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*"Working to protect the
 natural environment
 of the Tongass, and
 Sitka's quality of life –
 Since 1967"*

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Subject: Iyoutug Timber Sales DEIS Comments

Dear Mr. von Rekowski:

SCS-1

These are comments on the Iyoutug Timber Sales DEIS prepared jointly by the Sitka Conservation Society, Greenpeace, the Tongass Conservation Society and the Cascadia Wildlands Project. We have provided our contact information at the end of these comments.

All of these organizations have a long history of involvement in the planning process on the Tongass National Forest, especially concerning logging and road building. The organizations' memberships include hundreds of Alaskans, many of whom use the Tongass National Forest and are concerned about management of its natural resources and roadless areas. Our members within the Tongass include commercial fishermen, Alaska Natives, tourism and recreation business owners, and hunters and guides. The organizations also represent thousands of Americans living outside of Alaska, all of whom have a stake in the continued sustainability of the Tongass and its wildlands. The groups have a commitment to preserve the integrity of Southeast Alaska's natural environment and protecting its wildlands from unnecessary development. The organizations' staff and members use the project area for subsistence, commerce, recreation, education and health, and would be adversely impacted by the proposed action.

We are submitting supporting references to you via the Forest Service's FTP2 site, and ask that you include all of them in the planning record. They are at: ftp2.fs.fed.us/incoming/chugtong_r10/IY_Comment_References. If there are any cited documents not already in the record that we have inadvertently omitted, please let us know and we will provide them.

I. INTRODUCTION

- SCS-2 The Iyouktug project area contains 40,651 acres and is located on the northeastern part of Chicagof Island in the Iyouktug valley.¹ The preferred alternative, Alternative 3, would authorize the harvest of 43.4 million board feet (MMBF) from 3,332 acres using shovel yarding, cable logging and helicopter yarding systems. 1,394 of the harvested acres lie within inventoried roadless areas. There would be various small sales and one or more large sales designed to meet the needs of large operators.² Proposed road construction under the preferred alternative includes 3.9 miles of temporary road, 2.4 miles of National Forest System (NFS) road. The project would authorize construction of a half mile of the temporary road and 1.6 miles of NFS road in the inventoried roadless areas.
- In our view, this large sale with its attendant road construction and incursions into the roadless area should be reconsidered. In view of the alternatives provided, we support the no action alternative and request that you cancel this sale. If you decide to proceed with the sale, we request that it be dramatically downsized. We appreciate the effort to develop a small sale alternative but in this project area even Alternative 5 has flaws.
- SCS-3 We will preface our comments with our general impressions - the project area, when viewed in its entirety, is not suitable for the scale of the proposed project. It takes too much timber from too small of an area in a wet place that grows slowly. Clearcuts on private land have transformed the adjacent watershed into a wasteland. Extensive clearcuts and road construction have also degraded public lands in the project area. The proposed cutting units and methods ignore the ecological condition of the project area, particularly vulnerability to windthrow, soil conditions and slow regeneration rates. And even though we generally would prefer to see alternatives to clearcutting, in view of the high windthrow potential in this area, the proposed selective cutting measures carry unjustifiably high risks.
- SCS-4 The only forested areas remaining are extremely sensitive ecological areas that are difficult and costly to work in. And these remaining areas provide critical wildlife habitat that should not be disturbed in view of severely weakened local deer populations. Because of these and other concerns, the project analysis inappropriately assigns too much weight to the economic need rationale based on a flawed market analysis and does not adequately balance the other multiple uses of the project area against the purported economic need.
- SCS-5 Before we begin our comments on the issues identified as driving the alternatives, we would like to raise our concerns regarding whether it is appropriate to begin planning this project in light of the decision in NRDC v. U.S. Forest Service, offer some suggestions about expanding or modifying the range of alternatives and request that the agency begin addressing climate change in more detail in your NEPA documentation.

A. The Iyouktug Project Is Based On An Arbitrary And Unlawful Forest Plan

Planning on the Iyouktug project is directly reliant on the 1997 TLMP. However, the 9th Circuit recently invalidated the TLMP in NRDC v. U.S. Forest Service. The decision in NRDC v. U.S. Forest

¹ DEIS 1-3.

² DEIS, 2-3.

- SCS-5
(cont.) Service requires the Forest Service to prepare a new forest plan – a plan that reportedly will be available to the public in December of 2007.
- 40 C.F.R. § 1506.1(c) governs actions proposed during a period when a federal agency is preparing a programmatic environmental impact statement. If an action is not covered by an existing program statement, “agencies shall not undertake in the interim any major Federal action ... unless such action: (1) [i]s justified independently of the program; (2) [i]s itself accompanied by an adequate environmental impact statement; and (3) [w]ill not prejudice the ultimate decision on the program.” 40 C.F.R. § 1506.1(c)(1)-(3). “Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.” 40 C.F.R. § 1506.1(c)(3).
- SCS-6 Under the illegal 1997 TLMP, this timber sale would illegally settle the fate of this area by committing roadless areas to developed status and eliminating options for preserving it for other multiple uses through the court-mandated revision of the 1997 TLMP. Another significant problem which we will discuss in more detail in following sections is that the sale is justified in part by a flawed market demand analysis that should be revised in the new Forest Plan. This DEIS should be rescinded pending the development of new Forest Plan.
- SCS-7
- SCS-8 B. The Range of Alternatives Is Unreasonably Restricted
- Consideration of alternatives is the “heart” of the EIS and an important obligation under NEPA.³ We appreciate the effort to address each of the three major issues identified in the DEIS: (1) impacts on deer habitat and fragmentation; (2) impacts on roadless areas and (3) economic viability. But as SCS pointed out in scoping comments, the size of the project given Hoonah mill capacity is perplexing. We requested downsized alternatives designed to meet the needs of local operators and consideration of multiple alternatives that build no new roads and do not enter inventoried roadless areas.
- SCS-9 But the DEIS does not present one alternative that comprehensively addresses all three issues or even two of the three issues. Instead, alternatives are presented in a format that seem to direct the decision maker to make an either/or choice between protecting deer habitat, protecting roadless values and maximizing economic viability.
- SCS-10 Alternatives 2, 3 and 4 all propose large harvests in excess of 35.1 MMBF which will occur through several small sales and one or more large harvests. As an initial matter, we appreciate the fact that you did not designate Alternative 2 as the preferred alternative. The objective of Alternative 2 was to maximize timber harvest and we agree that it does not adequately address the three alternative-driving issues identified in the DEIS.
- SCS-11 Only Alternative 5 focuses on economic viability. Thank you for offering an alternative that occurs exclusively through smaller sales. Unfortunately, this alternative also invades inventoried roadless areas and would authorize construction of 7.2 miles of road, further fragmenting deer habitat. The DEIS indicates an alternative that would use only ground based harvest and preclude harvest or construction in roadless areas was rejected on the ground that it was similar to alternatives 2, 4 and 5. Please clarify this statement in further stages of your NEPA analysis. Only Alternative 4 excludes roadless areas from harvest while Alternatives 2 and 5 both enter roadless areas. Given the public and

³ 40 C.F.R. § 1502.14

- SCS-11 (cont.) | scientific support for protecting roadless areas, there should have been more than one alternative that did not include roadless sales.
- SCS-12 | We appreciate the fact that the preferred alternative, Alternative 3, seeks to address one of our major concerns with regard to impacts on deer habitat and fragmentation. But there would also be 1,394 acres harvested in the inventoried roadless areas and there will be a large sale component that does little for local timber operators. Moreover, even this alternative would construct 6.3 miles of road, including 1.6 miles of road in inventoried roadless areas. The project area already has an extensive road network. It is undisputed that roads are detrimental to wildlife and the total road construction for this alternative is only about twenty to thirty percent less than in alternatives 3 and 5.⁴ The DEIS concedes as much by acknowledging in the cumulative effects analysis that there will be reductions in riparian and elevational corridors.⁵
- SCS-13 | Also, it is well documented that the winter of 2006-2007 had severely detrimental impacts on deer populations. Even if all roads are eventually closed, the simple fact of road construction and use will fragment habitat at a time when deer populations are already weakened. A recent emergency order from the state Department of Fish and Game expresses one of our most serious concerns:
- The [Northeast Chichagof Controlled Use Area] received record snowfall during the winter of 2006-07 and Wildlife Conservation staff conducted deer mortality surveys throughout the region in the spring of 2007. These surveys indicated that some locations in Northern Southeast Alaska, including the Northeast Chichagof Controlled Use Area, experienced substantial winter-related deer mortality. October deer surveys appear to confirm a significant reduction in the deer population from previous years. Roads permit vehicle access into all major watersheds resulting in a popular deer hunting area for local and non-local hunters. Additional doe harvest beyond the closure date in this emergency order would be excessive and may jeopardize the future productivity of this herd.⁶
- SCS-14 | We request that, at a minimum, a SEIS be produced that responds to current deer population status and the high road density in the area by providing an alternative that does not propose any new road construction. | Also, we note that a reduction in subsistence deer harvest was not considered an issue driving alternative. | In view of this more recent data indicating that the future productivity of the herd may be jeopardized by additional doe mortality, we believe that the viability of the deer population itself should be considered in addition to fragmentation as an alternative driving issue in a SEIS. 40 C.F.R. § 1502.9 requires supplementation when “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”
- SCS-16 |
- SCS-17 | Alternative 4 protects roadless area characteristics by eliminating proposed cutting units in inventoried roadless areas. But Alternative 4 does little to address the issues of deer habitat fragmentation and economic viability. Instead, there is a large sale component, 8.8 miles of road construction and more intensive harvest in the roaded areas.

⁴ See DEIS 3-22.

⁵ DEIS 3-22.

⁶ Alaska Department of Fish and Game, Hunting and Trapping Emergency Order at 2 (November 6, 2007).

- SCS-18 | We are not fully convinced that a downsized alternative is impracticable despite the rationales provided in the DEIS. One reason provided for rejecting a downsized alternative was that there is only access to 5 MMBF of timber using existing roads which would not satisfy the needs of the project. But if one of the purposes of the project is to supply local sawmills, the 5 MMBF available using existing roads would be nearly a two year supply that could be used to supplement the 20 MMBF available through the nearby Couverden sale. In this case, there would be enough timber to tide over local mills.
- SCS-19 | The DEIS also rejected harvest using existing roads and helicopters because the removal costs implicated in helicopter harvest does not meet the needs of local sawmills and timber operators. Please discuss the analysis that supports this conclusion. Is the problem that small operators are not able to helicopter yarding, or is the issue that small mills have competitive bidding disadvantage when compared to larger operations that would harvest these trees for export? If that is the case, please clarify that in future NEPA documentation.
- SCS-20 | Also completely missing is any consideration of alternatives with regard to transportation management. In Cascadia's scoping comments, we drew special attention to the need for alternatives in transportation and roads. This project is locking us in for a long haul of road maintenance and high road densities, blindly. The Draft EIS is non-responsive to that request to consider alternatives. We renew that request. Please consider:
- Various amounts of road closures;
 - Alternative road closure methods, such as obliteration, storage, or classification and gating;
 - Can roads be closed *except for* subsistence use? What options are available to pull drainage structures for maximum fish benefits, while leaving enough key trails for ATVs to hunt.
 - Maintenance actions dealing with erosion, in particular sinkholes or other problem features over karst;
 - Fixing culverts for fish passage (It is necessary for Clean Water Act compliance to fix *all* culverts that have identified fish passage problems)
- SCS-21 | As we express in more detail in the "Transportation" section below, there are important problems and missed opportunities with regard to roads in the project area, that should be considered for solution in the FEIS. Also, an alternative should be brought forward that doesn't build any new road.
- SCS-22 | One of the reasons provided for rejecting an alternative that would construct no new permanent roads on the ground that there is potential for more than one entry or for future production. Given the scale of the proposed sale, the slow growth rate of timber in the project area and the extensive harvest that has already occurred, we are concerned about this rationale. In light of the general ecological condition of the project area, please explain why there is potential for future production, when this future production could be anticipated to occur, and why permanent roads must be constructed now.
- SCS-13 | Finally, as the Couverden Timber Sales ROD indicates, it is possible to develop alternatives that meet the needs of small mills without any extensive road construction. Small sales are defined as sales of

SCS-23 | less than 1 MMBF and perhaps as small as tens of thousands of board feet.⁷ The Couverden ROD included a provision for small sales along the existing road system.⁸ This ROD indicates that it should be possible to develop an alternative that, like Alternative 5, focuses on small sales. It also indicates that it would be possible to develop a small sales alternative that does not construct new roads. We recognize that the Iyouktug project area may be different from the Couverden project area in that there may be an even smaller amount of economical timber that is accessible from existing roads. But this does not excuse the failure to provide the type of alternative we requested in our scoping comments.

SCS-24 | For the above reasons, the DEIS does not supply an adequate range of alternatives. The preferred alternative that purports to minimize fragmentation of deer habitat does not substantially differ from the other alternatives in terms of total road construction. Future road closures will not help deer populations in the future if they are not protected now when they are imperiled. Further, these speculative benefits are offset by the amount of timber removed under this alternative. Also, there was no alternative provided that minimizes fragmentation of deer habitat, eliminates incursions into roadless areas and ensures economic viability for local timber operators. None of the alternatives adequately addressed two of the three issues. | NEPA mandates that the range of alternatives

SCS-25 | considered should not be unreasonably restricted. We request that you produce a revised DEIS that offers an alternative or several alternatives that do not force the decisionmaker make a choice between fragmenting deer habitat and invading roadless areas.

C. In General, the DEIS Does Not Address Known and Possible Cumulative Effects of Climate Change

SCS-26 | We will address our concerns about climate change in these comments as they pertain to specific issues. But we request that future environmental impact statements contain a separate discussion in the Environment and Effects section analyzing the cumulative effects of the project in terms of climate change. We recognize that making forest management decisions in light of the uncertainties about the possible effects of climate change on the Tongass is fraught with uncertainty.

