here in the first place because it is too steep. You can see here, they cut here, and that is too steep. And when you cut too steep a bank then you, it takes a long time if ever to come back, because it keeps every once in a while, it keeps washing back out again. [i20]

Not acceptable, but not to be completely hard and fast on these [75% harvest treatments], but in most cases not acceptable. Depending on site specifics, if it turned out to not be valuable winter range and things like that, maybe you could go to a somewhat acceptable. I know in the real world again, there is going to be places where you are going to try to bump up volume and it is being a little theoretical myself. If there is some places that are less valuable than others, those are places where I could handle a little more activity, a little more intense development. [i5]

I would not like Treatment 2 [not acceptable]. If there is slash and branches and everything all around the islands that you leave, they may be havens to birds and squirrels and all, but it would be hard to get to by man or beast alike. If the effect of cutting is the same as the old clearcuts where the branches and everything else is left around, it would naturally deteriorate and be hell to get through. Having gone through clearcuts, it is hell. [i18]

It is very acceptable for me because there is protection in there for the animals, and tree growth. It looks like it is alright. [i24]

I would rate that as somewhat acceptable. A lot for me has to do with the [menu] values, but also with the visual effect. That looks a lot more natural, like these avalanche shoots and stuff. Well my gut would be somewhat acceptable, but by going back and looking at the information here, I probably would wind up saying acceptable. [i21]

I basically do not find any of those [treatments] acceptable at all, except for clearcutting. We have worked around it, we have experimented here and there up here with patches of wood here and patches of wood there ... there is a lot of foolishness going on. [i22]
Treatment 9 (T9) – clearcut, 0% retention.

N = 21

Likert μ = 2.0

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<thead>
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<th>Percentage</th>
<th>Value</th>
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</thead>
<tbody>
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<td>4</td>
</tr>
<tr>
<td>(3)</td>
<td>5%</td>
<td>1</td>
</tr>
<tr>
<td>(2.1)</td>
<td>76%</td>
<td>16</td>
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</tbody>
</table>

(5,4)=Acceptable (3)=Somewhat acceptable (2.1)=Not acceptable

Treatment 9 is absolutely not acceptable at all. No excuses man. Shame on you. [i1]

It depends on what the economic world affair is. If it is a dire world affair, then I would say it is somewhat acceptable to acceptable – if there is a pressing need. But if wood can be found somewhere else, I would say it is not acceptable. When I see openness, I just see no nesting material. [i12]

Not at all acceptable. It is terrible. The only reason you do that is if you are going to build a hotel. [i4]

Not acceptable. That is hard to take, that is harsh. [i10]

Not at all acceptable. In my mind for any foreseeable future of the humans in Southeast Alaska, the opportunities in that part of the forest are gone. It has been taken. There will be no wildlife of natural state there for three or four hundred years. So that is not acceptable. [i6]

Not at all acceptable, any place, any time. There is just too much of that. [i25]

Treatment 9 is the norm, but I do not think it is acceptable to very many people except those that actually cut it and manage it. [i18]

When I am looking at the condition of the timber and the condition of the land here, and how the timber comes back – I think the total clearcut is by far the best option, even whether you did it with a helicopter or high lead, I still think it is the best option. [i23]

I would say it is acceptable, of course, I am a die hard clearcut man. [i27]

That is my favorite. [i26]

I would say not acceptable, because I hope in the next five, ten years we can find other ways to do it where we do not have to take a whole plain like that. We should do one of these [other treatments] where it still looks beautiful, because that is what I want. [i11]
Summary of levels of ‘acceptability’ – Table 2.

Combined categories are: {5,4} very acceptable/acceptable, {3} somewhat acceptable, {2,1} not acceptable/not at all acceptable.

<table>
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<th>Treatment</th>
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<tr>
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<td>32%</td>
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Of the eight uneven-aged experimental harvest treatments, categorical groupings demonstrate the most acceptable alternative treatments to be techniques that harvest 25% of the volume or less and the least acceptable treatments to be alternatives that harvest 75% of the volume or more. In general, informants rated treatments that meet a balance between ecological values and economic values to be preferred. Consider a typical excerpt –

*Like I said, I am not totally against logging. I just would like to find out some way that we can both log and preserve the forest at the same time, and maybe that is what we do. I do not know.* [19]

The balance is the ‘middle ground’ between the two extremes of a no-cut and clearcut, with the multiplicity of factors affecting judgement to vary within group/type sampled and at an individual treatment level. Consider the following excerpts –

**Treatment 5** - *I think treatment 5 is acceptable, mainly because it is small enough that the animals can get around and there is still habitat there. If you have to harvest something, it seems it would be a more manageable situation for the animals.* [112]

**Treatment 4** - *[I think treatment 4 is very acceptable] because you get a pretty good level of volume, and you get good protection for fish and wildlife and pretty good protection for biodiversity.* [15]

**Treatment 1** – *it is just not acceptable. Visually it is hosed and we are getting low to mid yield on deer. We are getting complete degradation of the fish from high to medium. Plants*
biological diversity seems to have some disruption as well, so yeah, that is just not acceptable. [ii]

Treatment 2 - well, my gut [reaction] would be 3, somewhat [acceptable], but by going back and looking at the [menu of] information here, I probably would wind up saying acceptable. [i21]

The following chapter will explore the variation in the overall sample by addressing all the findings in concert, their support for the five propositional statements by Shindler and Brunson, and the place-based theory on commitment to place.
Chapter 5

Discussion

As managers have come to realize, achieving a level of output from the forest is more complex than putting a public timber sale out for bidding. Since forest managers possess only a limited understanding of people’s underlying reasons for opposing timber harvesting, such as alternatives to clearcutting, studies such as this can help develop a more in-depth description of the factors affecting judgement of social acceptability. This chapter will interpret the findings, building upon the complex nature of acceptability, and examine the formation of judgement for the range of alternative harvest techniques from two conceptual perspectives: (1) Shindler and Brunson’s multiple propositional base, and (2) the ‘place-based’ framework. Finally, key areas of commonality within the overall sample will be illuminated.

Informants indicated throughout the study, geographic and social (normative) context is a very important feature that is factored into judgements on the acceptability of the range of selective harvest techniques. Informants identified from a geographic context, a lot depends on place meanings - whether the setting is special to someone. And from the landscape context a lot depends on whether or not a particular harvest technique is rare or widespread throughout the watershed. Some examples offered by informants included past cutting and extent, natural variability between watersheds, the spatial relationship a proposed cut has to adjacent land uses and NIMBYism (not in my back yard) disputes. Cumulative effects across land ownership are a common property to
the context feature. In support of the influence of these underlying factors on judgement, consider the following excerpts –

... there is different areas that have special meaning to you, and part of it is just the experience you have had there, what you have seen and what animal encounters you have. And other places just really move you because of their intrinsic value, you know, you either get it or you don't. [i16]

**Hanus Bay is a lot more than just a logging area.** It has got that lake (Lake Eva), and then all of that good fishing. [i20]

Well, I'm thinking more in terms of dimensions instead of area. And if that kind of approach is used, I think it's really important that the openings be no bigger than a tree height so that, trees can fall across it from the fringe and re-establish large woody debris on the forest floor. And the other things that comes in very importantly here is this kind of thing would be applied in the future is how long is your rotation. Without knowing that, it's really hard to answer the question. I think it needs to be very long. And basically, the idea is to build up large woody debris and maybe, you know, provide a few additional openings that weren't there, but I wouldn't want to see this applied on a wide scale. It might be appropriate on a small scale in a few places, as long as the openings are small. [i8]

I feel like every watershed is a little bit different too. When you mentioned at one point that what if it [a treatment] did not have any salmon streams. Well, that makes it a little bit different watershed. What if it has a couple of salmon runs that are on the brink. That makes it different again the other way. Maybe you need to stay out of one, and be a little more in another then. [i2]

[in reference to treatment 8 and the GIS map] It seems like, proportionately there is not that much that has not been cut there, so probably that is the way it should remain. If it is going to be managed for a balance at all, the balance has already been blown ... Yeah, context is important in every one of those [experimental treatments] ... Well, see then again, that is so hard [to decide the most acceptable treatment] because if you do not know what the tradeoffs are, you can not make that decision. If you are going to say, okay, we will do treatment 3 on only those 47 acres and the rest of the watershed will be intact, then that is different than doing treatment 4 on an entire watershed. [i16]

The problem that I am having with logging is that the bigger communities are forcing logging towards us, like Sitka. Then there is no logging at all in Juneau, so all the logging gets pushed off on the smaller communities. It is like, do not log in my backyard ... the Forest Service employees have to live within their community, and they get a lot of pressure to do that. I do not mind if they log, but I guess I feel like everybody else, not in my back door. [i19]

But when a [Forest Service clearcut] is right adjacent to [a native clearcut], that is unacceptable. And [to have the Forest Service say] we did not do that and stand behind their philosophy and their respect for the community. But you get cumulative effects. [i25]

This study has demonstrated it is extremely important proposed harvesting takes into account the context, both geographic and social, because judgement of acceptability
requires it. Consider an excerpt provided by one informant that highlights the importance of the social context to the panhandle –

[What is special to me] is the fact that the [Tongass] is right at our back door, it is very important. You know, I have heard scares before, like some of our forest, which is not the Tongass National Forest, [but] is privately owned, and they have talked about doing logging and stuff real close to town, right up Verstovia Mountain. And that kind of stuff really concerns you because that area is where there is hiking trails and stuff, and you cannot imagine losing something that means so much to you. I do not get out of town very much because you have to go by boat, and we do not own a boat. So I am pretty much set into enjoying the places within maybe a seven mile radius outside of Sitka. [i11]

As a result of the importance of the context feature within the data, the following discussion on the factors affecting judgement can not be considered apart from context. Findings demonstrate surface and underlying factors working in concert, making the social acceptability concept complex.

**Shindler and Brunson's Propositional Base**

Findings show the majority of informants believe the harvesting of timber is a legitimate use of the National Forest. Embedded within this legitimization of harvesting timber, findings indicate informants are looking for a balance between commodity uses, and non-commodity values in the forest (economy vs. ecology). Shindler and Brunson (1999) have observed through careful analysis of the literature, research findings continually indicate the general public's preferred forest management option is the 'middle ground' where multiple objectives can be achieved. This study found clear support from the overall sample for harvesting techniques that provide products for society, while maintaining natural conditions and environmental values. **Proposition #9** is supported in Southeast Alaska - *management practices are more acceptable when people believe they can achieve multiple objectives.*
Most informants feel the days of outside industrial corporate interests that centered on maximizing the use of clearcutting should fall to the wayside, and replaced with a long-term, sustainable, diversified economy that balances all forest uses. All informants recognize the important role the timber industry has played to the development of the panhandle and its communities. But this study has observed a re-negotiation is taking place with residents of the Chatham Area, who would like to see a more mature vision and relationship between the forest and the people and communities that live adjacent to the forest. This study has observed within the re-negotiation a strong commitment to economic and lifestyle territoriality for the goods and services provided by the forest, which is characterized by a meta-phenomena we are calling - sustainability of community integrity.

To achieve a state of community integrity that is sustainable, informants believe the forest must continue to provide multiple resources, but in a way that demonstrates greater spatial balance on the landscape. Informants inferred an underlying desire for the balance to be achieved in a way that does not jeopardize the Alaskan lifestyle, which depends on access to commercial, sport and subsistence goods and services. The research protocol did not ask informants directly about the value of environment versus the importance of economy, but the feature of balance emerged in the findings. ‘Importance’ survey data revealed at the surface only 52% of the informants believe the amount of wood produced from a timber harvest is important ($\mu = 3.4$). Greater concern was placed on the importance for the effect a timber harvest has on fish productivity ($\mu = 4.7$), deer productivity ($\mu = 4.5$), biological diversity ($\mu = 4.3$), and the amount of damage a selective harvest technique has on the remaining stand of timber ($\mu = 4.0$). They
expressed concern for the visual impacts a timber harvest can have ($\mu = 3.9$), but place a higher value on intact ecosystems and the multiple resources provided by those natural systems - i.e., fish and deer. In concert with these surface factors are the underlying factors of geographic and social (normative) contexts.

As Shindler and Brunson (1999) point out in Proposition #8 - acceptability is judged within a geographic and social (normative) context. They identify from a geographic standpoint, a lot depends on place meanings (whether the setting is "special" to someone) and from the landscape context, whether the condition is rare or widespread within a defined landscape. Study findings indicate there is an influence of these underlying factors on judgement of social acceptability. As was identified in the findings and discussed, informants found the study to be limited because it was focused at the stand-level. The study found place meanings, past cutting and extent of proposed cuts, natural variability between watersheds, spatial relationship to adjacent land uses, NIMBYism, and cumulative effects across land ownership to be important underlying factors affecting their judgement of the range of alternative treatments. Consider an excerpt from one of the informants who arguably is one of the more adamant defenders of the forest, a former Greenpeace representative for Southeast Alaska –

*I am not going to come down too hard on people. Like I said, I think there is room for some logging, but it has got to be scaled way back from what people are used to. [With respects to ATC] – I guess it is a question of, are you going to log the same opening, or are you going to log adjacent areas to the opening, it is complex. It is something that I just can not give a carte blanche answer to. It is something that is going to require a lot of planning before it is applied, and a lot of public consultation, and a lot of openness on the part of the agency about everything that is involved with it. [18]*

When asked to consider all the treatments, and single out the most acceptable treatment, he added:
It would be the top one [treatment 8], I guess, with reservations. I mean, I do not want to say no cutting, but if I had to pick just one and not knowing how the agency will conduct itself in its management. [i8]

As well, he is not able to single out one specific treatment that is the least acceptable. To this informant, all of the treatments that harvested more than twenty-five percent of the timber are unacceptable management practices. As he indicated, he does not want to say no cutting, but given the legacy of the U.S. Forest Service in Southeast Alaska and its management practices, he has his doubts. He states, Just with the way I have seen the Forest Service behave with its planning over the last 20 years, even though it has improved somewhat, it has not gotten close to improving enough. Research data suggests it might be possible to find greater support for areas that are unacceptable, if a trusting relationship could be fostered between the agency and this citizen. As he indicated, he does like an ecological approach to logging, and is glad to see the Forest Service is doing something new.

This study revealed stand-level alternatives for the overall sample of twenty-seven informants likely to generate acceptance, and discovered alternatives must be considered within a geographic and social context. Findings indicate factors affecting judgement about the acceptability of alternative harvest treatments will not be made independent of where harvest occurs, is not just the proposed technique and its consequences/trade-offs, but as well incorporates reliable and durable behaviors on the part of the responsible agency.

Reliable and durable behavior leads to Proposition #6 - acceptability depends upon the level of public trust in natural resource agencies and in the process by which decisions are to be made. As has been illuminated, the contextual culture plays a
significant role in the fabric of the social landscape. Within the contextual culture is a recognition the public has higher expectations of natural resource agencies. As Ronald Fahl (Rakestraw 1994) observed, in Alaska, the great land and resource issues of the past decade have drawn a level of public attention to the Forest Service that would have been scarcely imaginable in earlier times. And as other researchers have noted (Ehrenhaldt 1994, Cortner and Moote 1999) the average citizen has become more active in the natural resource decision-making process, and is capable of making the best of a limited set of alternatives. But barriers have been constructed between the citizens and the natural resource agencies, which center on the issues of trust, communication and the inflexible nature of a bureaucracy (Yaffee and Wondolleck 1997).

The social acceptability of alternative management actions on the Tongass National Forest is affected no differently. Throughout the textual data, there are numerous references to lack of trust. Consider the following excerpt by one informant who indicated the ‘acceptability’ values were flawed from the start, since liberal biologists, trained at liberal institutions, were responsible for developing the menu. In his opinion, the Tongass National Forest is no longer managed by professional foresters, but rather, is run by fish and bird biologists who have an agenda he does not trust -

... in all the years I have been out here, and all of the studies that have been done, you are probably the first one that I can remember who came and talked to the people that actually live and work here, and know the business, and know the country. They do it, they come out of college with all of their books and make their studies, write their degrees [receive their M.S. or Ph.D], make their regulations, and then leave. And that does not make any sense. Let me tell you, all these guys here in this camp, a lot of them been here for years, they all hunt and they all fish. They do not just grab a saw and go cut trees down for the fun of seeing trees fall and leave them lay out in the woods. They do not start fires. They do not shoot animals and leave them lay. They are ... I think I could make a good case that they are far better at taking care of the forests and animals than the biologists that are hired to do it. [123]
Others expressed the same problems with trust and its relationship to the distance between local knowledge, experience, and the management of the forest. Informants believe they take a back seat in the decision-making process, because their ‘way of knowing’ is not documented or has not been researched by the professional –

And these people who are doing the science, maybe they should begin to acknowledge the traditional people who know this, and maybe we can work together and come up with something now and then. [9]

My problem I have, it upsets me a lot, is that just because I do not have a degree in biology does not mean I do not know anything about it. I grew up in this environment ... that upsets me the most. [124]

When the biologists came from Juneau to the local Fish and Game office, they gave me a call. We want to hear from you, how does the sea cucumber harvest effect your subsistence way of life. I said I am glad you asked that question, now that you have fished out Sitka Sound of sea cucumber. How long will it take to replenish itself? They did not know. How long does it take a sea cucumber to mature to the point where it starts reproducing? They did not know. Do you know whether or not sea cucumber, I call yen, I started using the word yen on them because it is easier to say than sea cucumber. How long does it take for yen to start producing nutrients for other sea life? Do you know of anything these produce or contribute to other sea life? And biologists say that all sea life contribute to each other What about yen? They did not know ... I said you are exploiting a resource you know nothing about. [17]

A number of informants expressed a lack of trust for the U.S. Forest Service due to an image they portray to the public, but can not support simply because of the observable record left on the landscape that covers five decades of harvesting.