SCS-27 | But the uncertainties about the possible effects of climate change are less speculative than the assumptions underlying the market demand analysis. It is clear that global temperatures are rising and it is therefore possible to address environmental concerns that pertain to long-term temperature increases. 40 C.F.R. § 1502.22(b)(1) provides appropriate guidance for addressing the uncertainties about climate change: even where the probability of catastrophic consequences is low, there should be a statement indicating the relevance of the incomplete information, summary of existing credible scientific evidence relevant to possible impacts, and your evaluation of the impacts based on generally accepted approaches or research methods.

We add that our request for a detailed analysis of climate change conforms to policy concerns addressed in NFMA - the Secretary of Agriculture is to analyze the potential effects of climate change in the decennial Renewable Resource Assessments and once every five years there is to be an "account for the effects of global climate change on forest and rangeland conditions, including potential effects

⁷ Couverden Timber Sales ROD at R-8.

⁸ *Id.* at R-9.

SCS-27 | on the geographic range of species, and on forest and rangeland products.”⁹ Even though these pronouncements may not impose any specific duties on regional forest planners, they provide policy guidance from Congress regarding the type of discussion that we believe should be included in NEPA analysis in order to ensure that the decisionmaker has taken the requisite “hard look” at the cumulative effects of the project.

SCS-28 | One specific example that is highly relevant in light of the alternative driving issues is the effects of climate change on deer. It is well established that severe winters can result in a major crash of deer populations for periods of up to 30 years.¹⁰ “Climate change predictions for Southeast Alaska indicate the likelihood of extremes of warm and cold during future winters, along with much greater precipitation.”¹¹ This means that the winter of 2006-2007 may not be an anomaly so much as a new climactic paradigm. This problem alone, in our view, is cause for an SEIS in light of the possible impacts of this sale on deer populations.

SCS-29 | Because we understand that federal agency responses to climate change are an evolving issue, we request for the purposes of this project that you discuss climate change with respect to specific issues highlighted in our comments. But under 40 C.F.R. § 1502.9, the need for climate change discussion warrants production of a revised DEIS because it is hard to meaningfully analyze the impacts of this project without considering the reality and cumulative effects of rising global temperatures.

II. COMMENTS ON SIGNIFICANT ISSUES

A. Habitat Connectivity and Old Growth

SCS-30 | . Deer use old growth forest corridors to move between low elevation winter habitat and high elevation summer habitat and migratory corridors in the project area have been affected by previous harvest so that additional harvest and road construction would further reduce habitat connectivity by removing additional low elevation forest and travel corridors. In our scoping comments, we pointed out that previous timber entries clearcut large blocks of forest at low elevations and in valley bottoms which left large portions of the project and surrounding areas in early successional or stem-exclusion phases which have been shown to be detrimental to old-growth associated wildlife species.

SCS-31 | The proposed harvest would focus on the few remaining big tree forests available for deer. Road construction and clearcutting would further fragment migratory corridors. The project will occur in an area that already has high sustainability for risks to wildlife due to significant logging on public and private lands. [Also, the DEIS does not fully acknowledge the severity of the 2006 winter. Hoonah residents discovered extensive evidence of winter kills and report that there are no deer to harvest in the area this year. They describe the project area as the “only sanctuary nearby” for deer. The Iyoutug project would further endanger an already troubled deer population in an area where village residents rely on wild foods as part of the economy.

⁹ 16 U.S.C. § 1601(a)(5); 16 U.S.C. § 1601(5)(F).

¹⁰ State of Alaska Comments on the Tongass Land and Resource Management Plan Amendment and Draft Environmental Impact Statement (April 27, 2007).

¹¹ *Id.*

2. The Preferred Alternative and Connectivity

SCS-33

We have particular concerns about the connectivity reductions in the area around the North Fork of Iyouktug Creek. The west end of the North Fork has already been subject to timber harvest and the preferred alternative would authorize clearcutting the east end of the fork and build a permanent road to access the cable clearcut harvest units. Please drop these units from the sale as well as the proposed road construction if you proceed with this alternative. Otherwise, the addition of these units to an alternative designed to ensure connectivity for deer is perplexing – particularly because the units also lie within a roadless area that provides added protections for deer.

SCS-34

In the past, there have been NEPA documents that identified specific corridors that would be preserved for wildlife. The discussion in the Iyouktug DEIS contains a general analysis of connectivity but fails to identify specific corridors. Please provide a map or detailed analysis in subsequent NEPA documentation that clearly delineates migratory corridors in the project area. The analysis should indicate the width of travel corridors, identify barriers and indicate elevations. It is difficult to fully analyze connectivity without an appropriately scaled map.

3. Cumulative Effects:

SCS-35

The DEIS ultimately concludes that “the cumulative reduction of elevational connectivity in association with a cumulative reduction in deer habitat capability as a result of past, proposed and future harvest activities and a severe winter in 2006 will likely result in a decline in the deer population. But the DEIS seems to rely on the assumption that “the Forest Plan conservation strategy maintains the population viability of deer.” As discussed in our deer section, this assumption is based on an erroneous application of the deer habitat capability model. Moreover, the Forest Plan conservation strategy does not account for what happened last winter - there is no need to predict a “likely decline in the deer population” because recent surveys demonstrate that this decline has already occurred. In view of this decline, the ability of Forest Plan standards and Guidelines to ensure population viability of a herd that is already in jeopardy is questionable. In future NEPA documentation, please detail how the Forest Plan standards and guidelines will ensure the population viability of specifically imperiled herds and analyze connectivity in view of the fact that local herd population declines are not a “likely result” but are instead an immediate reality.

SCS-36

B. Impacts to Inventoried Roadless Areas (IRAs) are Unjustified

There are significant portions of three IRAs in the project area: 11,245 acres from the 15,629 acre Point Augusta IRA, 5,430 acres from the 5,747 acres Whitestone IRA and 8,488 acres from the 47,040 acre Freshwater Bay IRA.¹²

In SCS’s scoping comments, we expressed concern about the proposed action, Alternative 2, which would have allowed half of the total logging and a third of the road construction within the project area’s IRAs. Thank you for not designating Alternative 2 as your preferred alternative - it would

¹² DEIS, 3-22.

SCS-36
(cont.)

remove 18 percent of the acreage from the Point Augusta IRA that is within the project area and nearly one-third of the acreage from the Freshwater IRA.¹³

But the preferred alternative, Alternative 3, also would constitute a significant incursion into the IRAs – there would be 729 acres of timber harvest and 2 miles of road construction in the Point Augusta IRA and 728 acres of timber harvest and .2 miles of road construction in the Freshwater Bay IRA.¹⁴ This would result in a 12 percent reduction in acreage retaining roadless characteristics for the Point Augusta IRA in the project area and a 28 percent reduction in the acreage retaining roadless characteristics in the Freshwater Bay IRA.

In general, we believe that these roadless areas should be preserved in their natural state. This is the most valuable use of these areas from an ecological, aesthetic and economic standpoint. The uniqueness of these areas creates economic value and an economy based on those who come to see, live close to, study or otherwise benefit from that uniqueness. And these areas provide ecological benefits to wildlife that are unavailable in developed areas.

Therefore, we believe that this significant incursion into the last remaining roadless areas on the northeastern portion of Chichagof Island is unjustified. Given the high profile debate over the management of roadless areas in recent years, particularly on the Tongass, we can see no valid reason for moving forward with any project that directly or indirectly degrades roadless areas and associated resources. There is strong public support for protecting roadless areas in the Tongass. Further, in view of the strong scientific support for protecting Tongass roadless areas, we request that this project be cancelled.¹⁵

SCS-37

We have identified three specific concerns in the discussion below. First, we question whether the incursion is justified in view of the minimal or negative economic benefit. Second, the project forecloses any future opportunity to have these areas designated as wilderness areas. Third, the project would significantly impair special roadless values - these areas are virtually the last un-logged and un-roaded fish and wildlife habitat on north eastern Chichagof Island. The roadless areas contain the majority of the bald eagle nests in the area, provide valuable habitat for foraging bears, migration corridors and winter habitat for deer and half of the winter habitat for marten.

1. There is no economic benefit gained from degrading the roadless areas.

In view of the minimal or negative economic “benefit” derived from the proposed project, there is no valid reason to compromise these areas. Alternative 5, for example, was designed to maximize the economic viability of the timber sales. Notably, Alternative 5, which would harvest 239 acres, construct 2.1 miles of road and indirectly affect another 1,084 acres in the IRAs, does not impact nearly as much of the IRA acreage as Alternatives 2 and 3, which would each harvest more than 1,600

¹³ DEIS, 3-32.

¹⁴ DEIS, 3-31.

¹⁵ *See e.g.*, Powell, R.A. et al. (Oct. 1996): “Joint Statement of Members of the Peer Review Committee Concerning the Inadequacy of Conservation Measures for Old-growth Associated Wildlife Species”; Powell, R.A., et al. (Sept. 1997): “Joint Statement of Members of the Peer Review Committee Concerning the Inadequacy of Conservation Measures for Vertebrate Species in the Tongass National Forest Land Management Plan of Record.”

SCS-37
(cont.)

acres from the roadless areas.¹⁶ This contrast between the alternatives justifies the inference that any economic benefits derived from the sale decreases in proportion to increased impacts to the roadless areas. Furthermore, the DEIS indicates in Alternative 4 that there could be as much as 35.1 MMBF harvested in the project area without entering the roadless areas. This clearly establishes that even if there is a need to have a large sale, that sale could occur without degrading roadless values.

In your further NEPA documentation, please provide a detailed analysis of the economic costs and benefits that addresses only the proposed harvests in the roadless areas. A fully informed decision maker should be fully aware of the exact benefit accruing from a decision that would severely compromise these areas.

SCS-38

Also, the emphasis on helicopter yarding also undercuts any local economic benefit to be gained from entering the IRAs. As noted in a recent report:

[I]t is obvious that the value of domestically processed timber does not support the added cost of helicopter logging as reported in this study. It is an excellent logging tool but helicopter logging is too expensive for operation in all but the highest-valued stands in Alaska or sales that receive export waivers for processing logs.¹⁷

Based on this report, it appears that the proposed helicopter logging in the roadless areas would have two unjustifiable results: (1) the most valuable ecological areas in the roadless areas will be degraded by high-grading the most valuable timber or (2) the roadless areas will be invaded for the primary economic benefit of timber processors overseas or in the lower 48. Please provide a detailed analysis that discloses the economic and ecological values of the timber that would be harvested from the roadless areas and compares those values with timber in the roadless areas that will not be harvested.

SCS-39

Also, please address whether there is any reason to believe that the helicopter logging proposed to occur in this sale would be an exception to the proposition quoted above: that helicopter logging does not pay unless there is an export waiver granted. In the absence of that data, it is hard to be fully informed about whether there is any economic justification for the incursions into the roadless areas.

SCS-40

2. Concerns About Potential Loss of Wilderness Areas

We are concerned about the continual loss of potential Wilderness areas on the Tongass and the impacts these losses will have on local economies as well as fish and wildlife. The DEIS indicates that under all alternatives there would still be 5,000 acre blocks qualifying for wilderness consideration. This rationale suggests that the incursion does not compromise a possible wilderness designation primarily based on the remaining roadless acreage.

This discussion is inadequate. There has been ample research on the extreme variability of the habitat quality and landform variability of the Tongass – only a small portion of the total area provides high quality habitat. Please evaluate impacts on the wilderness qualities of the roadless areas in terms of whether the remaining acreage is sufficient to maintain ecosystem integrity, wildlife habitat and

¹⁶ DEIS at 3-31.

¹⁷ Linda E. Christian and Allen M. Brackley, "Helicopter Logging Productivity on Harvesting Operations in Southeast Alaska, Using Ecologically Based Silvicultural Prescriptions." West.J.App..For.22(2) (2007).

SCS-40
(cont.)

primitive recreation opportunities in productive old growth forests. Please also include in this analysis in terms of percentage the amount of the project area that is already roaded or designated for timber production.

SCS-41

3. Roadless Areas Are Critical to Biodiversity and Species Viability

The DEIS indicates that there is some high value fish habitat within the IRAs includes the Iyouktug Creek Estuary and outlets, the main channel of Iyouktug Creek, the north Fork of Iyouktug Creek.¹⁸ 78 of 96 mapped eagle nests along the coast of the analysis area are contained in the roadless areas.¹⁹ There are high use bear areas in each IRA – there is late summer use of estuary and low elevation segments of Iyouktug Creek and there are high use areas along Iyouktug, Suntaheen and Whitestone Head creek.²⁰ The Freshwater Bay IRA provides high elevation summer habitat for marten and the Point Augusta IRA provides half of the high value marten winter habitat in the project area. There was evidence of concentrated deer use found in each IRA.²¹ The Freshwater Bay IRA has high elevation summer habitat and the Point Augusta and Whitestone IRAs include low elevation habitat that maintains connectivity for deer and more high value deer winter habitat.²²

We quote from comments on the roadless draft EIS specialist report on the Tongass (Johnston, May 2000, Biological Resources Effects): “[t]he Tongass is unique [from other national forests] because the majority of subsistence and game species are integrally linked to the habitat qualities provided by unroaded areas.” Also:

Because relatively little is known about the current status, needs and response to management activities for some species on the Tongass, conservative management approaches that emphasize retention of roadless areas may provide a necessary “buffer” to ensure higher likelihoods of maintaining biodiversity and species viability.

We add the following general comments about the impact of roads and road maintenance on natural environments: “[r]oads and the maintenance of roads impact natural environments in many ways. Roads increase air and water pollution, promote the spread of invasive exotics, reduce watershed integrity, compromise fish and fish habitat, increase surface erosion and landslide potential, and are associated with declines in wildlife numbers.”²³

¹⁸ DEIS, 3-26.

¹⁹ DEIS, 3-26.

²⁰ DEIS, 3-26.

²¹ DEIS, 3-26.

²² DEIS, 3-26.

²³ Dominick A. Dellasala & James Stritholt, Impact of Inventoried Roadless Areas and Unroaded Lands to Oregon’s Natural Heritage (Comments on Oregon’s Roadless Petition to the Bush Administration (2006) (citing Andrews, A. 1990. Fragmentation of habitat by roads and utility corridors: A review. Australian Zoology 26:130-141; Furniss, M.J., T.D. Roelofs, and C.S. Yee (1991. Road Construction and maintenance. In W.R. Meehan, ed. Influences of forest and rangeland management on salmonid fishes and their habitats. American Fisheries Society Special Publication 19. Bethesda, MD.; Reed, R.A., J. Johnson-Barnard, and W.L. Baker. 1996. Contribution of roads to forest fragmentation in the Rocky Mountains. Conservation Biology 10:1098-1106; Spellerberg, I.F. 1998. Ecological effects of roads and traffic: a literature review. Global Ecology and Biogeography Letters 7:317-333 and Trombulak, S.C., and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18-30.

- SCS-42 | Also, much of the proposed harvest in roadless areas will occur through helicopter yarding. Although helicopter yarding may have fewer permanent impacts than road construction, it is hardly benign with regard to wildlife. "Aircraft overflights may cause flushing of birds from feeding or nesting areas, alteration of movement or activity patterns, decreased foraging efficiency, panic running of big game animals, decreased young survival, and increased heart rates in big game."²⁴ It is clear that the closer the aircraft, the more likely an animal will be stressed, and helicopter overflights are more stressful than fixed wing overflights.²⁵
- SCS-43 | In addition to disturbances caused by the helicopters themselves, helicopter yarding in partial cut units is almost certain to result in high-grading the largest, most valuable trees. Please discuss the impacts of helicopter yarding in view of the unique role roadless areas have in ensuring wildlife population viability.
- SCS-44 | In view of these concerns and the recommendation to conservatively manage roadless areas and maintain them as a buffer to maintain biodiversity and species viability, please omit the roadless areas from any final decision if you elect to proceed with this sale. In particular, the current status of deer populations makes any degradation of roadless area habitat unjustifiable.

4. Other Concerns: Ecological and Recreational Values

- SCS-45 | Alternative 2 would have authorized the harvest of 73 acres of karst. Thank you for not identifying Alternative 2 as the preferred alternative.
- There were 5,489 acres of karst identified and 59% of those acres are in the Freshwater Bay IRA.²⁶ The DEIS indicates that an estimated 1,102 acres of previously unmapped karst was identified in the Point Augusta IRA during project reconnaissance that was not included in the proposed Geologic Special Interest Area.²⁷ Please explain why this unmapped karst was not included and please disclose the extent of the project reconnaissance – is there a possibility that there may be additional unmapped karst in the IRAs? **Information may be in planning record**
- SCS-46 | Also, there are two listed rare plants found in the project area – Galium kamtschaticum and Listera convallarioides and 25 of 57 sightings were in the Point Augusta & Freshwater Bay IRAs.²⁸ Undesirable non-native plants grow near roads and were not found in the project area IRAs.²⁹ But there are five invasive plant species found on the Hoonah road system that are moderately to highly

²⁴ USDA Forest Service, 1999. Wildlife Report: Commercially Guided Helicopter Skiing on the Glacier and Seward Ranger Districts. Unpublished report by Theron E. Schenck II, Chugach National Forest Supervisors Office.

²⁵ USDI National Park Service. 1994. Report to Congress: Report on effects of aircraft overflights into the National Park system. Washington D.C. www.nonoise.org/library/npreport/intro.htm.

²⁶ DEIS at 3-25.

²⁷ DEIS at 3-26.

²⁸ DEIS at 3-26-27.

²⁹ DEIS, 3-27.

- SCS-46
(cont.) | invasive.³⁰ The DEIS only indicates that these plants “pose a threat and should be prevented from spreading into the project area and otherwise controlled or eradicated where possible.”³¹
- SCS-47 | Please disclose in your further NEPA analysis whether road construction will introduce invasive plants and the extent to which invasive plants could encroach on listed rare plant species. Please explain how procedures to control or eradicate invasive plants will be different from procedures used in the past on the Hoonah road system because past procedures apparently have not been effective in preventing the spread of invasive plants. Please disclose what herbicides would be used, if any. Also, please include a cumulative effects analysis that discusses the impacts that climate change has on listed rare plants and on the potential for invasive plants to take root in the project area.
- SCS-48 | With regard to roadless area recreation, the DEIS indicates that all three IRAs in the project area rated moderate or low for solitude and self-reliant recreational opportunities due to the small size and narrowness of IRAs, but the opportunities for primitive recreation are high due to easy access.³² The DEIS concludes that the degree of influence on recreational opportunities is minor because there would be no harvest in the Whitestone IRA. As discussed below, we disagree with this conclusion based on the growth of the outdoor recreational industry.
- SCS-49 | For the above reasons, should the agency move forward, we specifically request that no entry into the inventoried roadless areas be allowed.

SCS-50

C. The Project is not Economically Viable, Particularly in View of Multiple Uses

The purposes of the project are the following: (1) to maintain and promote wood production from suitable timber lands, providing a supply of wood to meet society’s needs; (2) to provide a stable supply of timber that meets the annual planning cycle market demand while managing land for sustained long-term yields consistent with sound multiple-use and sustained-yield principles; (3) to provide a long-term, stable supply of timber for local sawmills and timber operators and (4) provide a diversity of opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska to support a range of natural resource employment opportunities within Southeast Alaska’s communities.³³

1. Proposed helicopter yarding and road-building may reduce the economic viability of the timber sales because small operators need local, economical timber to stay in business.³⁴

First, we note the high cost of accessing the remaining timber to the public - the 17.2 miles of road and 17 bridges constructed or reconstructed by the Forest Service will cost the public \$4,400,482.00. Similarly, as we previously noted, the costs also seem high for local timber operators – extensive helicopter harvest significantly undercuts any economic benefit that would be derived from the

³⁰ DEIS 3-51.

³¹ DEIS 3-51.

³² DEIS 3-27.

³³ DEIS, 1-4.

³⁴ DEIS, 3-36-37.

- SCS-50 (cont.) | incursion – it costs between 30 and 40 percent more per thousand board feet (MBF) to harvest timber using helicopters.³⁵
- SCS-51 | The DEIS indicates that helicopter logging costs have decreased between \$30 to \$50 per MBF.³⁶ Please clarify whether this is meant to indicate a reduction from the average cost of \$338 per MBF. Our understanding based on Christian and Brackley's recent paper is that costs increase as levels of retention decrease.³⁷ If this is correct, the 25% partial cutting units would be at the high end of helicopter logging costs. Please discuss the economics of helicopter logging in more detail.
- SCS-52 | For these reasons, we do not understand how the large size of the project aligns with the needs of local sawmills on eastern Chichagof Island. D & L woodworks employs two people and produces 100 MBF per year, and Icy Straits Lumber employs 20 people and has a mill capacity of 5 MMBF annually but currently mills 3 MMBF with 15 employees.
- Moreover, the Couverden Timber Sales ROD was issued in July 2005 and makes available 23 MMBF of timber in a project area that is 13 miles northeast of Hoonah.³⁸ That ROD made meeting the needs of smaller mills from the Couverden project area a priority.³⁹ According to the Couverden ROD, "[t]his decision virtually guarantees a wood supply for local small mills over the next ten years if they choose to take advantage of it."⁴⁰
- SCS-53 | Also, as indicated in our comments on the "Transportation" section, we feel that the long-term costs of the proposed transportation system are not fully accounted for. Please insure that the logging costs fully include road maintenance, and lost opportunity cost of decommissioning or storage. This important factor does not appear to be included in the NEAT model.
- SCS-54 | **2. The DEIS Relies On A Misleading Demand Analysis**
- The Tongass Timber Reform Act (TTRA) provides that the Forest Service must provide a timber supply that (1) meets annual market demand for timber from the forest and (2) meets the annual market demand from the forest for the planning cycle. In August of 2005, the 9th Circuit Court of Appeals ruled that a previous error in calculating demand required the Forest Service to revise the Forest Plan. In response, new timber demand projections were completed and published in 2006.⁴¹ As part of the justification for this large sale, the DEIS indicates that annual market demand for FY 2007 is 131 MMBF.

³⁵ See DEIS at 3-39-40.

³⁶ DEIS at 3-45.

³⁷ Linda E. Christian and Allen M. Brackley, "Helicopter Logging Productivity on Harvesting Operations in Southeast Alaska, Using Ecologically Based Silvicultural Prescriptions." West.J.App..For.22(2) (2007).

³⁸ DEIS, 3-26.

³⁹ Couverden Timber Sales ROD at R-1.

⁴⁰ *Id.* at R-5.

⁴¹ *Id.* at R-5.

⁴¹ Brackley et al., 2006.

SCS-54
(cont.)

As a matter of common sense, we think this figure is unrealistic. Since 1996 the backlog of uncut timber has exceeded the amount logged each year.⁴² By 2001 the harvest volume was less than an eighth of the volume under contract.⁴³ At no time during the last six years has the volume sold or cut even approached the 131 MMBF proposed as the annual demand for FY 2007. Instead, recent logging levels have ranged from 33.8 to 50.8 MMBF during the last five years. Moreover, the DEIS acknowledges the forest products employment in Southeast Alaska dropped from 2002 people in 1995 to 499 people in 2005 - a regionwide drop of 300% drop in timber industry employment over the past decade, suggesting a significant decline in demand for Tongass timber.⁴⁴

SCS-55

The DEIS arrives at the 131 MMBF figure using Dr. Allen Brackley's 2006 harvest projections.⁴⁵ The new model contains four scenarios that project a turn-around in market demand from the long-term decline that began in the 1970s.⁴⁶ We believe that this optimistic assessment depends on three unrealistic assumptions - the same flawed assumptions as the model rejected by the 9th Circuit in *NRDC v. U.S. Forest Service*. More recently, a 9th Circuit District Court enjoined the Forest Service from offering the Threemile Timber Harvest Sale because of the need to update long-term market projections.⁴⁷ Because the market demand analysis used to justify the sale here suffers from the same defects, this sale is also a likely candidate for an injunction should it proceed.

SCS-56

We incorporate by reference the April 30, 2007 comments of The Wilderness Society on the Tongass Forest Plan Revision DEIS. We have attached a copy to our comments. Also, we will summarize the key points in the following discussion.

First, the Brackley model assumes that Pacific Rim markets remain viable and that those markets determine domestic (lower 48) demand for Tongass forest products. At one time this assumption made sense because Japan was the dominant market for softwood lumber sawn from Tongass timber. But economic factors internal to Japan as well as a shift in demand from green lumber to kiln-dried lumber and engineered wood products have reduced the interest in Alaskan timber.⁴⁸ Exports from Alaska to Japan have declined from 400 mmbf in 1973 to less than 25 mmbf in recent years.⁴⁹ Nor is there any basis to assume that market demand in other Pacific Rim countries would be similar to the bygone Japanese market.

Also, this drop has corresponded to a decline in market share - North American lumber shipments dropped from 88% to 49% of Pacific Rim lumber imports from 1990 to 2004.⁵⁰ But the scenarios in Brackley's new model rely on the assumption that the market share will either remain constant or that Alaska's market share will increase.⁵¹ Given the high costs of production in Alaska, this assumption

⁴² Crone 2007.

⁴³ Crone 2007.

⁴⁴ DEIS at 3-37.

⁴⁵ Appx A-6; *see also* TLMP DEIS (Jan. 2007).

⁴⁶ Brackley et al. 2006 at Table 3.

⁴⁷ *Organized Village of Kake et al. v. U.S. Forest Service*, Case No. 1:04-cv-00029 (JKS) (D. Alaska, September 26, 2007).

⁴⁸ *See* Crone 2007.

⁴⁹ Brackley et al., 2006.

⁵⁰ Brackley et al. 2006 Table 5A.

⁵¹ Brackley et al. 2006 Table 5A.

- SCS-56
(cont.) seems questionable because Alaskan products must compete against logs produced in British Columbia and the Pacific Northwest at a lower cost.
- This inaccuracy is multiplied because Brackley's model also assumes that Pacific Rim demand dictates domestic demand. This is another curious assumption because in recent years the majority of softwood lumber produced in Southeast Alaska has gone to domestic markets - over the past four years, 78% of the wood products have gone to domestic markets and only 15% have gone to Pacific Rim markets. In future NEPA documentation, please explain why a small export share would drive demand for the majority of the wood going to domestic markets. It would be more appropriate to reconsider demand based on a model that accurately represents the domestic lumber market.
- The failure to calculate demand based on the domestic market implicates the second major mistaken assumption - that Southeast Alaska's forest products industry is competitive. The model assumes that overall domestic demand for Alaskan lumber will increase or that Alaska's market share will increase. But Southeast Alaska shares an integrated market with British Columbia and the Pacific Northwest.⁵² And Southeast Alaska has a number of competitive disadvantages - a large proportion of low-value tree species, higher labor, operating, manufacturing and transportation costs, less efficient mills and weak local markets. As Robertson and Brooks noted: "With the highest total production cost of the three regions and a substantially lower stumpage value, the marginal position of Alaska as a high cost producer is evident."⁵³
- SCS-57 The third flawed assumption contained in the model is that new, large mills will soon begin operating in Southeast Alaska. It seems premature to design a large sale based on a demand analysis that relies on events which have not yet come to fruition.
- SCS-58 Because the range of scenarios in the model is unreasonably restricted to overly optimistic estimates of demand that run counter to the evidence, the purpose and need for this large sale are based on an over-inflated calculation of demand. The consequences of inflating ASQ are particularly evident in this sale: (1) continued high-grading of the most ecologically significant forests; (2) continued exports with few jobs for local wood processors; (3) high value intact watersheds will be degraded in the name of generating a small amount of local economic activity; (4) local economic activity continues to be highly subsidized by American taxpayers and (5) new road construction will continue for the purpose of accessing timber even though it is unlikely that road construction costs will ever be recovered.
- For these reasons, the market demand analysis in the Brackley model should not be used to justify this sale. The analysis has not fulfilled the requirements of the 9th Circuit's ruling and has fatally infected this DEIS. If the Forest Service continues to proceed with this sale, there should be a SEIS that uses a new model that is based on realistic demand projections. With more accurate information, the agency can develop alternatives that achieve realistic objectives: (1) restoration; (2) focus on harvesting areas that already have roads; (3) shift support for regional industry from road building to value added manufacturing (technical and financial assistance) to meet more local needs and (4) allocate land and management effort toward broad forest values and the true economic engines of SE AK: nature based recreational and tour industries, commercial fishing and amenity based developments.