Typical comments are –

They put out their management plans, the books about this thick [he gestures] and they always have a cover on them, and it always showed a boat in a nice green place with a lot of trees. And I told them, why don’t you do it the way it really is. It is all clearcut there. How come you got all those trees in there ... they are showing you how pristine it is, but it really is not. [120]

The map you have [GIS spatial map of the logging history at Hanus], you very seldom will see the Forest Service or anybody else putting out a full map of all the clearcuts. They show you the ones that they are going to do now, or maybe the ones that just got completed, but you do not see any overall pattern where it has all been happening. You do not get to see the forest. And that is very, very deceptive ... if you ask what is that cut, when did that take place, what was taken out? – well gee, I do not know, it is impossible to find that information. Now what is that about? So that is deceptive, it is deceptive by omission sorts of things. Does that break down a sense of trust? Oh, of course. [115]
I think part of the problem is that the promise was that the rotation would be 40 or 50 years ... then pretty soon it started snowballing up to 80 to 100, 125, and now they are doing some extended rotations. I do not think the Forest Service has been very honest with the public about that. [i8]

Trust was also mentioned within the context of the Tongass Land Management Plan. One informant does not believe the Forest Plan is as truthful as it could be, since it exists within a political environment (socio-economics), as well as an ecological environment. This informant would forego the political environment in favor of the ecological environment if he were given the opportunity to be placed in the ‘drivers seat’ of management. His management philosophy is anchored in the belief the old-growth forest is what sustains life in Southeast Alaska –

Realistically, if you are going to maintain old-growth characteristics you need a 300 year rotation, which you are not going to get. [i13]

And others believe the management of the forest no longer is based on science and as a result, the decision-making process can not be trusted. Management has devolved to what politicians decide, or who has the political majority. Good data no longer carries a lot of weight -

The political process has deflated the moral and esteem of the agency. The agency then starts to make decisions based on how they perceive the action should be dealt with. We have allowed it to become political, good data no longer carries a lot of weight. Congress can decide at the stroke of a pen, then it becomes a game of getting even or keeping score. [13]

Outputs are a big thing in the Forest Service lingo, and it usually means stumps. And the congressional delegation is still the single biggest inhibitor to change. I think it is all about ideology for them now. It is almost like a personal thing rather than doing what is best for the region because timber jobs are such a small part of the overall economy now. [i5]

But even with the various forms of distrust expressed by the majority of the informants, findings overwhelming desire a management presence to balance user groups, and maintain access to the commercial, sport, and subsistence goods and services provided by the forest. As has been documented in this research process, citizens of all
“types” are disenchanted with either the politicization of the present management environment, the legacy of the timber program, cumulative effects on the forest, or how present planning fails to interact effectively with communities. It may be possible, by accepting each planning context as unique to each individual, groups, communities, and cultures, and building community-based discussions of environmental values as part of an ecosystem management plan, to cultivate social capital that results in trust building.

Consider the following observations on why process counts –

_The town meetings held by the big agencies do not work._ When you go into the native communities, you need to meet with people individually. People do not show up for town meetings because of the culture, one person can not speak for the whole community. This is a problem the Forest Service has, they could never communicate to us, everything was so pointed, everything was so focused. They need to meet with individuals, but they do not have the time, they have to fly out by five o’clock. So if you manage like that, then you are going to get exactly what you are asking for – nothing. [i19]

_We kept getting successions of meetings, each one of them asking us almost the same thing, it is like, how long, how many times do we have to say No before you will really write down and take that as what we said, and take that back to your boss, and it said No. I mean, how many times do we have to say that, how many meetings. Do you wait until there is only 3 people who show up at these things and one of them says ya, I think that is a good idea. Is that the plan? It may represent just a working day for somebody else, a group of five people coming from the Forest Service, the Park Service, whatever on an airplane ... anyway, it gets oppressive._ [i15]

Public trust (Proposition #6) within Southeast Alaska appears to be closely tied to Proposition #8. Stankey and Clark (1992) argued the need for research that could identify specific characteristics of stand and landscape-level treatments, which this study was able to do. Many informants within this study reinforced the need for stand-level prescriptions to fit within geographic and social contexts, which need to be articulated and described with accuracy. As some informants inferred, they are aware and astute to past and present development taking place on the National Forest, and will not stand for _deception by omission_ when being asked to give public comment on what is to be, having not been explained to effectively as to what has been. This does not mean residents will
not go along with the best judgement of the professional managers, but they want to know all the facts before proceeding.

Findings have demonstrated residents are aware of the utility of the forest, its health and ultimately the role the forest plays in the long-term integrity of the community. Fruitful livelihoods, and the success of a chosen lifestyle requires informants to take a deliberate and vigilant interest in the forests management to preserve and promote the meanings and values that provide for their chosen lifestyle. As Cortner and Moote (1999) have pointed out, society does have a complex set of desires, and there is a need for both commodity and non-commodity management systems. Interpretation of study findings has revealed this may only be achievable if natural resource management agencies increase their understanding of managing for different values in different places on the landscape.

Just as natural resource agencies increase understanding and information through studies such as this, so to do the citizens. **Proposition #4** states - *acceptability judgements are based on information (credible or otherwise), and knowledge that comes from a variety of sources*. This study engaged informants to use a menu of information that expressed harvesting consequences in scientifically accurate language. Study findings suggest most informants were in agreement with the information presented, but also brought to the table their own observations, research (literature) and experiences from having lived on average [overall sample] in Southeast Alaska twenty-eight years. Some informants are employed by other natural resource agencies, and have engaged in their own research on the consequences from harvesting timber, and brought forth some very persuasive facts and information that was in contradiction with the menu. But in
general, recognizing the subjectivity of the values did not feel they were to far off.

Consider the following excerpts –

The impact of what is happening north of us has impacted some of the [subsistence] hunters, I would imagine because clearcutting has impacted how we hunt deer and where we hunt deer. Have you read the little study that we wrote, it demonstrates very clearly how clearcutting has affected hunters in different areas. [i18]

I would have to do some research for me to trust any data. I would have to find out who did the study. I do not believe reports unless I figure out who wrote the report or supported the report, I am not real trusting … yeah, I think your board is okay and I do not think you want to get much more complicated with the board. [i12]

Other researchers have found people to use both scientific information and experiential learning in forming acceptability judgements (Shindler and Brunson 1999). Shindler and Collson (1998) observed, while members of affected interests will respect new scientific knowledge, they want forestry decisions to be based on local experiences as well as good science. Consider the following excerpt from this study that supports this finding and demonstrates a typical example of how informants brought in their experiential learning -

I think [treatment] 4 would probably be more acceptable because you go down to Hood Bay and our property around the cannery which we own, you will see they really did a lot of selective cutting in the old days. They took out the great big spruce and pines and they left little scraggly hemlock. Now we have big scraggly hemlock, and a lot of uniform small spruce that, I do not know if they choke themselves or not, if that is a good way to describe them, but you can not get a whole bunch of money off of small spruce choked on each other. The old hemlock that were small and scraggly are now big and scraggly. [i18]

Proposition #3 states - when feasible alternatives exist, acceptability depends on the fairness as well as the desirability of those alternatives. As this study has demonstrated, social values are at the core of the acceptability judgement. A quick review of those values desired by the informants from the forests of Southeast Alaska includes: culture, people, communities, visual beauty, intact ecosystems, protection of lifestyle, access to subsistence resources, abounding wildlife, solitude, large stretches of undeveloped landscape/wilderness, cultural/natural heritage, business/work opportunities,
spirituality, family, active management, balancing development with environment, recreation, existence, value-added production, respect for the land, sustainability, diversified communities and infrastructure, community integrity (stability), and diversified economies. It is obvious given the many values people expect from the forest, the task to finding fair, desirable, and acceptable harvesting strategies is complex.