⁵² See Stevens and Brooks (2003).

⁵³ Robertson and Brooks (2001).

SCS-59

The rationale for offering this sale, and especially a roadless area sale under three of the action alternatives, is not supported by actual demand. We are particularly concerned about the justification for the need for large sales:

Small sales can be financially successful even though our process indicates uneconomic situations for the “normal” timber industry. Small timber operators have the ability to sell smaller amounts of forest products in the local area, have less capital outlays, lower overhead, and have been able to develop niche markets for their products. The small and very small family owned businesses that currently constitute the Southeast Alaska woods products industry are adjusting to take advantage of these more specialized markets. This is likely a normal phenomenon that is part of the transition occurring in the Southeast Alaska timber industry.⁵⁴

3. The Likelihood of Export Should Be Disclosed in Detail

SCS-60

The incursions into the roadless areas, in particular, seem designed to meet the needs of large timber operators who ship unprocessed yellow cedar overseas and up to 50% of the less valuable sawlogs to mills in the lower 48. As discussed in the previous section, it is clear that the incursions into the roadless areas in particular will be primarily for the purpose of enabling a large-scale timber operator to export unprocessed timber.

Because of the high rate of exports, the column in Table 3TE-5 on mill jobs is misleading. The table provides an upper range of jobs that assumes that all of the timber sold, including Alaska Yellow Cedar (AYC) is processed in Southeast Alaska. The DEIS states that “[t]he number of jobs and related income will likely fall somewhere between the high end and low end of this calculated range.” This statement suggests that there will be somewhere between 82 and 164 annualized mill jobs, 161 and 243 annualized total jobs and between \$6.1 and \$ 8.7 million in direct income. We believe that the table mischaracterizes the total annualized jobs and total income by suggesting an upper range without providing any basis for the assumption that all the timber sold would ever be processed locally in Southeast Alaska.

It is undisputed that it is more profitable to export raw logs than to process them in Southeast Alaska.⁵⁵ The annual appropriations riders in the Department of Interior and Related Agencies Appropriation Acts effectively exempt Alaska Yellow Cedar from the domestic processing requirement, ensuring the export of the most valuable trees. Although the amount of cedar sold between 2001-2005 was less than 20% of the volume of spruce and hemlock sold during the same period, the stumpage value was similar: \$3.3 million for the spruce and hemlock and \$ 2.8 million for the cedar.⁵⁶ Therefore, even though the preferred alternative would sell a relatively small amount of cedar, the analysis in the DEIS should reflect the fact that if there is to be a large sale, the high value trees will be exported pursuant the domestic processing exception contained in the annual appropriations rider.

⁵⁴ Couverden Timber Sales ROD at R-9.

⁵⁵ See e.g. Alaska Dept. of Commerce and Economic Development, Southeast Alaska Wood Products at 8 (2003) available at http://www.dced.state.ak.us/dca/AEIS/Statewide/Timber/Statewide_Timber_SE.html (hereinafter AK DCED Wood Products Report).

⁵⁶ See e.g. USDA Forest Service Region 10, Timber Cut and Sold on National Forests, 2001-2005, available at http://www.fs.fed.us/r10/ro/policy-reports/for_mgmt/index.shtml.

SCS-60
(cont.)

Also, 36 C.F.R. § 223.201 grant the Regional Forester the authority to approve other raw log exports upon application from the timber sale purchaser.⁵⁷ This procedure seems to be nearly automatic – all but 4 of the 117 applications from 2001-2005 were approved. And as of March 14, 2007, the Regional Forester has authorized timber sale purchasers to ship unprocessed spruce and hemlocks to states in the lower 48 up to a maximum of 50 percent of total sawlog contract volume of all species.⁵⁸

Because of the above legislation, regulations and policies, we do not believe that Table 3TE-5 accurately depicts projected Alaskan employment and income. Please provide analysis in your future NEPA documentation that incorporates a realistic depiction of the amount of timber from this sale that will most likely be exported without any prior domestic processing. The upper end of the range relies on the mistaken assumption that all the timber could be processed locally and therefore the entire table is misleading as to the actual range of jobs and income generated by the project.

4. More Consideration Should Be Given to Multiple Use Economic Values

The DEIS measures the economics of the timber sale in terms of four factors: (1) the total volume in MMBF; (2) logging costs in MBF; (3) employment in number of job years and (4) direct income based on projected employment. We believe that a fully informed analysis of the economics of this timber sale should incorporate external costs. The cost of producing a good or service is not simply a factor of priced inputs such as logging costs. If environmental and other resource user costs are not factored in to the economic analysis, the true value of the resources being used to produce the timber is not accurately represented and there is significant information lacking that would inform a decision that best allocates resources.

Planning regulations require forest plans to “describe and analyze ... the range and estimated long-term value of market and non-market goods, uses, services and amenities that can be provided [by national forests] consistent with the requirements of ecological sustainability.”⁵⁹ The DEIS broadly discloses the affected environment for timber economies by noting that Southeast Alaska’s 74,000 residents work in commercial fishing, timber harvest and processing, tourism and mining, recreation and subsistence related economies. But there is no adequate attempt to quantify or even adequately analyze the other values.

Also, in planning a timber sale project, the Forest Service must compare the public money it will spend administering a project with the prospective returns to the agency. That analysis, which “compares estimated Forest Service expenditures with estimated financial revenues,” allows the decision maker and the public to gain some understanding of “the future financial position of the program if the project is implemented.”⁶⁰ Part of the purpose of this analysis is to fulfill NEPA’s requirement to “balance a project’s economic benefits against its adverse effects.”⁶¹

⁵⁷ 36 C.F.R. § 223.201.

⁵⁸ Memorandum from Dennis E. Bschor, Regional Forester, Re: Limited Interstate Shipments of Sitka Spruce and Western Hemlock Timber (March 14, 2007).

⁵⁹ 36 C.F.R. § 219.21.

⁶⁰ Forest Service Handbook § 2400.18_30.

⁶¹ Hughes River Watershed Conservancy v. Glickman, 81 F.3d 437, 446 (4th Cir. 1996).

SCS-61
(cont.)

The "Timber Financial Efficiency Analysis" excuses its lack of quantitative analysis for other resource uses by stating that "non-market values are difficult to represent by appropriate dollar figures."⁶² Nowhere in the DEIS are the more easily quantifiable values, for which data exists, actually quantified. These values include the values of subsistence take, outfitter guide revenues, trapping, sport hunting and fish production for both commercial and recreational takes. Without taking readily available data and using it to put a number to these values, the DEIS does not fulfill its obligation to inform the public and the decision maker. We request that you seek out readily available information that is necessary to quantify other multiple economic uses of the Tongass – tourism, fisheries and subsistence - in order to make a fully informed decision.

SCS-62

The number of tourists utilizing the project area for wildlife viewing, hiking and scenery has increased dramatically over the past few years and the increase is projected to continue. We cite these comments from over 100 businesses, including 17 Alaska business, that addressed Congress regarding the outdoor recreation industry's concerns about logging of roadless areas:

While the timber industry in Southeast Alaska continues a sharp decline, primarily due to changing global timber markets, the recreation and visitor industry continues to grow. Using U.S. Forest Service data, a 1997 comparison between the value of logging Tongass old-growth forest and recreation and tourism use of these lands showed that tourism was nine times more valuable than logging. By 2000, recreation and tourism on the Tongass contributed 30 times the value of clearcutting the forest. There are particularly interesting facts when considering that the failing Tongass timber program cost taxpayers \$35 million in subsidies that same year. The estimated number of summer visitors to Southeast Alaska slightly more than doubled between 1993 and 2001, increasing from 502,800 in 1993 to 1,010,352 in 2001. Clearly, trees left standing for recreation and tourism contribute substantially more logging to Southeast Alaska's long-term economy.⁶³

SCS-63

Also, the area is critical to the subsistence economy – 2004 studies done by Alaska's Department of Commerce indicate that local residents harvest an average of 243 pounds of wild food per person.⁶⁴ The value of this wild food has been quantified – wild food harvests provide 115% of the protein requirements for Southeast Alaska residents and the total value of wild food harvests to Southeast Alaska's 73,000 plus residents in 1999 was \$15,193,527 at \$3 per pound and \$25,322,545 at \$5 per pound.⁶⁵

SCS-64

Chartered sport fishing is a growing industry and the economic value of commercial salmon fishing has rebounded dramatically in the past few years. The American Sport Fishing Association conducted a national survey in 2001 finding that U.S. residents over the age of 16 spent an estimated \$537

⁶² DEIS at 3-40.

⁶³ Outdoor Industry Supports Efforts to Safeguard Tongass National Forest for Sake of Customers and U.S. Taxpayers (September 29, 2004).

⁶⁴ Alaska Dept. of Commerce, Community Profiles, *available at* www.commerce.state.ak.us/dca/AEIS/Skagway/General/Skagway_General_Narrative.htm. (last visited Dec. 5, 2004).

⁶⁵ Robert J. Wolfe, (Alaska Dept. of Fish and Game, Division of Subsistence Research Director), Subsistence in Alaska: A Year 2000 Update (March 2000).

SCS-64
(cont.)

million on fishing trips in Alaska in 2001.⁶⁶ These expenditures generated 11,064 jobs and \$238 million in wages and salaries with a \$960 million ripple effect.⁶⁷ Updated figures in 2003 showed that jobs and expenditures increased approximately 9% in these categories.⁶⁸

Also, statewide commercial salmon fisheries generated more than \$374 million in ex-vessel value alone (meaning that processing jobs, transportation jobs and other economic ripple effects are not factored in).⁶⁹ Fisheries in Southeast Alaska had an ex-vessel value of over \$98 million, or more than one-fourth of the statewide total.⁷⁰ Based on this figure, we believe it is reasonable to assume that at a minimum, sport fisheries in Southeast Alaska also comprise roughly one-fourth of statewide values in 2000 - \$125 million in direct expenditures, 2,500 jobs worth over \$50 million in wages with \$250 million in ripple effects. In view of the negative appraisal value of the Iyoutug sale, we do not believe the precise numbers are necessary to make our point: that other uses are highly profitable, and the proposed sale is not.

Based on the above economic statistics, we believe that there are many studies ascribing numerical values to subsistence, recreational and fisheries uses of public lands. These studies make abundantly clear that logging areas like the Iyoutug project area now would constitute an immediate economic loss and would unjustifiably compromise the economic future of the Tongass. By emphasizing timber harvest over other economic uses in the area, the proposed project ignores economic trends in the region. We expect a cost/benefit analysis that does more than simply state that these other economic uses are hard to quantify. A full accounting of wildland values should be provided in order to satisfy NEPA's mandate to disclose significant effects.

5. Conclusion

We believe that in view of the broader economic trends in the region, the decision to proceed with this sale is unjustified. In addressing the implications of income and employment trends, Robertson points out the following:

[I]n the absence of significant increases in national forest timber sales (and the market to support them), the ability of forest policy to impact the regional economy via the timber sector will be small. Thus, the focus should shift to ways in which forest policy can affect the new drivers of economic activity in the region – tourism and unearned income. Forest policies that attract both visitors and new residents and keep existing residents from leaving will contribute to economic growth in the region.⁷¹

Crone's research indicated that efforts to improve the competitiveness of Alaska wood products could contribute to economic diversity in some communities but it was unlikely that wood products

⁶⁶ Alaska Dept. of Fish and Game, Economic Impact of Sport Fishing in Alaska, *available at* www.sf.adfg.state.ak.us/statewide/economics/ (last visited November 19, 2007).

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ Alaska Department of Fish and Game, 2007 Alaska Commercial Salmon Harvests and Exvessel Values, *available at* www.cf.adfg.state.ak.us (last visited November 19, 2007).

⁷⁰ *Id.*

⁷¹ Lisa K. Crone, Southeast Alaska economics: A resource-abundant region competing in a global marketplace at 22 (2005). (or Landscape and Urban Planning 72 (2005) 215-233.

SCS-64
(cont.)

production and employment will ever return to their previous levels in southeast Alaska. Her conclusion about economic viability and uses of the Tongass is quoted here:

Although timber from the Tongass continues to play a role and efforts to assist the wood products industry restructure should continue, timber is not likely to be the most important contributor to future socioeconomic well-being in the area. Based on regional, national and international economic and demographic trends, the roles the Tongass plays as a provider of tourism and recreation opportunities and as the custodian of many of the unique natural amenities and ecosystem values that both attract tourists and enhance the quality of life for existing and potential residents, is likely to be of more importance to the economic vitality of the region.⁷²

Please reconsider the economic justifications for this sale in light of the flawed market demand analysis and take NEPA's requisite hard look at economic data related to other economic uses of the forest. We believe that a fair balancing of multiple uses against the proposed action here mandates only one conclusion: the proposed action alternatives are all unjustified in economic terms.

III. Other Resources

A. Botany: Invasive Plants and Weeds

SCS-65

Thank you for disclosing that road construction has resulted in an invasive weed problem in the project area. As you indicated, invasive weeds are a threat and five of the species found in the project area are moderately to highly invasive. Please discuss the specific types of threats the five invasive plants pose to project area. Also, please discuss the extent of the ongoing efforts to eradicate invasive weeds referred to in Appendix D and the effectiveness of these efforts. Given the general threat posed by invasive weeds, any decision about further road construction in the project area would be less than fully informed if there was an absence of data about the spread of invasive plants despite eradication efforts.

B. Geology and Karst

SCS-66

The Draft EIS says there are no proposed roads on or near any low, moderate or high vulnerability karst.⁷³ However, the sale would rely on roads crossing karst at the 8535 road and proposed 85351 spur. The map in the EIS (Fig. 3-4) also clearly shows the 8530 road crossing karstlands. Roads can have severe impacts to karstlands. Roads on karsts should be high priorities for decommissioning. Please conduct surveys or include the information if surveys have been done regarding roads on karsts. Karst is so unique, that ignoring this element is a major failure.

IV. Management Indicator Species and Other Wildlife Species (Excluding Deer)

⁷² Crone (2005) at 231.

⁷³ DEIS 3-58

A. Marten⁷⁴

SCS-67 The project area is high-risk biogeographic province for marten and more roads would increase trapping effort for this increasingly valuable furbearer. Under TLMP, timber harvest units containing high value marten habitat must meet Forest Plan standards and guidelines which require retention of portions of the original stand structure, trees for future snag recruitment as well as decadent trees and downed material. As an initial matter, please explain the basis for the assumption that the 25% partial cuts are excluded from the standards and guidelines. If the most productive forest is high-graded in these cuts, will there actually be sufficient stand structure to support this assumption? Also, although the standards and guidelines will help retain some forest features relevant to marten population viability, we have several concerns regarding whether the DEIS gives sufficient consideration to other factors impacting marten populations.

SCS-68

1. The DEIS Places Too Much Reliance on the Habitat Capability Model

The DEIS relies on the interagency habitat capability model (Suring et al. 1992) that calculates a Habitat Suitability Index (HSI) based on timber volume strata, elevation and typical snowfall. There are three factors controlling marten population densities: habitat conditions, prey densities and trapping pressure.⁷⁵ But the marten model only considers one of these factors – habitat conditions and the habitat conditions evaluated in the model do not consider fragmentation.

SCS-69 In our scoping comments, we requested that there be an adjustment to the model that accounts for road density and application of a model that uses TimTyp data rather than volume strata. Also, although the DEIS discusses road density, it does not appear that the habitat suitability index contains a straightforward application of the road density adjustment. Without an adjustment for road density, the habitat suitability figures can be misleading as to potential impacts on marten populations.

SCS-70 Also, because marten prefer habitat patches over 180 acres in size and do not use patches of less than 10 acres and because the project is within a high-risk biogeographic province, analysis of patch size and fragmentation is of great concern. Please provide some analysis in your subsequent NEPA documentation regarding the availability of large habitat patches left available for marten. We would point to the Traitor's Cove Timber Sale FEIS as providing an example of the type of patch size analysis that would be helpful in providing information to a decisionmaker that would remedy the shortcomings of the habitat capability model.⁷⁶

SCS-71 This analysis is particularly critical in light of the discussion at the 2006 Tongass Conservation Strategy Workshop where it was noted that a road density was not the best method of assessing marten vulnerability.⁷⁷ Instead, it was suggested that a more effective means of addressing marten vulnerability would be to develop an area wide assessment of areas large enough to contain marten home ranges that are free from trapping – trapping refugia.⁷⁸ A trapping refugia model could then be

⁷⁴ DEIS, 3-66-74.

⁷⁵ Flynn et al. 2004.

⁷⁶ See Traitor's Cove Timber Sale FEIS at 3-195- 3-197.

⁷⁷ Tetra Tech 2006 at 12 (Ex. C in Baht Appeal).

⁷⁸ Tetra Tech 2006 at 12

SCS-71
(cont.)

useful in evaluating new roads and determining to what degree they could expose marten to new trapping pressure.⁷⁹

Although the concept of a trapping refugia model is an evolving development, the discussion about how the availability of refugia habitat is a key component of population viability needs to be fully considered. Because the DEIS seems to rely exclusively on the Forest Plan guidelines and habitat model and did not analyze how much of the acreage of high value marten habitat provided refuge from trapping effort, it does not fully evaluate the effect of the project in light of updated scientific theories and in view of the Forest Service's goal of promoting adaptive management. In further NEPA documentation, please supplement your habitat capability and road density analysis that addresses the need for trapping refugia. This material should be included to accommodate NEPA's mandate to disclose possible shortcomings in models.

SCS-72

Also, we are concerned about the absence of discussion about prey availability. The multi-scaled study on Chichagof Island conducted between 1991 and 1998 indicates that populations fluctuate greatly in response to food availability and trapping.⁸⁰ Marten on Chichagof Island utilize winter-killed deer carcasses during the spring.⁸¹ In view of the extreme winter deer kill in 2006-2007, we have specific concerns about seasonal prey availability. Another primary prey species, particularly on Chichagof Island, is the long-tailed vole.⁸² When long-tailed vole numbers are low, marten prefer salmon over other small mammals.⁸³ Please include an analysis about prey availability in future NEPA documentation and discuss the role of deer in marten population viability and whether areas designated as high value marten habitat contain salmon-bearing streams.

2. The Road Density Analysis Should Apply Flynn's (2006) Curve

SCS-73

We note that road density analysis in the DEIS relies on Suring's assumption that habitat suitability began to decline when road density reaches 0.20 miles per square mile and decreased sharply when road densities reach 0.60 miles per square mile.⁸⁴ Thank you disclosing both the total road density of 0.83 miles per square mile in the Wildlife Analysis Area (WAA) and the open road density of .56 miles per square mile.

At the recent Tongass Conservation Strategy Workshop, it was recommended that road density analyses for wolves should be adjusted for total road density and access and that open road density guidelines are too high.⁸⁵ Although this recommendation has to do with wolves, the underlying problem is the same – human access needs to be considered in view of total road density. But the analysis in Suring's 1992 model seems to take into account only open roads. Please include a table in future NEPA documentation that adjusts the habitat suitability index to reflect total road density.

SCS-74

Also, we request that you consider applying the curve in Flynn (2006) that was based on field research. Flynn has done a number of peer-reviewed studies on marten and is the Alaska Department

⁷⁹ Tetra Tech 2006 at 12

⁸⁰ Flynn 2004.

⁸¹ Ben-David et al (1997, pp. 288-289); *see also* Wildlife and Subsistence Resource Report at 55.

⁸² Tetra Tech at 28.

⁸³ Tetra Tech at 28.

⁸⁴ DEIS at 3-67.

⁸⁵ TetraTech 2006 at 74.

SCS-74
(cont.)

of Fish and Game’s lead researcher on the species in Southeast Alaska. The differences between the amount of high value marten habitat that is available under the updated curve can be dramatic. Under the older approach, it is assumed that there is a maximum impact at 0.60 miles per square mile. Flynn 2006. But Flynn’s research indicates that the road density impacts are continuous and continue to increase up to 0.93 miles per square mile. Flynn 2006. As you indicated in the Baht Timber Sale FEIS, the difference between the road density adjustments can be the difference between having only 1,275 acres of marten habitat with an HSI between 0.7 and 1.0 under Suring’s curve and having no valuable marten habitat at all under Flynn’s curve.⁸⁶ If you choose to apply the older curve, please explain why and include a table or discussion that indicates how much valuable marten habitat would be available using Flynn’s curve.

SCS-75

First, these road density numbers do not match with those in the Transportation Specialist Report. There, road density is calculated this way:

QuickTime™ and a decompressor are needed to see this picture.

87

QuickTime™ and a decompressor are needed to see this picture.

88

SCS-76

Under the TLMP, S&G WILD112.XVI.A.1: “where marten mortality concerns have been identified, cooperate with the ADF&G to assist in managing marten mortality rates to within sustainable levels. Consider both access management on National Forest lands and hunter/trapper harvest.”

The DEIS only considers hunter/trapper harvest, without the required consideration for reducing open road density. ADF&G should not need to be in the midst of an emergency for the Forest Service to help manage marten by not creating a sprawling road system. Ultimately, the DEIS discounts the impact of road density, saying only that, “increases in open road densities may result in increased

⁸⁶ Baht Timber Sale FEIS at 3-160.

⁸⁷ Sandall & Heinrichsen 2007, p.5

⁸⁸ Sandall & Heinrichsen 2007, p.10

SCS-76
(cont.)

trapping of marten."⁸⁹ However, regardless of the number, there is no doubt that it is high, and above levels known to facilitate unsustainable marten harvest. The proposal would stretch roads into new areas, further impacting marten populations. There is no doubt that ADF&G has identified concerns for marten in this area. The DEIS says,

ADFG initially expressed a concern that the harvest level of marten resulting from the high road densities and the placement of the roads adjacent to low elevation riparian habitat in the Iyoktug project area could impact marten populations (Mooney 2007, pers. com.). However, the harvest data does not indicate that there is mortality concern and that marten populations are stable or increasing on Chichagof Island (Mooney 2007, pers. com., ADFG 2004, Flynn et al. 2004).⁹⁰

SCS-77

The S&G goes on to require effective road closures where populations have been found to be declining. We feel that given existing information, there is sufficient justification to consider closing additional roads and foregoing new road building.

3. The DEIS Should Include Updated Information About Trapping Effort

SCS-78

Marten are particularly vulnerable to trapping effort – one study demonstrated that all martens with roads in their home ranges were caught by trappers during the first month of winter.⁹¹ Alaska Department of Fish and Game biologist Phil Mooney expressed the concern that harvest levels could increase from high road densities and placement of roads adjacent to low elevation riparian habitat could impact populations.⁹² We believe that the DEIS placed too much reliance on older harvest data in concluding that there is not a mortality concern. The DEIS indicates that there was good recruitment and moderate trapping pressure based on 2003-2005 harvest statistics.

But the DEIS also acknowledges that during the 2005-2006 trapping season, the percentage of males harvested and the age ratio exceeded recommended levels. The Wildlife Resource Report assumes that the explanation for this exceedance was because of a seasonal variance.⁹³ But we would like to point out that there was a dramatic increase in prices for marten pelts in between the 2004-2005 trapping season and the 2005-2006 trapping season – pelt prices increased from \$30-\$40 each to \$80 each.⁹⁴ Moreover, this trend is expected to continue based in large part on the entry of China into the global marten pelt market.⁹⁵ Because price is one of the most critical variables affecting trapping pressure, please include updated harvest statistics and price information in subsequent NEPA documentation. The hard look required by NEPA mandates an accurate analysis of the factors motivating trapping effort.

⁸⁹ DEIS, p. 3-73

⁹⁰ DEIS, p. 3-67

⁹¹ Tetra Tech at 32.

⁹² DEIS at 3-68.

⁹³ Wildlife Resource Report at 62.

⁹⁴ Lowell, October 17, 2006 (Exhibit BM in Baht appeal).

⁹⁵ Opportunities North at B-12, June 2007.

B. Bears:⁹⁶

SCS-79

The area is home to one of the highest concentrations of brown bears in the world and the project would reduce migratory corridors, jeopardize riparian foraging areas and displace bears from winter denning areas. Bears utilize primarily estuary and closed forested riparian habitats and the summer/fall season is most critical period for bears concentrated in riparian areas. There were consultations with ADF & G for stream surveys in potential bear foraging habitat

1. Road Density and Bears

Road density is an important factor in brown bear mortality and habitat. Please consider it in the Final EIS. The ATM EA identified Brown Bear as a primary, alternatives-driving issue with regard to road management. The ATM FONISI showed that commenters supported closing roads near important feeding areas, riparian areas and beach meadows, including within Old-Growth LUDs. At a minimum, this should include the vicinity of all Class I streams. The 2003 Roads Analysis also found that roads would increase brown bear mortality. The DEIS however does not consider this important factor.

2. Increase Riparian Buffers for Bear

SCS-80

Please incorporate the recommendations of the recent studies on the importance of riparian buffers to brown bear in this area.⁹⁷ All of the action alternatives propose timber harvest in bear foraging areas with only a 100 foot minimum riparian buffer along class I streams. SCS pointed out in scoping comments that 500 foot buffers should be on both sides of class I streams regardless of whether there have been project field observations of an absence of anadromous fish. This recommendation conforms to the recommendations made based on the most recent studies.⁹⁸ The use of only a 100 foot buffer ignores the best available science. Riparian vegetation is perhaps the most important habitat element for brown bear, and it ought to be considered for protection in the Final EIS.

SCS-81

Finally, thank you for excluding from the preferred alternative the concentrated area of bear and salmon use along Iyouktug Creek in Unit 108. If you decide to proceed under a different alternative, please continue to exclude this area.

C. Cavity dependent MIS

SCS-82

For each of the cavity nesting forest birds, community composition and abundance are correlated with forest buffer width and widths in excess of 1000 feet.⁹⁹ The Wildlife Resource Report discusses general brown creeper habitat needs and broad population trends. But beyond the note that field surveyors observed brown creepers, there is no substantive analysis about the project area.¹⁰⁰ The

⁹⁶ DEIS, 3-75.

⁹⁷ Flynn, R.W.; S.B. Lewis; R.B. LaVern & G.W. Pendleton (2007). "Brown bear use of riparian & beach zones of N.E. Chichagof Island: Implications for Streamside Management in Coastal Alaska." Alaska Dept. of Fish & Game, Douglas, Alaska.

⁹⁸ Id.

⁹⁹ Tetra Tect at 59

¹⁰⁰ Wildlife Resource Report at 81.

SCS-82

report simply acknowledges a lack of population or density estimates.¹⁰¹ With regard to hairy woodpeckers, the Wildlife Resource Report simply concludes that suitable habitat exists.¹⁰² There was not much information about the red-breasted sapsucker or the red squirrel.

NFMA required the Forest Service to develop regulations that “provide for diversity of plant and animal communities.” 16 U.S.C. § 1604(g)(3). Those regulations require management of wildlife that maintains viable populations. 36 C.F.R. 219.19 (1982). To implement that goal, certain species are selected as management indicator species (MIS) for the purpose of indicating the effect of management activities on other species with similar habitat requirements. 36 C.F.R. § 219.19(a)(1) (1982); TLMP FEIS 3-351; *see also* Inland Empire Pub. Lands Council v. U.S. Forest Serv., 88 F.3d 754, 762 n. 11 (9th Cir. 1996)(explaining that management indicator species are a “bellwether” for species with the same habitat needs or population characteristics). Application of the MIS concept is project specific - the Forest Service should evaluate each project alternative in terms of the impact on both MIS species habitat and MIS populations. Idaho Sporting Congress v. Rittenhouse, 305 F.3d 957, 971-74 (9th Cir. 2002)(emphasis added).