As indicated, this study is in part a response (Allen 1996) to the Revised Draft Environmental Impact Statement (USDA 1996), which identified commenters wanted to see additional study of alternative harvest methods, and clear definitions of what actually constitutes an alternative to clearcutting. The Hanus Bay experimental site has proven alternatives can be implemented successfully in Southeast Alaska. This study presented eight treatments within a range from a full forest matrix to a clearcut, and set out to test whether those alternatives should occur. The study has found of the eight uneven-aged experimental harvest treatments, the general public’s preferred forest management option is the ‘middle ground’ where multiple objectives can be achieved. A few typical comments to reflect on this –

*I think Treatment 5 is acceptable, mainly because it is small enough that the animals can get around and there is still habitat there. If you have to harvest something, it seems it would be a more manageable situation for the animals.* [i12]

*[I think Treatment 4 is very acceptable] because you get a pretty good level of volume, and you get good protection for fish and wildlife and pretty good protection for biodiversity.* [i5]

Study findings suggest management strategies that consider an alternative harvest practice or a mix of practices (within a geographical/social context) will likely generate a higher degree of public acceptance relative to only using a no-cut and/or a clearcut –

*I do not think you can just choose one prescription and make it work. But mixing them and using them all in a specific sale, I think you can tailor the sales to the particular terrain you are working on and the logging.* [i13]
The following graph displays the ‘middle ground’, where 52% of the informants who responded to the survey question – **Considering all the treatments presented and the described consequences, which treatment is the most acceptable?**, find the most acceptable treatment between the two extremes of a no-cut and a clearcut (middle ground). And where twenty-six percent believe the no-cut technique is the most acceptable treatment within the range, and conversely, where twenty-two percent feel the clearcut technique is the most acceptable approach. **Figure 1.**

**Most Acceptable Treatment**

**Middle ground = T5 thru T2**

N = 23

Informants responded based on comparing the six consequences and trade-offs both within and across treatments. Informants compared the perceived reality of each treatment with seven other known alternatives, and were sufficiently armed with enough
information in most cases to decide whether the "real" condition (credible or otherwise) is superior or sufficiently similar, to the most favorable alternative condition –

*Without being a scientist and kind of looking at the costs and benefits, I think that 25% [harvest] on the 46 acres, [Treatment 5] there is pretty interesting. I am trying to look at the ... well maybe this one right here [Treatment 3]. The third treatment down does a good job of protecting deer and fish and provides some wood and does not seem to have a real high residual damage. So I would say those two are probably the most acceptable.* [15]

The visual/menu research tool fit nicely with Mark Brunson's definition for social acceptability and does provide evidence informant's initial attitudes towards timber harvesting were constructively informed. Consider the following excerpts –

*Very useful. It made me realize that I do have ... that I am capable of compromising on timber harvesting, that I am not totally against it.* [19]

*Sometimes you can get so into the tiny little aspects and you can study everything to the point where you are not really coming up with much better of an answer. In the end game there is always going to be an effect. You can not pretend that you can go in there and have no effect, but you can hope you can go in there and have the least [effect]. I am not so certain that more data would lead to a better answer. It would probably just lead to more data. Yeah, so I think it [the menu] was probably comprehensive enough for me.* [22]

By looking at the response data in this fashion, findings provide evidence the overall sample of informants find more favorable alternative Treatments 4 and 3 which retain a minimum of seventy-five percent of the volume. Consider the following summary table highlighting these findings. **Table 3.**

Combined categories are: {5,4} very acceptable/acceptable, {2,1} not acceptable/not at all acceptable

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Acceptable</th>
<th>Not acceptable</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 (N=19)</td>
<td>68%</td>
<td>32%</td>
<td>36%</td>
</tr>
<tr>
<td>5 (N=22)</td>
<td>41%</td>
<td>32%</td>
<td>9%</td>
</tr>
<tr>
<td>4 (N=22)</td>
<td>59%</td>
<td>27%</td>
<td>32%</td>
</tr>
<tr>
<td>3 (N=22)</td>
<td>54%</td>
<td>23%</td>
<td>31%</td>
</tr>
<tr>
<td>1 (N=25)</td>
<td>32%</td>
<td>48%</td>
<td>-16%</td>
</tr>
<tr>
<td>7 (N=22)</td>
<td>23%</td>
<td>50%</td>
<td>-27%</td>
</tr>
<tr>
<td>2 (N=22)</td>
<td>36%</td>
<td>59%</td>
<td>-23%</td>
</tr>
<tr>
<td>9 (N=21)</td>
<td>19%</td>
<td>76%</td>
<td>-57%</td>
</tr>
</tbody>
</table>
Based on post-interview conversations with informants, observations suggest techniques that harvest fifty percent of the volume may provide another preferred harvest approach, by offering a more favored balance between commodity uses and non-commodity values.4

The middle ground is the area informants suggest is providing a balance for spatial harvesting on the landscape, therefore balancing the distribution of forest resources to all forest user groups. Consider one informant who summed up the proposition - *But more towards the middle, and more towards the non-logging. The problem with the clearcutting [technique] in logging, is just one user group can so vastly effect another.* But as informants prefer to see a balance of multiple objectives, attempting to achieve multiple objectives increases the difficulty of finding acceptable strategies (Shindler and Brunson 1999).

Consider Treatment 5 and the challenges this particular strategy faces. Although informants recognized the technique maintained high productivity values across time for flora and fauna, and met multiple commodity and non-commodity objectives, it was considered to be offensive and therefore not acceptable by 32% of the overall sample. Interestingly, the 41% of informants who find Treatment 5 to be acceptable, those who have special 'timber' knowledge are only more favorably supportive of this 25% harvest technique (and opposed to all other 25% harvest techniques) due to: (a) its ability to be logged with a higher degree of safety, (b) ability to maneuver the timber in the woods during falling, and (c) greater success to save-out the tree and increase commodity value to the market place. Consider the following excerpts addressing Treatment 5 –
I would say that is not acceptable and part of that is because I do not like the visual. It is comparable in the other categories [to Treatment 4] and is much more aesthetically displeasing to look at, and I guess if I was in that area hiking or doing something in that area I would much less rather run across bald bare spots like that. Or flying over I would much rather not see bare spots like that because that is a microcosm of a clearcut. [14]

It would be more acceptable than some of the others. You have got to look at it ... if you are looking at this as an overall picture, you got a little more volume and the spot cut like that is better than some of the other ones, as far as safety and stuff like that goes. This [Treatment 5] here would be, you are going to get short-term, good feed for wildlife and stuff. I would say acceptable. [27]

And consider Treatments 4 and 3, which received the highest degree of acceptability for the difference across the overall sample at 32% and 31% percent respectively. Again, the concerns expressed by an informant responsible for implementing these strategies—

[Treatment 3] is somewhat acceptable, where [Treatment 4] is not acceptable because of the intact forest that you have to leave. You do not have anyplace to work, anyplace to go. The way you have to thin, you end up starting at a particular place and working out from it, which I realize is what looks like you are doing here in Treatment 4, but you have several different things you have to consider when you are cutting. First off, what to do with the tree to save the tree. Especially in thinning, how to keep from damaging the other trees. And how to get it out after you have got it down and bucked. You need a certain amount of space and I think that [Treatment 3] is more acceptable to me because of that. [26]

The majority of the overall sample finds techniques retaining seventy-five percent of the volume to be most acceptable, with those informants not possessing special knowledge into the ‘workings’ of a timber operation apparently being less flexible to strategies supported by those informants who are responsible for implementing the techniques. These findings in combination with informants common inquiry to wanting to see a fifty percent technique might suggest evidence for increased use of two-way learning models that engage a collaborative approach to developing, designing and implementing acceptable harvesting strategies.

As discussed, study findings suggest disenchantment for past logging and its use of clearcutting, its centralized corporate timber dominance, and its role in the ecology and

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4 A majority of the informants inquired as to why there was not a fifty-percent treatment on the menu of information. Some indicated a desire to observe a timber harvest that split the 75% and 25% retention treatments.
economy of Southeast Alaska. Other typical comments not mentioned in the findings that support this shift away from a single harvesting technique are –

[From clearcutting] you are losing this magnificent result of eons of evolution, and as far as the human community goes, you are losing for us the subsistence opportunities. You are losing what brings visitors here for sport hunting, sport fishing, or tourism opportunities. Those are losses, economic losses to the community. [i16]

The biological consequences of the scale of forestry that has existed in the past has been pretty incompatible with my uses of the forest. I do not pretend to know what management is thinking at this point, but what has existed in the past is pretty much a hand to glove with the timber industry. [i11]

I think there are ways to log and to utilize the resources of the Tongass in the timber industry, that allow [the Tongass] to become a renewable resource over years, hundreds of years. It has to be done that way, and has to be managed and whether or not it is being managed well at this point, I do not know. But I think they need to look at it in terms of making sure that resource, not only the timber industry, but the other aspects of the Tongass is renewable. The timber, wildlife and nature and me being able to go back there and enjoy it too. [i4]

I think the Tongass and other National Forests [are] totally appropriate for generating a wood supply or pulp supply or some kind of fiber supply, but it does not need to be done on a corporate, industrial level. I think it is much too narrow a focus, and the reliance on large-scale clearcutting limits so many other opportunities on the forest. [i6]