Because the species discussed above are MIS that stand in for other species and their habitat needs, more rigorous analysis was required in the DEIS. This is relevant not only for these MIS, but also because they are prey species for other animals. Please provide more detailed analysis in your subsequent NEPA documentation.

D. Endemic Mammals:

SCS-83

Forest Plan Standards and Guidelines for endemic mammals require the Forest Service to “maintain habitat to support viable populations and improve knowledge of habitat relationships of rare or endemic terrestrial mammals that may represent unique populations with restricted ranges.”¹⁰³ The DEIS discloses that cable and shovel yarding and road building would most likely result in direct mortality of Keen’s mice and affect nest sites and other habitat structures. Clearcuts would reduce habitat capability for roughly the first ten years and habitat would then be optimum for a period of 10 to 30 years. The DEIS assumes that single tree harvest selections would cause little change to Keen’s mouse habitat because the canopy cover and available downed wood would remain similar to pre-harvest conditions. Again, please explain whether this assumption accounts for single tree harvest of the largest trees.

SCS-84

V. THERE ARE SIGNIFICANT ERRORS IN THE DEER ANALYSIS.

A. Introduction

Neither the viability of deer populations in areas affected the project nor the viability of wolves (not present on Chichagof Island, but whose primary prey is deer) are at issue concerning the Iyouktug project. The DEIS therefore focuses on providing a sufficient number of deer to meet the needs of

¹⁰¹ Wildlife Resource Report at 81.

¹⁰² Wildlife Resource Report at 83.

¹⁰³ Standard & Guideline XVII.

SCS-84
(cont.)

subsistence and sport hunters. We contend that the analyses in the DEIS and the Wildlife & Subsistence Report fail to fairly disclose the cumulative impact of the project on deer numbers and hunters, that the DEIS has accordingly misled the public that is commenting on the project now, and that unless this is corrected NEPA will be violated and the decision maker will be misled.

SCS-85

The DEIS relies on the notion that "a deer population at carrying capacity should be able to support a sustainable hunter harvest of approximately 10 percent of the habitat capability while also providing a reasonably high level of hunter success."¹⁰⁴ The Forest Service has used the 1997 Forest Plan deer model¹⁰⁵ to "provide an estimate of the potential number of deer available for hunter harvest and the habitat within the WAA that can support them over time."¹⁰⁶ The model was run with the Vol-Strata dataset.¹⁰⁷ The estimate was made by applying to the unitless output of the deer model a multiplier of 100 deer per square mile that was pegged to an HSI¹⁰⁸ of 1.0 in the model's range of habitat values.¹⁰⁹ This deer model has an HSI range of zero to 1.3, of which 1.3 is best quality deer winter habitat.¹¹⁰ The best habitat in the project area (and WAA) was considered in the modeling to have an HSI score of 1.0 because the area is in an intermediate snow zone.¹¹¹ Logging units that have a silvicultural prescription of 25 percent removal of the existing old-growth were scored as if they will not be logged in the modeling that was done for this project.¹¹² These units include most of the coarse canopy forest that would be logged by the project,¹¹³ and this loss is not accounted for in the modeling. There are 900 acres of units with the 25 percent removal prescription in three of the action alternatives (all except Alternative 5, which does not use that prescription).¹¹⁴ This acreage is a significant exclusion from the deer modeling. The DEIS claims "the model over-estimates the reduction of habitat capability;"¹¹⁵ however, there is no authority¹¹⁶ to disregard the 25 percent removal units (which can cause capability to be over-estimated) and the many shortcomings of the model and the Vol-Strata dataset have not been disclosed in the DEIS and can be expected to cause over-estimation. The deer model has also been used in the DEIS analysis of deer habitat by quartiles and in terms of "prime" and "high value" habitat.¹¹⁷ All of this analysis, including the definitions of the terms "prime" and "high value" habitat rely on the deer model. The analysis also discusses "quick cruise" surveys that were made of deer habitat;¹¹⁸ however, the quick cruise discussion is not directed toward determining effects on habitat quality, deer numbers, subsistence hunters, and other hunters, and does not provide sufficient information to compare alternatives.

¹⁰⁴ DEIS at 3-129 and 131 and Wildlife & Subsistence report at 114 and 116 (comparing an estimate to the 10%).

¹⁰⁵ Also known as the DeGayner (1997) deer model, often confused with the Suring et al. (1992) deer model that was created by an interagency work group.

¹⁰⁶ Wildlife & Subsistence Report at 116.

¹⁰⁷ DEIS at 3-80 and Wildlife & Subsistence Report at 92.

¹⁰⁸ HSI means Habitat Suitability Index, and HSI values have no units of measure.

¹⁰⁹ DEIS at 3-81 and 92.

¹¹⁰ DEIS at 3-80. "Best quality habitat" and "optimal habitat" are the same thing, used interchangeably by biologists.

¹¹¹ DEIS at 93. In a low snow zone the HSI for best habitat is 1.3, the best score the model can give.

¹¹² DEIS at 81, Wildlife & Subsistence Report at 101.

¹¹³ Wildlife & Subsistence Report at 24, 25, and 26.

¹¹⁴ This is not disclosed in the DEIS or the Wildlife & Subsistence Report, and was determined by our analysis of the unit cards.

¹¹⁵ DEIS at 101.

¹¹⁶ The Forest Service has consistently contended that the deer model cannot be modified at the project level, but that is what this action does.

¹¹⁷ DEIS at 3-81, 82, 83 (Fig. 3-6), 87, and 88, and Wildlife & Subsistence Report at 93, 95-97 and 103..

¹¹⁸ DEIS at 82 and Wildlife & Subsistence Report at 93, 95 and 98.

SCS-85
(cont.) | This introduction has provided background information and has hinted at some of the inadequacies of the deer and subsistence analyses. The failures of those analyses are discussed below.

SCS-86 | A. Using the Deer Model to Determine Deer Availability to Hunters Is Improper.

The Alaska Department of Fish & Game commented to the Forest Service in June 2006 that the deer model is "completely unsatisfactory" for the kind of deer availability analysis that has been done in this DEIS and the project's Wildlife & Subsistence Report. Similarly, the authors of the principle authors of 1996 interagency paper "*The Alexander Archipelago Wolf: A Conservation Assessment*" later wrote to the Regional Forester and the TLMP Team Leader in reference to both that paper and Appendix N of the Forest Plan, "We avoided any reference to the deer HSI model in the wolf conservation assessment because we believe that it is unreliable as an estimator of actual deer numbers."¹¹⁹ The flaw in the use of the deer model for this project is that hunters don't hunt habitat capability or some fraction of it, they hunt real deer. The model is being used in a back-handed way to predict that a satisfactory number of deer will be available, for which it is unsuited. Also, the DEIS failed to disclose the long standing resistance to this use of the model in the scientific community and among resource agencies.

SCS-87 | In the balance of our comments regarding deer, discussion of the deer model is not an endorsement of using the model as it has been in this project, but to point technical flaws in how the model has been used, in recognition that the Forest Service will most likely continue to use the model in this way that it shouldn't.

SCS-88 | B. The Forest Service Erred in Considering Only Average Hunter Success.

The subsistence analysis in the Wildlife & Subsistence Report relies on an "estimated average" deer harvest of 227 deer, and calls that "hunter demand." There are two problems with this approach. First, the number is a reflection of success, not demand. Success can be expected to be less than demand because deer numbers fluctuate. Demand may be satisfied in no years, some years but not others, or all years. Accommodating demand needs to be the focus of the analysis.

SCS-89 | Further, reliance on average success is inappropriate because providing for only the current average can be expected to cause a future decline in the average. To maintain the average it is necessary to provide enough habitat capability to sustain years of high success, not just those that provide success at the current average or lower. Eliminate the potential for high success years, and the average will drop substantially.

SCS-90 | C. The Forest Service Erred in Considering Only Average Winters.

The deer model only considers habitat capability as constrained by average winters, a fact that is not explicitly disclosed in the DEIS although the it does disclose that severe winters can cause greater impacts than suggested by the analyses that it presents. That disclosure is very general, though, and

¹¹⁹ Person et al. (1997), letters to Phil Janik and Beth Pendleton.

SCS-90 (cont.) | numeric results from the modeling for average winters are used to reach conclusions about satisfying hunters' demand for deer.¹²⁰

SCS-91 | The Forest Service has been advised by the Alaska Department of Fish & Game of a way to better take severe winters into account for deer modeling. It was not disclosed in the DEIS, but is applicable to this project because the area analyzed is in an intermediate snow zone (according to the GIS snow layer that is used with the model). The department said:

Planning for severe winter events is the best policy when considering protection of winter habitat for deer. The deer HSI model fails to do this. Further, climate change predictions for Southeast Alaska indicate the likelihood of extremes of warm and cold during future winters, along with much greater precipitation. That may mean occasional extreme snowfalls, not unlike what was experienced during the 2006-2007 winter. It would be wise, therefore, to emphasize the need to retain winter habitat for deer and calculate HSI under the assumption that all areas are at risk of deep snow. This would result in more scientifically credible evaluations.¹²¹

We note from the deer model's HSI table that modeling as if the project were in a high snow zone would mean that the highest possible HSI would be 0.70 rather than 1.0.¹²² This would make a significant difference in the analysis.

SCS-92 | In view of significant winter of 2006/2007 and the emergency closure of the doe season on NE Chichagof Island just made as a result of it,¹²³ and the opinion of British Columbia deer biologist Michael Gillingham (in a peer review of the Tongass deer model)¹²⁴ that as many as four severe winters in a row should be considered, we believe that at a minimum modeling should be done for this project in way requested by ADF&G.

SCS-93 | In combination, using average hunter success and modeling based on average winters can be expected to have heavily skewed the deer/subsistence analysis in an adverse direction for the resource and use that are at risk.

D. The Forest Service Erred in Modeling the ST25 Units As If They Are Not To Be Logged.

SCS-94 | As noted in the introduction to this section, three of the action alternatives for the Iyouktug project include about 900 acres of units that have a 25% basal area removal prescription (called the "ST25" prescription). In running the deer model these units were treated as if they will not be logged.¹²⁵ There

¹²⁰ See DEIS at 131 and Wildlife & Subsistence Report at 116.

¹²¹ Detailed comments at 21-22, attached to State of Alaska's April 27, 2007 comments on the Forest Plan DEIS.

¹²² The maximum scores (i.e. for best quality habitat) for low, intermediate and high snow zones are 1.3, 1.0 and 0.70 respectively, under the 1997 Forest Plan deer model.

¹²³ See ADF&G emergency closure notice of November 6, 2007.

¹²⁴ His February 14, 1997 peer review of the deer model was done for the U.S. Fish & Wildlife Service in connection with consideration of whether to list the archipelago wolf as threatened. He said models such as this "are deterministic and do not take into account stochastic events so often important in biological systems. It may not matter what the average winter conditions are, if by chance 4 severe winters occur in sequence." And we know that one or two winters can have significant effect from what happened on Kuiu/Kupreanof/Mitkof around 1970.

¹²⁵ DEIS at 3-81, Wildlife & Subsistence Report at 101.

SCS-94
(cont.)

are two problems with that approach. First, it constitutes a fundamental change in the deer model, and in its response to comments on other Tongass DEISs and in its reviews of timber sale appeals, the Forest Service has steadfastly refused to make needed changes to the deer model (e.g. correcting the application of the deer multiplier or using TimTyp or Size-Density vegetation data instead of Vol-Strata) on the basis that changes are not allowed at the project level.

SCS-95

Second, the justification given in the DEIS to exclude ST25 units from modeling is that the prescription is “assumed to maintain a diversity of (plant) communities in the understory and cover in the overstory.” The Wildlife & Subsistence Report says this understory will be “diverse and abundant” and “comparable to plant communities typically found in old-growth stands.”¹²⁶ How, or even whether, this relates to the capability of habitat in winter was not discussed. Sources the Forest Service relied on were Deal (2007), Deal & Tappeiner (2002), and Deal (2001). Of these, Deal (2007) is a synthesis of the other two plus other partial cut studies.¹²⁷ Although these studies looked at vegetative “structure,” that was done only in terms of basal area and species composition, not canopy structure. Canopy structure is a critical element that affects snow cover, which in turn is a critical factor for the deer model.

The studies above by Deal and others do not substantively consider the effect of partial cuts on deer winter habitat. Deal (2007) refers to what it calls deer “carrying capacity” and includes a graph¹²⁸ portraying modeled capacity both in summer and winter in relation to the percentage of red alder in the stand. In the first place this is incongruous with the analyses for deer (and other wildlife) in the DEIS and Wildlife & Subsistence Report, for which alder was not a topic of discussion at all. More importantly, the source of that graph is a study (Hanley et al. 2006) that used a food-based deer model that has not been approved for use on the Tongass, and what it for convenience calls carrying capacity might better be thought of as faux carrying capacity to avoid confusion when doing a winter carrying capacity analysis:

For simplicity, we termed that number “carrying capacity” (deer-days per hectare) while fully realizing that our value does not involve any consideration whatsoever of the dynamics of plant–herbivore interactions or the long-term sustainability of that level of use. Our estimates of food biomass in winter were the summer values minus all deciduous species or plant parts; we did not include any effect of snow.¹²⁹

We see no justification in the documents cited for excluding ST25 units from deer modeling. In addition, the descriptions of the ST25 prescription in Chapter 3 and Appendix B of the DEIS are vague in relation to how and how much the structural elements of deer winter habitat would be affected in either particular units or overall the project alternative that would be selected..