Overall, I am not opposed to logging, but I think the timber industry that existed here from the 50s to the late 80s was a travesty and a sham. A maximum short-term profit operation with little regard for habitat, communities, subsistence, it was a false economy ... I just think it has been mismanaged. [i14]

Interpretation of study findings would indicate the shift that is taking place is out of informants acting as residents within a greater community of people, their commitment to the ‘place’ of Southeast Alaska, and fairness to their neighbors. Informants in the study support Proposition #3 – when feasible alternatives exist, acceptability depends on the fairness as well as the desirability of those alternatives. Consider one informant who approached the question of ‘acceptability’ for the no-cut treatment (T8), and responded –

Trying to be real world about this thing, if you are going to have a timber sale, and if I am going to do it with that context, then treatment 8 is not acceptable. If I am going to be fair about it ... [on management of the forest] I think in some way to try and stabilize communities, and that would include some kind of logging ... I think it is about specific places. [i5]
Social norms are a product of the interplay of members of a community with the surrounding forest, and my research findings indicate it is heavily influenced by the community members’ desire for local stability through fairness and desirability of the middle ground, which I propose exemplifies community integrity. As Shindler and Brunson (1999) point out, the contextual culture is formed by many interactions of the resident citizen, and will strongly influence the alternatives considered as well as the acceptability of the outcomes, and over time, how people feel about the decision-makers.

Consider the following analogy given by one informant on acceptability, and the collaborative interactions necessary within a community to achieve acceptance of forest management decisions –

*In Sitka, we have our four way stops. They are a gift. It is one of the few communities where you have to stop, look around and take into consideration what your neighbor is doing before you proceed. That is ... I do not know how else to put acceptable. You have got to take into consideration what is going on before you proceed. It does not mean you are not going to go in that direction still. You are, but you have got to at least acknowledge what everybody else is doing.*

**The place-based theory on commitment to place**

Findings have identified the Hanus Bay area to be rich with many held values, and a ‘place’ for the availability of wildlife, marine life, and plants for the customary and traditional use by rural Alaskan residents. Connections to this ‘place’ have meaning and value, which affects judgement. As has been discussed, informants are encouraged to see the U.S. Forest Service is using alternative harvesting techniques that are more environmentally sensitive compared to the traditional use of clearcutting. There appears to be a growing sense of solidarity amongst the residents of Southeast Alaska. A common fellowship has been observed in the data. The key area of commonality across the overall sample from which it appears to ensue, is the unique lifestyle experienced in
Southeast Alaska that has at its core a multiplicity of values provided by the natural capital of the forest environment with emphasis on subsistence resources. As a result of the ATC social study, it has been observed public perceptions regarding timber harvest are being re-negotiated in response to changing resource management conditions, and the potential for new harvest systems on the landscape. Within this re-negotiation is the importance, presence, and maintenance of subsistence resources for rural Alaskans in the Chatham Area. The majority of informants believe the ability to access these resources in perpetuity does not eliminate the practice of logging on the forest, but the harvesting of timber is being re-negotiated by the general sample of residents in this study. As indicated in the findings, the majority of informants believe timber harvesting is a legitimate use of the forest, but must be done in a way that better protects natural capital and those resources that provide for a unique Alaskan lifestyle dependent on subsistence resources. Due to the lack of other ‘places’ in the United States where an individual can engage in such a lifestyle, residents are committed to protecting their ‘place’ they call home.

The ATC social study proposes sustainability for community integrity requires commitment to place. This study has demonstrated both within the findings and the discussion of those findings, Southeast Alaskan residents have a commitment to their ‘place’ in the panhandle. Informants have demonstrated a commitment to a lifestyle within a social context that is embedded within an environmental context. We know informants value a lifestyle that is closely connected to the natural environment, and the defining characteristics of the biophysical landscape that provide for local economies (i.e. guiding, tourism, timber). And we know informants’ value their neighbor, even though
they may have moved to Alaska in search of wilderness, or places less populated and
developed. As one informant stated isolation is a good thing, but he loves all of Alaska
and its people dearly. Consider the following excerpts on commitment to place –

I am not going anywhere, so if it can just maintain what it means to me now, twenty years
from now, I will be a very happy guy. It has already fulfilled all of its promises to me. It just
has too carry that and fulfill it for as long as I live and my children [live]. [i15]

But the ecosystem is important for other reasons to me. It is the culture, it is subsistence,
which I guess is part of culture, and it is one of the last somewhat wild places that is left of
its kind. And I can not imagine where else in this world I would live. [i8]

It is like patriotism, you love your country. And you like to defend it. It is heart breaking to
see so many things taking place today, so much emphasis on money. [i7]

I was born in this house, I have lived in this area and guess what, I am going to die here. It
is a huge statement of what was, is, and is going to be. My whole life revolves around
Chatham Straits, Peril Straits and deer hunting, fishing and guiding. [i18]

As Shindler and Brunson (1999) have observed within their research and as I have
observed within the Chatham Area of the Tongass National Forest, the acceptability
concept is further complicated by place-based or situationally specific context. Norton
and Hannon (1997), as well as Williams (1995) argue a place-based framework needs to
be addressed in our evaluation of environmental policies. One informant within this
study made specific reference to the idea of collaborative stewardship, and how he
believes as a process it has some promise for developing policies about ‘place’. He
stated –

I think the whole idea of collaborative stewardship has some promise. Where you bring
more local stakeholders to the table with the understanding that the American public is going
to have a say in all this stuff, to get the issues, controversies, and areas of conflict out in the
open early ... at least the people meet face to face at the table. [i5]

Interpretation of study findings suggests the social acceptability concept within
the Chatham Area, and the multiplicity of factors affecting judgement for new harvest
systems on the landscape is influenced by commitment to place values within a
geographic and social context. Consider two informant's comments on why they have
value for the 'place' -

On this side of it [Catherine Island], when I was guiding and everything [I got over there] quite a bit. Some of my favorite areas are on the south side of Catherine. The north side too. Probably in Hanus Bay, around that area, [I get over there] probably half a dozen times a year [118]

Yeah, I worked there for... at Hanus Bay. We was on the island there, we were on Catherine Island. Yeah, that was back in '75 or '76, somewhere around there. Took my boat up, a friend of mine and I run up from Thorne Bay and finished the season out there. There was some of the best yellow cedar I have seen. Yeah, I cut some big ones in there, and I think I had one that was about 55 or 60 incher, it was a nice piece of wood, high value. [127]

And as Shindler and Brunson (1999) have pointed out, the setting in which acceptability judgements are elicited is equally influential, which further complicates the task of finding acceptable harvesting strategies.

Summary

Interpretation of research findings has identified informants making decisions on social acceptability based on shared community values, on what they think is right and fair, and not only on what is desirable and preferred. The study has observed within the re-negotiation of resource management conditions, and the potential for new harvest systems on the landscape, a meta-phenomena of sustainability for community integrity. Achieving community integrity will require a compromise between all forest user groups over the spatial landscape. There is a shift taking place in the forest to a new, more holistic natural resource paradigm that informants believe may be found in the middle ground. The middle ground is where timber harvesting has a legitimate role to play in the sustainability of community integrity, but must not jeopardize an Alaskan lifestyle that is dependent on commercial, sport, and subsistence goods and services from the forest environment. As well, alternative harvest techniques do not exist independent of where proposed harvesting takes place. Achieving a modest level of timber harvest output
occurs within a geographic and social context with other forest uses. To overcome the
complexity of social acceptability and find fair and desirable harvesting strategies, there
needs to be greater trust building (social capital) on the forest between the agency that
manages the forest, and the local residents who are intricately tied to the forest.
Residents are committed to their ‘place’ in Southeast Alaska and its ability to combine
natural resources and outdoor recreation opportunities to provide for their lives as
independent sustainers.
Chapter 6

Conclusion

If those nations whose social condition is democratic could remain free only while they inhabit uncultivated regions, we must despair of the future destiny of the human race; for democracy is rapidly acquiring a more extended sway, and the wilds are gradually peopled with men.