Clumps will range from several trees up to an acre in size with occasional clumps as large as 2 acres. Emphasis for harvest will be placed on selecting Sitka spruce 24 inches DBH or greater and Alaska yellow cedar of all sizes. Harvest of other species and diameter classes will be refined during layout

¹²⁶ Same pages in both above documents.

¹²⁷ See the abstract in Deal (2007).

¹²⁸ Deal (2007) at 528.

¹²⁹ Hanley, Deal & Orlikowska (2006) at 741.

- SCS-95
(cont.)
- based on market conditions at the time. Trees to be retained will represent all species and most of the diameter classes currently in the stand; especially large diameter (30" +DBH) high defect trees that meet safety guidelines and nine to sixteen inch DBH spruce and yellow cedar with high vigor and good seed producing potential.¹³⁰
- SCS-96
- Removal of one to two acres clumps is essentially the creation of small clearcuts, and at the 25 percent rate of removal it is more aggressive than the consideration given explicitly to "group selection" in the Forest Plan deer model. The model considers group selection to be only 10 percent removal. At the other extreme of the prescription, the removal of clumps of "several trees" perhaps would not cause significant harm to wildlife, but problem is that the public reviewing the DEIS has been given no idea how this prescription will be implemented. It could be done almost entirely in, say, 1.8 acre clearcuts with a few of two acres. That may have a significantly different effect, over the 900 acres of ST25 units, than if the majority of removal was in several tree clumps. The prescription needs to be tightened up, and interagency biologists who are familiar with the deer model need to be consulted in how the model should be applied in this project.

SCS-97

E. Deer Modeling and Other Wildlife Analysis Was Done With the Faulty Vol-Strata Dataset.

As pointed out in Caouette et al. (2000), Caouette & DeGayner (2005), and comments by the State of Alaska on both the 2007 Forest Plan DEIS and the 2005 preliminary draft of the Conservation Strategy Review Workshop proceedings, the Vol-Strata dataset is uncorrelated to habitat quality and should not be used for wildlife modeling or analysis. Either TimTyp or Size-Density data should be used instead, and in fact Size-Density data was used for deer modeling in the Forest Plan DEIS. In contravention, in project level planning the Forest Service has been relying on Doerr et al. (2005), which reached the opposite conclusion that Vol-Strata is the preferred dataset. We believe the latter paper should be dismissed from consideration in this project and that all analysis done with Vol-Strata should be redone with either TimTyp or Size-Density.

We believe the Doerr paper should be dismissed for these reasons. It cites the two above Caouette papers but fails to disclose that its conclusions are inconsistent with them or to explore that inconsistency. We believe the inconsistency results from the design of the Doerr study and particular characteristics of the study area (Mitkof Island), in which the forest has been heavily logged and heavily high-graded. From the localized study a conclusion was reached that Vol-Strata should be used for deer modeling forest-wide; however, no justification whatever was provided for that leap. Although Doerr et al. (2005) was peer reviewed, the peer review process must be regarded as fallible¹³¹ and this paper should be viewed with skepticism unless its results can be repeated by a better designed and more comprehensive study. Which means we believe it is premature to apply the study and that it should not be used in this project area that is remote from the study area.

¹³⁰ DEIS at 3-112.

¹³¹ See: "Getting it Right," William Block (co-Editor-in-Chief), *Jrnl of Wildl. Mgmt.*, 71(4):1023. This is the journal that Doerr et al. was published in. See also: "Fraud in Science," Jerald Schnoor (Editor) *Env. Sci. & Tech.*, March 1, 2006 at 1376. (We do not allege fraud, but together the two editorials show a broad range of reasons that some peer reviewed published science can mislead and why skepticism can be justified.)

SCS-98

An identified issue for this project is: "*Issue: The effect of the project on deer should be analyzed using volume class not volume strata.*" (DEIS at 1-19) The Forest Service response was that a 2005 directive by Forest Supervisor Cole requires using Vol-Strata data with the deer model. The best available science is that either TimTyp (i.e. volume class data) or Size-Density should be used, and in fact Size-Density data was used in deer modeling for the 2007 Forest Plan DEIS. The National Forest Management Act regulations require that the Forest Service use best available science, and therefore reliance should be placed on Size-Density data, which the Forest Service has already adapted for use in the deer model.

SCS-99

In addition, broadening from the topic of deer, to apply best available science, all wildlife analyses and maps (such as Figs. 3-2) need to use Size-Density data rather than Vol-Strata.

The Forest Service has not disclosed the shortcomings of its Vol-Strata data.

SCS-100

F. The Deer Multiplier Has Been Applied Incorrectly.

The deer multiplier of 100 deer per square mile was derived for an older deer model (Suring et al. 1992) that had a maximum HSI (representing best quality habitat) of 1.0,¹³² and ambiguously specified that the multiplier be applied at that numeric value without mentioning that the value corresponds to best habitat. The Forest Service is misapplying the multiplier in an oddball habitat model that has an HSI range to 1.3, without first calculating an equivalent multiplier value that can be used at an HSI of 1.0 in that model. That the multiplier was derived for a best habitat HSI of 1.0 is clear from x-axis in Fig. 1 and Fig. A-1 of the derivations cited in the footnote above. ADF&G has attempted to clarify the Forest Service's error this way:

The only empirical review of HSI values was Dave Person's work relating HSI scores for pellet survey transects and the deer population density along those transects estimated from average pellet groups per plot. That analysis showed that:

1. HSI scores positively correlated with deer density estimated from pellet groups but there was much noise (not surprising).
2. An HSI score of 1 corresponded to a density of 100 deer/mi². At the time of the analysis in 1996, an HSI score of 1.0 was the highest score possible. Subsequently, the highest HSI score was increased to 1.3. Therefore, the 100 deer/mi² used by Person would now apply to an HSI score of 1.3.¹³³

and in this way:

The 1997 description of the model and its application was incorrect with respect to the deer multiplier. The highest HSI value (whether

¹³² Person & Bowyer (1997) Appendix 1 (the wolf PVA), and Person et al. (1997) Appendix 2 (letters to Regional Forester and TLMP Team Leader, August 18 and September 19).

¹³³ ADF&G comments of June 15, 2006 at 3 on the preliminary draft proceedings of the Tongass Conservation Strategy Review Workshop.

SCS-100
(cont.)

it is scaled to 1.0 or 1.3) should correspond to a density of 100 deer/mi².¹³⁴

The Forest Service's incorrect use of the deer multiplier causes a 30 percent over-estimation of current and future habitat capabilities, and a consequent under-estimation of the impacts of logging.

SCS-101

G. Significant Shortcomings of the Deer Model Were Neither Disclosed Nor Taken Into Account.

The deer model is useful but has significant shortcomings that need to be taken into account when using it results. The Forest Service has neither disclosed these shortcomings in the DEIS nor has it taken them into account. The shortcomings include no consideration of stochastic events (e.g. severe winters, large-scale blowdown) and no consideration of juxtaposition of habitats, among other factors. We are providing for the record Kiester & Eckhardt (1994) which contains summary material and number of individual peer reviews that review the deer model, and peer reviews of the model that were done at the request of USF&WS in 1997 by Hanley, Klein, Marcot, and Suring.

SCS-102

H. Cumulative Impacts Are Under-estimated By Assuming Past Logging Was Volume Class 5.

The analysis of deer (and marten) habitat capability lost to date to logging was based on the unjustified assumption that past logging was Volume Class 5 old-growth.¹³⁵ No substantive proof was provided that this is a reasonable assumption, and we believe that it an under-estimation of the loss of habitat value that has occurred to date.

Table 3CO-6 (p.3-19) predicts a loss of as much as 9 percent of the currently existing coarse canopy forest, as a result of this project. No data are presented in the DEIS for the cumulative loss of coarse canopy forest that has occurred since the advent of industrial-scale logging in the area. We believe the loss up to now has been significant, and the cumulative impact of this project will be more so. These data must be disclosed in the EIS and taken into account in deer and other wildlife analyses.

SCS-103

I. The Analysis of "High-Value" Deer Habitat Based on Quartiles Is Flawed.

The division of deer habitat into quartiles is flawed because it is based on the Vol-Strata dataset, which has no correlation to habitat quality,¹³⁶ and as recommended by ADF&G should be based on using the model with an assumption of deep snow (see subsection C, above).

The analysis focuses on percent reduction of the top quartile (so-called "High Value" habitat) for each alternative by logging system. (See DEIS at 3-87.) No aggregate loss is presented, no meaning for this analysis is described, and no standards, guidelines or other criteria are suggested for interpreting the data. Why should any of these further reductions be considered acceptable? It must be borne in mind

¹³⁴ Detailed comments attached to State of Alaska's April 27, 2007 comments on the Forest Plan DEIS, at 24.

¹³⁵ Wildlife & Subsistence Report at 8, 56, and 92.

¹³⁶ Caoette et al. (2000), Caoette & DeGayner (2005), ADF&G comments on the 2006 CSR Workshop preliminary draft proceedings, and detailed comments attached to State of Alaska comments on the 2007 Forest Plan DEIS.

SCS-103 (cont.) | as well that predicted reductions can be expected to be under-estimates, on the basis of the points we have discussed earlier.

SCS-104 | Further, to be useful to the public, quartiles should be mapped with unit boundaries and existing elevational corridors shown.

SCS-105 | J. The Analysis of "Prime" Deer Habitat is Flawed.

The location and amount of "prime" deer habitat was determined by a different means that relies directly on the Vol-Strata dataset. Because Vol-Strata views timber volume irrespective of tree size (Caouette et al. 2000), it is not a valid indicator of prime deer habitat and can be expected to inflate the amount of such habitat that truly exists.

SCS-106 | In addition the analysis of the prime habitat data that was produced (see DEIS at 3-88) suffers from the same pitfalls in paragraph two of the section above.

SCS-107 | K. The Effect of Increased Road Density and Access on Deer Should Have Been Considered.

As with wolves and marten, high road densities have adverse impacts on deer populations by allowing unsustainable hunting pressure. The recent ADF&G emergency order (November 6, 2007) expresses the obvious and clear link between road access and deer mortality.

"Roads permit vehicle access into all major watersheds resulting in a popular deer hunting area for local and non-local hunters."¹³⁷

The DEIS does not incorporate road density into its consideration of effects on deer. Please do so in the Final EIS.

VI. Recreation

SCS-108 | As we pointed out in our scoping comments, some of the information in the recreation section should have been included in the economic analysis section. For example, the fact that recreation and tourism account for 51% of the direct resource dependent employment to SE AK communities is highly significant.¹³⁸ The DEIS also indicates that tourism development has increased in the area in recent years and continues to grow. There are four outfitting and guide permits issued – doubled from two in one year (2004). Two permittees reported 55 total clients in 2004. In 2006, one guide reported fifty clients on tours. Tours use the road system to access areas for viewing scenery and hiking.¹³⁹ We reiterate that this information needs to be included in the economic analysis section so the decision maker is fully informed about the value and existence of competing resource uses.

¹³⁷ ADF&G, November 6, 2007 emergency order

¹³⁸ Iyouktug Timber Sales DEIS, 3-92.

¹³⁹

505-109 | Also, in view of this local growth and the larger growth of the recreational industry that we discussed in the economic section, the impacts to recreation are unjustified. The DEIS indicates that the consequences of the project are moderate. But recreational uses such as camping, hiking, fishing and subsistence activities will be disrupted throughout the project area. Scenery will be disrupted. Wildlife viewing will be disrupted for a 10 year period during operations.

The effects are apparently only moderate because activities would recover “quickly” after completion of harvesting. But there will be detrimental effects to the development of a Hoonah-based outdoor recreation industry. Moreover, visitors are not interested in seeing forests that are harvested – visual effects would remain for 20-30 years. In our view, there are major effects on growing guiding and outfitting industry – further degradation of the area could stop growth and shut down existing businesses. In view of our discussion in the economics section about the changing trends toward more benign and economically beneficial uses of the Tongass, the impacts on recreation are unjustified.

VII. Silviculture and Vegetation

505-110 | **Blowdown**
Clearly, blowdown is the dominant force on these forest stands. A naturally high blow-down rate has combined with a legacy of vast, contiguous clearcuts to make blowdown here severe. Please see the Ground-Truth report for information on how the sale should be modified to better account for blowdown. We add the following discussion of blowdown rates in another watershed in the northeast Chichagof area:

The natural rate of windthrow in the Game Creek watershed is high because of its location on northeast Chichagof Island. This area is subjected to frequent southeast and northwest gales. An accelerated rate of blowdown appears to be occurring along harvest unit edges in productive timber areas. There is no apparent correlation between presence of wind damage in the watershed and soil-site factors or in orientation of the buffers and unit edges. Three of five traversed post-Tongass Timber Reform Act buffers in one subwatershed have significant blowdown. In addition, extensive additional blowdown in post-Tongass Timber Reform Act buffers in Game Creek is anticipated over the next 10 years. This expectation is based on historical evidence and the accelerated blowdown that has occurred in the 2 years since harvest.¹⁴⁰

505-111 | Please analyze the risk of blowdown in view of the Ground-Truthing report and the above comments. Also, please review climatological data related to the intensity of windstorms in the project area. There is ample evidence to suggest that climate change is affecting the intensity of storms on a large scale. Please consider the additional risks posed by increasing high-intensity storms in your cumulative effects analysis.

505-112 | **Cedar**
Cutting units appear designed to high-grade yellow-cedar trees from the forest. We cannot support this approach, for several reasons.

¹⁴⁰ USDA Forest Service, Report to Congress: Anadromous Fish Assessment (January 1995).

SCS-112
(cont.) First, with yellow cedar decline, these magnificent trees are becoming rare.¹⁴¹ This area has always been very near the northern extreme end of the species range, and we fear the cumulative effects of logging will be extirpation of large cedars from the area entirely. The Draft EIS dismisses yellow cedar decline as a consideration, saying it “presently not documented in the Iyouktug project area (Hennon 2006).”¹⁴² Please consider cedar decline as more than a curiosity, and recognize that there is special reason to conserve healthy stands of Alaska yellow cedar.