– Alexis De Tocqueville (Democracy in America)

Democratic social values are found at the center of the social acceptability experience of alternative management practices on the Tongass National Forest. This study has illuminated a multiplicity of surface and underlying factors working in concert to affect individual judgements. At the surface it has been discovered Southeast Alaska is a unique and special place to the informants who live in the panhandle, and Hanus Bay is an area used by most for a range of reasons. Informants believe the people and communities in combination with the coastal culture are special features, characterized by the properties of landscape beauty, intact ecosystems, access to solitude, abundant wildlife, subsistence resources, abundant wilderness, cultural/natural heritage, business and work opportunities and the ability to raise a family. These features and properties strongly influence ones chosen lifestyle, where ones lifestyle is ultimately influenced by the management choices of the Tongass National Forest. The fact the National Forest represents the majority of the land area to the panhandle (80%, 17 of 21 million acres), and is used by all informants one way or another in their daily lives, makes its management to be of great personal concern and value. In essence, the social landscape is deeply embedded within the environmental landscape. Consider the pointedness of two informant’s comments –
The forest is what sustains life here in Southeast. And in one respect or another, it all comes down to the forest whether you are a fisherman, a hunter, a tour guide, or a logger. Southeast is the [Tongass] National Forest, it is us, we are them. And so in one way or another virtually everybody that lives here, except maybe some of the government people in Juneau, is connected to the forest. And its health is very important to us. [i13]

It is hard to separate anything in Southeast from the Tongass since we are ... you know. And a lot of times when you talk about different National Forests around Seattle, you had to drive to them. But you know right here, you are right in the middle of this one. So as the Tongass goes, so goes the rest of us. [i2]

Contemporary society in Southeast is influenced by many cultures, where the capital of the forest has provided for the physical and cultural livelihood of local peoples for thousands of years. Due to a heavy reliance of all the informants on a variety of forest goods and services within Southeast (i.e., visual aesthetics, fish productivity, to spiritual solitude), most value a reduction in the use of clearcutting. Findings demonstrate a preference for modest harvesting practices that achieve multiple objectives across a geographic and social landscape. Harvesting techniques retaining seventy-five percent or more of the timber volume were considered by informants to be the most acceptable practices, but carte blanche answers made at the stand-level are limiting since stand-level prescriptions exist within a larger landscape context.

To move forward with the complex nature of the social acceptability concept and to continue to manage for proceeding generations, transactive processes (Friedman 1973) that are on-going and collaborative may be needed. This study was an exploratory process designed to uncover new, innovative, and unique approaches to understand the causal network affecting people's judgements, and ultimately provide forest managers new ideas in a perpetually changing world. It was a process that worked towards communicating the environmental complexities of alternatives to clearcutting to the
public, and simultaneously to learn from the public. As two informants stated, the
process was a public learning event -

"it is great that they [USFS] are going around and getting people's input, I feel like I have a
little bit more of a choice in what is going on, even just doing this [study]. And I think that is
important, [to know] it is not just people sitting behind a desk making these decisions."

"it is good that you are coming into the public and asking these questions and putting forth
this information, because the public has to be informed to make a fully informed, rational
decisions."

Increased use of two-way learning models that engage a collaborative approach to
developing, designing and implementing acceptable harvesting strategies may provide the
structure and framework for achieving sustainability for community integrity and greater
understanding for local Southeast Alaskans commitment to their 'place' in the panhandle.
As Cortner and Moote (1999) observed, a democratic government occurs when decisions
are made by the people, directly or through elected representatives in an open process of
discussion and decision. As informants indicated, they want to be engaged at the table
where forest management decisions are shaped. The forest appears to be what sustains
life in Southeast Alaska, so informants have a deliberate interest in its management. A
collaborative approach to achieve the spatial landscape alluded to by informants may be a
two-way process that obtains greater balance between the multiple forest user groups.
These types of learning approaches may allow resource professionals to move through
the complexity of ecosystems and social systems to finding acceptable harvesting
strategies.

The U.S. Forest Service in Southeast Alaska and elsewhere must continue to get
involved with the movement towards sustainability of community integrity, which lies
somewhere between ecology and economy. It is not feasible for the U.S. Forest Service
to manage the 191 million acres of National Forest lands alone. To achieve sustainable
management there will be a need for an increased level of ownership for the citizenry in
the planning framework of our public lands. The ATC social research process has
produced a pilot methodology that is experimental, and may be one more step towards
operationalizing these experimental ideas for the conservation and management of our
global biosphere. Consider the following excerpts on this study’s promising
methodology –

*I think it is really interesting. It is definitely more interesting than I would have expected
when you said you wanted to do this thing, but I think you have got a really good
methodology set up here. I appreciate the way you phrase the questions and everything.*

*Off hand, I do not know how it could be made better. It looks real good, it has a nice format
that is easily understandable. It has been real clear.*

*I have questioned how worthwhile the question of social acceptability is, but having been
through this [study], I actually see some use. I think that raising those kinds of questions,
and looking at it as you have, you probably might even come up with kind of a statistically
reliable sort of answer. You are going to get some useful blueprints.*

**Future Research**

Extended research might test the generalizability of the methodology, by
expanding the presented cause and effect consequences and trade-offs to other held
values identified by informants. Factual information does not speak for itself; it exists in
a cultural context, within a set of assumptions about its relevance, and these assumptions
include important value orientations (Dake and Wildavsky 1991). The experimental
methodology may have great utility for sustainability planning in a community, as an
ongoing community-based discussion of environmental values as part of an ecosystem
management plan. And as Shindler, Peters, and Kruger (1996) concluded, discovering
socially acceptable alternative harvest practices may be primarily a matter of “working
through” complex issues with specific, individual communities to find durable solutions.

In the task to finding solutions to these complex issues, the research approach taken in
this study may provide a tool for identifying the boundaries and constraints within each geographic and social context. This may be a great contribution beyond the “thick description” developed in this study and previous work in Southeast Alaska (Allen et. al 1998; Shindler, Peters, Kruger 1996; Smith 1996). It is important to develop creative techniques for the continuation of doing good work where the ‘rubber hits the road.’

Other research might repeat this test in five years, with updated pictures and data on the effects of the experimental treatments. Research has indicated the general public believes timber harvesting looks better with regeneration over time. This studies overall sample of residents were sensitive to the visual impacts, and did support the majority of research on timber harvest evaluation which has identified aesthetics as an important factor affecting social acceptability. But only focusing on the traditional area of visual appearance to measure acceptance proved to be inadequate (Allen 1996). This proposition was supported in this study, where informants indicated it is important management strategies address visual impacts, but general consensus leans more towards the importance of the effect of timber harvesting on other goods and services provided by the natural capital of the forest environment – i.e., subsistence resources.

As well, more people could be involved in the study, where a random sample of Southeast residents could be taken from all three management areas of the Tongass National Forest. This would not only allow for a research direction to develop statistically reliable descriptions, it would as well build a more robust textual data set. By expanding the study in this direction, we would be better able to test Shindler and Brunson’s propositional base and allow better testing of the role of commitment to place theory. Future research might develop within forest experiments to test Proposition #5 –
while many factors influence judgements of forest practices and conditions, acceptability ultimately depends on personal observation of the outcomes.

In research expansion other methodologies could be experimented with, such as focus groups in combination with the menu of information. The experimental task would be to understand how informants might come to consensus on a type of harvest technique that is acceptable to all groups involved – government (management and research), industry and the general public. As indicated in study findings, Treatment 4 demonstrated the most acceptance within the non-timber industry informants. Several outside industry informants mentioned the importance of safety issues posed to the woods worker, but in general, safety related issues were expressed only by those who are responsible for implementing the techniques. It is possible, there are other types of techniques not presented to informants in this study that would strike a more acceptable balance between all forest user groups – i.e., 50% retention techniques and the tear-drop design (Miller 1997).

As Shindler and Brunson (1999) have pointed out, the setting in which acceptability judgements are elicited is equally influential. Focus group research might provide greater understanding into the process phenomena Brunson (1996b) has observed, that acceptability judgements are made at the individual level, but are susceptible to group influences and provide a motivation for group behaviors. Finally, continued research would allow for the further testing of what researchers have long noted, that the amount, type and saliency of information presented to respondents can profoundly affect their judgement.
Closing statement

Thomas Jefferson believed in trial and error in governance, and that one should expect an occasional failure. His philosophy was non-traditional, embracing the notion of productive failure. This is not to say one’s goal should be failure, but rather, one should not be afraid to take risks, think “outside the box” and embrace the notion of change. Front-loading a social science framework, which embraces a two-way public learning experience like this study’s visual menu, and utilizing collaborative planning may be a powerful tool in achieving the peace and stability in the forest planning process that Senator Frank Murkowski referred to (Hearing 1996). The U.S. Forest Service must continue to aggressively address the 21st century by embracing the fact that “an important aspect of ecosystem based management is to better integrate the human community and the citizens that have economic and or emotional ties to the area in developing goals and in planning projects” (U.S. Department of Agriculture, Forest Service 1993; Williams 1995).

Recently, when addressing the ideas of democracy, equity, and a vision for conservation management, Jack Ward Thomas stated, “These are social questions. There aren’t any scientific decisions, only social ones” (Snow 1998). Social science is fundamental to the concept of social acceptability, social acceptability is fundamental to the concept of ecosystem management, and ecosystem management is fundamental to the concept of sustainability. I firmly believe, if in the struggle for survival, if sustainability is not achieved, then the struggle has been in vain.

We keep wiping everything out, if other people realize it or not, we are all dependent on the land and the forest and the water. You have got to [protect it] otherwise we are all lost souls. We can not all live in the concrete jungle in the city. That would not be a democratic way of living anyway. We should all be entitled to live the way we want to. [125]
References Cited


Clausen, D. 1999. The social acceptability of alternatives to clearcutting (ATC) as described in literature, with specific emphasis on Southeast Alaska. Draft report, Sundberg and Clausen. On file at the USFS-Forestry Sciences Lab, Juneau, Alaska.


Shindler, B., and M. Reed. 1996. Forest management in the Blue Mountains: Public perspectives on prescribed fire and mechanical thinning. Report issued under cooperative agreement PNW 95-0702 between Oregon State University, Corvallis, Oregon; USDA Forest Service, PNW Station Global Protection program, Corvallis, Oregon and Blue Mountains Natural Resources Institute, LaGrande, Oregon. 58 p.


## Alternative Harvest Treatments on the Tongass National Forest

<table>
<thead>
<tr>
<th>Harvest Treatments</th>
<th>Timber</th>
<th>Deer Productivity</th>
<th>Fish productivity</th>
<th>Biological Diversity</th>
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<tbody>
<tr>
<td>Photo Treatment 8</td>
<td>Board feet = 0</td>
<td>Short = high</td>
<td>Short = high</td>
<td>Short = medium</td>
</tr>
<tr>
<td>Cut 0% of 50 acres</td>
<td>Residual damage = 0%</td>
<td>Mid = high</td>
<td>Mid = high</td>
<td>Mid = medium</td>
</tr>
<tr>
<td></td>
<td>Long = high</td>
<td>Long = high</td>
<td>Long = high</td>
<td>Long = medium</td>
</tr>
<tr>
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<td>Board feet = 253,260</td>
<td>Short = high</td>
<td>Short = high</td>
<td>Short = high</td>
</tr>
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<td>Cut 25% of 46 acres</td>
<td>Residual damage = 3.8%</td>
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<td>Mid = high</td>
<td>Mid = medium</td>
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<tr>
<td></td>
<td>Long = medium</td>
<td>Long = high</td>
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<td>Long = medium</td>
</tr>
<tr>
<td>Photo Treatment 4</td>
<td>Board feet = 213,990</td>
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<td>Long = high</td>
<td>Long = high</td>
<td>Long = medium</td>
</tr>
<tr>
<td>Photo Treatment 3</td>
<td>Board feet = 201,180</td>
<td>Short = high</td>
<td>Short = high</td>
<td>Short = medium</td>
</tr>
<tr>
<td>Cut 25% of 47 acres</td>
<td>Residual damage = 5.9%</td>
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<td>Mid = high</td>
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</tr>
<tr>
<td></td>
<td>Long = high</td>
<td>Long = high</td>
<td>Long = high</td>
<td>Long = medium</td>
</tr>
<tr>
<td>Photo Treatment 1</td>
<td>Board feet = 818,330</td>
<td>Short = high</td>
<td>Short = medium</td>
<td>Short = high</td>
</tr>
<tr>
<td>Cut 75% of 55 acres</td>
<td>Residual damage = 19.2%</td>
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<td>Mid = medium</td>
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</tr>
<tr>
<td></td>
<td>Long = medium</td>
<td>Long = medium</td>
<td>Long = medium</td>
<td>Long = medium</td>
</tr>
<tr>
<td>Photo Treatment 7</td>
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<td>Short = medium</td>
<td>Short = high</td>
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<td>Mid = low</td>
<td>Mid = medium</td>
<td>Mid = medium</td>
</tr>
<tr>
<td></td>
<td>Long = low</td>
<td>Long = medium</td>
<td>Long = medium</td>
<td>Long = medium</td>
</tr>
<tr>
<td>Photo Treatment 2</td>
<td>Board feet = 792,000</td>
<td>Short = high</td>
<td>Short = medium</td>
<td>Short = high</td>
</tr>
<tr>
<td>Cut 75% of 54 acres</td>
<td>Residual damage = 5.6%</td>
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<td>Mid = medium</td>
<td>Mid = medium</td>
</tr>
<tr>
<td></td>
<td>Long = medium</td>
<td>Long = medium</td>
<td>Long = medium</td>
<td>Long = medium</td>
</tr>
<tr>
<td>Photo Treatment 9</td>
<td>Board feet = 978,000</td>
<td>Short = high</td>
<td>Short = medium</td>
<td>Short = medium</td>
</tr>
<tr>
<td>Cut 100% of 48 acres</td>
<td>Residual damage = 0%</td>
<td>Mid = low</td>
<td>Mid = low</td>
<td>Mid = low</td>
</tr>
<tr>
<td></td>
<td>Long = low</td>
<td>Long = low</td>
<td>Long = low</td>
<td>Long = low</td>
</tr>
</tbody>
</table>
Social Acceptability of Alternatives to Clearcutting in Southeast Alaska: An exploratory study of the factors affecting judgement

INTERVIEW PROTOCOL

Research goal
This study’s goal is to understand those factors that affect people’s judgement on the appropriateness of different timber harvest treatments on the Tongass National Forest. We recognize that the harvesting of timber creates a series of short- and long-term consequences, and we are trying to understand which consequences are most important to people. We are asking you to help in a research project that explores the factors that affect people’s judgement on the acceptability of harvest treatments on the Tongass National Forest.

Context of the study
This research is part of a large, long-term study being conducted by the Forest Service called the Alternatives to Clearcutting Study, sometimes referred to simply as the “ATC” project. I am a graduate student from the University of Montana exploring only one aspect of this project, the social implications of alternatives to clearcutting. Other graduate students, scientists, and Forest Service researchers are looking at other effects of these new kinds of alternative harvest systems, including the economic effects, the protection of fish and wildlife habitat, and the maintenance of biological diversity. The entire study is intended to assist natural resource managers in choosing the most beneficial management alternatives by providing essential information on the impacts of alternative harvest systems.

In future years, some areas of the Tongass National Forest will be made available for commercial timber harvest, as identified in the Tongass Land Management Plan (TLMP) of 1997. Depending on the area, the harvest treatment will be designed to supply the most appropriate mix of biological and public benefits, although there’s flexibility in most areas in the type and pattern of harvest treatments.

To examine the effects of alternative harvest treatments, the Forest Service offered an experimental timber sale at Hanus Bay on Catherine and Baranof Islands in 1997. The sale had nine timber harvest units, eight of which received a treatment, with the ninth left as a control.

Although the harvesting had a variety of impacts, for the purposes of our study of social acceptability, we reduced the consequences of timber harvest to five major categories: first, the visual effects; second, the amount of wood produced; third, the effect on deer and fish, which are important species for subsistence; fourth, the effect on biological diversity; and fifth, the effect on the trees that remain in the forest, based on the amount of damage created through logging practices. Because of missing information and our desire to reduce the complexity of the study, some factors that may be important, such as soil disturbance, have not been included as consequences of the treatments. Since this is the first phase of a series of studies on alternative timber harvest treatments, when more information about consequences becomes available, it will be used in future studies.
How you can help
For about the next hour I am going to be asking you a series of questions about your reactions to the
different timber harvest treatments at Hanus Bay. First, I'm going to ask you a short series of questions
about your general attitudes toward timber harvesting and forest management on the Tongass National
Forest, and then I'll show you a couple of posters that display what we know about the effects of these
harvest treatments, based on the five categories that I just mentioned. I want you to know that your
participation in this project is entirely voluntary, and you may have no response to any of the questions
that are presented. I want to assure you that your responses are confidential, and that your identity will
not be revealed at any point in this study.
Reserve Treatments

Gap Treatments
INTERVIEW PROTOCOL

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I. General Attitudes for the Tongass National Forest and SE Alaska

Phase 1.

I now would like you to address a series of questions on your general feelings on the Tongass National Forest. Please take your time in answering each question, there is no rush.

1. How many years have you lived in Alaska? 

2. Have you ever lived anywhere else? Where was that?

3. What do you do for a living in southeast Alaska?

4. What is special to you about living in southeast Alaska? Why is that?

5. What about the Tongass National Forest is important to you? Would you develop that further?

6. What is it that you do when you visit the Tongass National Forest?

7. How do you feel about logging on the Tongass National Forest? Why is that?

8. What benefits do you believe result from timber harvest?

9. What negative consequences do you believe result from timber harvest?

10. What role do you see the Tongass National Forest playing in your future?

11. How much attention should be given to preserving nature for its own sake? Why is that?

12. If it were up to you, how would you manage the Tongass National Forest?

13. What barriers, if any, do you perceive to be in the way of management of the Tongass National Forest?

14. Is there anything taking place in southeast Alaska today that you feel decreases your enjoyment of this place you call home?

15. Are there any additional comments you would like to make with respects to your relationship to the Tongass National Forest?

16. As a lead-in to our next sequence of questions, would you explain to me your thoughts on what you think when people ask you about the acceptability of forest management on the Tongass National Forest, how do you define acceptability?
Phase 2.

I now would like to introduce the alternatives to clearcutting study site at Hanus Bay. I have two posters, and there are a series of maps showing where the treatments are located. I also have a handout to give you when we are done with the interview, so that you will have a map and a summary of the study to keep for your future reference.

**SHOW THE FIRST POSTER**

The first poster shows the site context of where the treatments exist on the landscape, and where the study area exists within the Tongass National Forest. I also want to provide the context at a global scale, to demonstrate how much coastal temperate rainforest there is in the world, and where it can be found. As you can see, Alaska holds approximately 40 percent of the world's coastal temperate rainforest.

Here is the Tongass National Forest, which occupies much of the coastal area of southeast Alaska. On the western portion of the Tongass is Baranof and Catherine Islands, and this is where the Hanus Bay site is located. Here is a more focused look at the study site, showing where each of the treatment areas are located. You should be aware that the harvest treatments within this experiment were not the first timber harvests in this area. There had been other timber harvest operations in the same area beginning in the 1960’s, and a series of roads that you see on this map were built during that period.

**SHOW THE SECOND POSTER**

We will be spending a little more time looking at this second poster, which shows the different experimental harvest treatments at Hanus Bay. It also has information about the five major categories of consequences that we talked about earlier. (Point to the rows and columns as necessary to illustrate their contents). Each treatment has a photograph, and along this (row/column) is some information about the effects of the treatment. Let's take a few minutes to look at the poster to address the information that we have.

You have represented before you a menu of information associated with each treatment. I would like to briefly go through each consequence and identify for you in general terms, the reasoning for the displayed information. First, you will notice there is a visual description, which is a short, textual way of describing what you see inside the boundary marked photo and associated computer image. Secondly, you will notice the produced board feet for each treatment under study. This is to give you an understanding as to how much timber was removed and the commercial tree species that were present (one board foot is 12" x 12" x 1"). Thirdly and fourthly, you will find values associated with the anticipated effects of each treatment on deer, fish, and biological diversity. The low-medium-high values are based on a 100 year cycle, where 1 to 20 years is the Short-term, 21 to 80 years is the Mid-term, and 81 to 100 years is the Long-term. These values are not definitive, but rather, professional judgements made by a team of biologists who have many combined years of experience working in southeast Alaska. Much of their research has led to the development of the treatment values. To keep the study manageable, we have reduced the consequences to two previously identified, highly important species - deer and fish. The complexity of the many hundreds of plant and animal species to the project area was reduced to a general aggregation for the development of the biological diversity values. Lastly, you will notice a percentage value for the amount of damage caused to the remaining stand of trees after harvest by helicopter. This percentage is an aggregated average of damage to tree tops, tree crowns, and tree boles. As well, I would like to point out the treatments are ordered in terms of intensity of forest harvest from no harvest to full harvest.

It is important to point out all of the treatments in the study were harvested using a helicopter, since a few of the treatments are possible only by using this operation approach. This study required all treatments to be harvested the same way, otherwise it is impossible to determine what caused the observed response - the treatment or harvest method. This does not suggest common cable yarding systems can not be applied to some of the treatments.
Phase 3.

Now I want to ask you a series of questions about your reaction to each of these treatments. There are no right or wrong answers, I just want to understand what is important to you about these different treatments.

For the first group of questions, I want to know how important each of the categories of effects are to you. Are they very important, somewhat important, or not important? Let's start with how the treatment looks one year after its harvest.

**Effects** *(a card will be made available that can be referenced for scaling)*

1. On a scale of 1 to 5, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important and 1 being not at all important - how would you evaluate the appearance of a timber harvest on the landscape? Why is that?

2. On a scale of 1 to 5, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important and 1 being not at all important - how important is the amount of wood that the treatment produces? Why is that?

3. On a scale of 1 to 5, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important and 1 being not at all important - how important is the timber harvest effects on deer subsistence? Why is that?

4. On a scale of 1 to 5, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important and 1 being not at all important - how important is the timber harvest effects on fish subsistence? Why is that?

5. On a scale of 1 to 5, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important and 1 being not at all important - how important is the timber harvest effects on biological diversity? Why is that?

6. On a scale of 1 to 5, with 5 being very important, 4 being important, 3 being somewhat important, 2 being not important and 1 being not at all important - how important is the timber harvest effects on the amount of damage to the trees left standing in the woods after a timber harvest? Why is that?

II. Levels of Acceptability & Reasons

I would now like to switch the questioning, to identify each treatment and what its general level of acceptability would be to you, and why. We believe context and scale is important when considering these harvest treatments. All of the treatments in the experiment were applied at a scale of approximately 50 acres. Please consider the 50 acre treatment, but as well, consider the treatment at a larger scale, such as an entire watershed - and comment. Are you ready to proceed?

1. Consider Treatment 8

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you? Why is that?
2. Consider Treatment 5

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

3. Consider Treatment 4

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

4. Consider Treatment 3

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

5. Consider Treatment 1

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

6. Consider Treatment 7

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

7. Consider Treatment 2

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

8. Consider Treatment 9

On a scale of 1 to 5, with 5 being very acceptable, 4 being acceptable, 3 being somewhat acceptable, 2 being not acceptable and 1 being not at all acceptable - how acceptable is this treatment to you?

Why is that?

9. Considering all the treatments presented in the photos, and the described consequences, which treatment is most acceptable to you? Why is that?

10. Considering all the treatments presented in the photos, and the described consequences, which treatment is the least acceptable to you? Why is that?
11. Are there any factors not presented on the poster that would affect your judgements as to whether or not a treatment is acceptable?
Thank you. Is there anything else that you would like to tell me?

- Finally, I have a few questions about you that would be useful to know. I have them here. Would you mind proceeding with me and sharing some personal information?

Date __________ Informant's Name __________

Interview/Tape # __________ Interview Location __________

Sociodemographic Data

How old are you? __________ gender? M or F

Where is your current place of residence? __________ # of years? __________

Are you active in subsistence? __________ What resources? __________

Do you own a boat? __________

Have you ever been to Hanus Bay either by sea or by air? __________

How did you use the Hanus Bay area? __________

How many times a year do you use the Hanus Bay area? __________

Current Address:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
To Be Handed Out

Please identify what letter most closely reflects your annual income.

1.  
   (a) $0 - $10,000
   (b) $10,000 - $30,000
   (c) $30,000 - $50,000
   (d) $50,000 - $100,000

Please identify what letter most closely reflects your highest level of educational attainment.

2.  
   (a) less than 8th grade
   (b) some high school
   (c) high school graduate
   (d) some college
   (e) college graduate
   (f) post graduate
Appendix G

Treatment 8 (T8) - No Cut

Treatment 5 (T5) - harvested 25% of the total trees. Small gaps were created ranging in size from ½ to 2 acres. All the trees in the gaps were cut. No trees were cut between the gaps. The net result left 75% of the total number of trees in the unit.
Treatment 4 (T4) – harvested 25% of the total trees. Small, unharvested groups ranging in size from ½ to 2 acres were left. In between the unharvested groups, 1/3 of the trees were removed, more or less equally spaced across the unit. The net result left 75% of the total number of trees in the unit.

Treatment 3 (T3) – left 75% of the trees more or less equally spaced across the unit.
Treatment 1 (T1) – harvested small groups ranging in size from \( \frac{1}{2} \) to 2 acres in size. All trees were harvested in these groups. In between the groups, \( \frac{1}{3} \) of the trees were left more or less equally spaced. The net result left 25% of the total number of trees.
Treatment 2 (T2) – left 25% of the trees in small groups ranging in size from $\frac{1}{2}$ to 2 acres. All of the trees between the groups were harvested.
Treatment 7 (T7) - left 25% of the trees more or less equally spaced across the unit.

Treatment 9 (T9) - Clearcut
5 = very important, 4 = important, 3 = somewhat important, 
2 = not important, 1 = not at all important

Table 4.
Informant totals for "Importance" response data for guiding questions

<table>
<thead>
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<th>Question Category</th>
<th>Very imp.</th>
<th>Important</th>
<th>Somewhat</th>
<th>Not important</th>
<th>Not at all imp.</th>
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<td>7</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Wood produced</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>2</td>
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<tr>
<td>Deer productivity</td>
<td>17</td>
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<tr>
<td>Fish productivity</td>
<td>19</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Bio-Diversity</td>
<td>13</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Damage to stand</td>
<td>6</td>
<td>13</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

5 = very acceptable, 4 = acceptable, 3 = somewhat acceptable, 
2 = not acceptable, 1 = not at all acceptable

Table 5.
Informant totals for "Acceptability" response data for individual stand-level treatments

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