SCS-113 Second, since cedar is almost always exported from the Tongass, it fails to meet the need of this sale to provide wood for local mills. It is our understanding (based on conversations with local mill owners) that helicopter logging of cedars is not well-suited to their operations. These portions of this sale could be dropped, without any adverse impact on volume to local mills.

SCS-114 **Regeneration**
Based on ground-truthing these units and evidence from other places, we are concerned that regeneration will be poor in the area’s wet, cold soils. Especially with experimental partial-cut prescriptions, we’re not sure the scientific basis is adequate to support the DEIS optimistic projections. Thus it may not be true that,

“After clearcut harvest, rapid establishment and regeneration of conifers, shrubs and herbaceous plants are expected...[After single-tree selection harvest] regeneration will result in a mosaic of multiple age classes that maintain structure features,”¹⁴³ and, “natural regeneration is expected to be abundant and include the same species mix as the original stand.”¹⁴⁴

SCS-115 **Partial Cuts**
While we appreciate the effort to explore alternatives to clearcutting, after considering the available evidence we do not see enough support for partial cut logging prescriptions. The Draft EIS describes the effects of this prescription as, “[t]his prescription would maintain or create uneven-aged stands with multiple age (size) classes of trees while maintaining existing species composition.”¹⁴⁵

Important elements may not have been considered. This prescriptions raises problems of high-grading, since the biggest spruce and yellow cedar will be targeted.¹⁴⁶ Ground-truthing information¹⁴⁷ suggests that there is a big component of large cedars in these units, that are by far the most windfirm trees. Given the uniquely sensitive Karst and wet soils of this area, a spread-out partial cut is probably not the best approach. The potential effects of harvest on the ecology of these areas is not fully known and

¹⁴¹ Pacific Northwest Research Station May, 2007. *Science Findings*.; Hennon, P.E., D’Amore, D., Zeglen, S., Grainger, M. 2005 *Yellow-cedar decline in the North Coast District of British Columbia*. Res. Note RN-549. Portland OR: USDA Forest Service, Pacific Northwest Research Station. 16 p.

¹⁴² DEIS p.3-110

¹⁴³ DEIS p. 3-17

¹⁴⁴ DEIS p.3-111

¹⁴⁵ DEIS p.3-112

¹⁴⁶ Given that one species (cedar) are targeted for removal, how is it reasonable to expect the remaining mix of species to include the full cedar component? The Draft EIS (pp.3-112—3-113) seems to imply that tree planting or other future treatment might be necessary to influence species composition. We are not comfortable relying for regeneration on the vague idea of future planting, etc. projects. Given funding realities, that sounds like the kind of thing that would go in the “deferred maintenance” pile for a generation.

¹⁴⁷ Sitka Conservation Society Groundtruthing team, “Comments on Iyouktug Timber Sale,” January 2007.

SCS-115
(cont.) | the Draft EIS does not acknowledge the slow growth rate and misinterprets the rotation age. It also can spread impacts to wildlife, watersheds and soils, because ground impact is spread over a larger area, and more frequent entries. Damage to residual trees is substantial with partial-cut prescriptions. Blowdown of remaining trees would be extreme.

SCS-116 | Therefore, although selective cutting would normally be preferable to clearcutting, because of the post-harvest windthrow potential the selective cutting program will affect twice the acreage as a clearcut. There is no clear idea about the "unraveling" potential due to potential blowdown of the remaining trees. SCS's Groundtruthing researchers have documented this unraveling in the area in connection with previous logging, making the scale of the partial cutting proposed here a very risky experiment.

SCS-117 | Finally, the project targets the biggest remaining trees. Because the valley bottom is very wet, there never was a significant amount of big tree forest - only nine percent of the project area was big tree forest before the initial logging. If the sale goes through, there will be only a miniscule portion of these big tree forests remaining.

VIII. Subsistence¹⁴⁸

SCS-118 | The Alaska National Interest Lands Conservation Act (ANILCA) requires the Forest Service to evaluate potential effects on subsistence uses and needs and determine if there is a significant possibility of a significant restriction on subsistence uses.¹⁴⁹ If there is a significant restriction, additional analyses and findings are required by Section 810 and the proposed action must (1) be modified to remove the significant restriction, (2) be dropped, or (3) proceed with the stipulation that formal subsistence hearings are held and subsequent findings published.

The DEIS indicates that the project area lies within documented community use areas for Hoonah, Angoon and Gustavus – approximately 75% of the average annual deer harvest is obtained from WAA 3551. The uses include finfish, shellfish, marine plants, berries and cedar bark. The agency relied on the Forest Plan (p.3-658) to support the conclusion that the only subsistence resource that may be affected in the future by forest activities is deer even though it notes that there could be some risk to fish habitat.

The DEIS assumes that the deer population at carrying capacity should be able to support harvest of approximately 10% of habitat capability while providing a reasonably high level of hunter success. Hunter success declines when demand represents 10 to 20% of habitat capability. If demand exceeds 20% of habitat capability, deer harvest may be directly or indirectly restricted. The DEIS concedes that under all alternatives, habitat capability would decrease and deer distribution would change. And the Deer section concludes by stating that "[a]lthough the Forest Plan conservation strategy maintains for the population viability of deer, the cumulative reduction of elevational connectivity in association with a cumulative reduction in deer habitat capability as a result of past, proposed and future harvest activities and a severe winter in 2006 will likely result in a decline in the deer population."

¹⁴⁸ DEIS, 3-127.

¹⁴⁹ 16 U.S.C. § 1320(a).

SCS-118
(cont.)

As we have emphasized throughout our comments, deer populations in the project area are severely imperiled. In our economics section, we also addressed the economic value of subsistence resources – for communities using the project area, it is tantamount to a part-time seasonal job. For this reason, we remind you of the Congressional findings that justified the enactment of ANILCA: “the situation in Alaska is unique in that, in most cases, no practical alternative means are available to replace the food supplies and other items gathered from fish and wildlife which supply rural residents dependent on subsistence uses.”¹⁵⁰ We have heard that the Hoonah grocery store is ordering extra beef this winter – a protein source that must be paid for by many people who would normally rely on local hunters for their food. Also, the policy purposes underlying ANILCA are in part to ensure that “the utilization of the public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands.”¹⁵¹

ANILCA requires that there be a hearing in affected communities before public lands are used in a way that “would significantly restrict subsistence uses.”¹⁵² A proposed action would significantly restrict subsistence uses in one of two circumstances: (1) “if, after any modification warranted by consideration of alternatives, conditions or stipulations, it can be expected to result in a substantial reduction in the opportunity to continue subsistence uses of renewable resources” and (2) “restrictions for subsistence uses would be significant if there were large reductions in abundance or major redistribution of these resources, substantial interference with harvestable access to active subsistence-use sites, or major increases in non-rural resident hunting.”¹⁵³

After the hearing, the project may occur if the significant restriction is necessary, if the activity involved the “minimal amount of public lands necessary” and if reasonable steps will be taken to minimize adverse impacts.¹⁵⁴ In view of our previous discussion about the economic value of subsistence and the costs of timber harvest, we question whether there is any economic necessity that would justify the significant restriction. Also, please explain how this large sale involves the “minimal amount of public lands necessary.” Finally, please detail the steps that will be taken to minimize adverse impacts – we believe that at a minimum this would mean a substantial downsizing of the sale.

IX. Threatened, Endangered and Sensitive Wildlife Species: Queen Charlotte Goshawk

SCS-119

Queen Charlotte goshawk have been observed in many of the proposed cutting units and there are nest sites in units 107 and 901. The Queen Charlotte goshawk, is a candidate species proposed for listing under the Endangered Species Act. There are nest sites in two of the proposed units. The goshawk is the rarest and most old-growth dependent of all the North American goshawks and it has been virtually extirpated from Washington and Oregon and is listed as a threatened species in Canada due to extensive logging of old growth forests in those areas. The Forest Plan requires an area of not less than 100 acres of productive old growth forests centered over nest tree or probable nest tree. The DEIS designates a 122 acre nest buffer around the Hippoback nest site and 128 acre nest buffer around the Iyouktug nest site.

¹⁵⁰ 16 U.S.C. § 3111(2).

¹⁵¹ 16 U.S.C. § 3112(2).

¹⁵² 16 U.S.C. § 3120(a)(2).

¹⁵³ DEIS at 3-127.

¹⁵⁴ 16 U.S.C. § 3120(a)(3).

SCS-119
(cont.)

The wildlife resource report acknowledges that action alternatives will have moderate effects because of disturbances to nest sites resulting from harvest and reductions in foraging and potential nesting habitat.¹⁵⁵ Clearcut and helicopter harvests will occur adjacent to goshawk nest buffers.¹⁵⁶ The planning record shows that there was at one time a biologically preferred recommendation for the goshawk nest buffer that lies in between cutting units 107, 104 and 172.¹⁵⁷ The preferred buffer appears to be substantially larger than the buffer that was actually utilized. Please explain the reason for the reduction.

SCS-120

Also, the analysis should do more than merely dismiss impacts based on buffering the known nest sites. It was pointed out at the Tongass Conservation Strategy Workshop that an emphasis of future research points to prey availability for Queen Charlotte goshawks, particularly related to the second growth component and dynamics across the landscape.¹⁵⁸ There should be discussion about goshawk use for activities besides nesting, including for foraging and winter habitat use (reliance for winter prey availability) which are limiting factors for goshawks in S.E. Alaska. The information regarding present forest structure as well as post-project and stem-exclusion should make it possible to evaluate the impacts on goshawk habitat. The DEIS should also discuss the impacts of road construction and logging, which can deter goshawk nesting and foraging in impacted areas. Even though the U.S. Fish and Wildlife Service did not grant a petition to list Tongass populations of the Queen Charlotte goshawk as a threatened or endangered species, it is clear that current and anticipated habitat loss caused the listing of British Columbian populations. In view of the goshawk's biological vulnerability, the DEIS should provide the hard look required by NEPA.

SCS-121

logging, which can deter goshawk nesting and foraging in impacted areas. Even though the U.S. Fish and Wildlife Service did not grant a petition to list Tongass populations of the Queen Charlotte goshawk as a threatened or endangered species, it is clear that current and anticipated habitat loss caused the listing of British Columbian populations. In view of the goshawk's biological vulnerability, the DEIS should provide the hard look required by NEPA.

SCS-122

logging, which can deter goshawk nesting and foraging in impacted areas. Even though the U.S. Fish and Wildlife Service did not grant a petition to list Tongass populations of the Queen Charlotte goshawk as a threatened or endangered species, it is clear that current and anticipated habitat loss caused the listing of British Columbian populations. In view of the goshawk's biological vulnerability, the DEIS should provide the hard look required by NEPA.

X. Transportation

SCS-123

By expanding a transportation system that is already too large, the Iyouktug timber sale represents a step backward in transportation management in this area.

At all levels of the Forest Service, the need for a coherent and sensible transportation strategy is apparent. A vast and decaying road infrastructure exists on the Tongass. Most of this road system was built with short-term timber objectives in mind, and without proper regard for long-term maintenance obligations. In the intervening decades, scientists and communities have learned hard lessons about the side effects of vast wildland road networks, in particular the ways that roads degrade habitat for salmon. In this project area, these national problems are mirrored and complicated by local factors, such as karst, deer, and marten. In scoping, we identified the need to develop and consider a range of transportation options, and to carefully consider the effects of road development.¹⁵⁹ It is very disappointing to see that these concerns have been largely ignored and discounted in the Draft EIS. It is not too late to take the time necessary to take a real hard look at transportation decisions here. Please supplement and modify the FEIS in the ways identified below. We believe that if all relevant factors are adequately considered, the proposed action will look very different than it does now.

¹⁵⁵ Wildlife and Subsistence Resource Report at 51.
¹⁵⁶ Wildlife and Subsistence Resource Report at 51.
¹⁵⁷ Appx 6 to Wildlife and Subsistence Resource Report at 2.
¹⁵⁸ Tetra Tech at 39.
¹⁵⁹ See CWP Scoping comments, October 2, 2006

A. Transportation priorities are not adequately balanced in the Alternatives.

1. New Roads not justified

SCS-124

The proposed roads for this sale are not warranted, given funding shortfalls and ongoing resource damage from the roads, and loss of roadless areas. Fiscal caution in road construction is demanded by President Bush's transportation policy.¹⁶⁰ The Forest Service Manual at 7703.1 says to, "give priority to reconstructing and maintaining needed roads and decommissioning unneeded roads...", and to "add new roads only where resource management objectives and benefits are clearly demonstrated and where long-term funding obligations have been carefully considered." The TLMP Transportation S&Gs also command that roads only be constructed where they are justified given funding, ecological and economic realities.

SCS-125

The approach in the Iyoutug sale, however, was not one of balance, but of designing a system of roads to serve the timber needs regardless the cost. First the decision was made to cut the timber, and then a road system was designed to support it. According to the Transportation Specialist Report, The transportation systems for the action alternatives were developed to provide necessary road access to timber units in accordance with their respective harvest methods.¹⁶¹

SCS-126

This is not balance, or reasoned judgement. At least, an alternative that doesn't build any new road could be a feasible option, and ought to be considered.

2. Roads not identified for closure

SCS-127

Additional roads should have been considered for closure, and different methods of decommissioning and restoration should have been considered. There are 34.37 miles of road in Old Growth Habitat LUDs, which is incompatible with the conservation strategy. Yet the project proposes to do nothing about this, and even to build more new roads on top of it. Those road miles should be targeted for closure, as a higher priority over convenient timber extraction. If there are good reasons to keep roads in OGR open, then OGRs logically would need to be moved. Please, at least consider the costs and benefits of a stronger approach towards restoration.

SCS-128

Specific roads that should be targeted for closure include the 8534 road, including the various spurs, and #85093. Also, road 8535 appears to cross medium-vulnerability karst, and could be evaluated for restoration and decommissioning.

3. Roads Analysis process is not properly completed

SCS-129

As a general comment, some very good work has been done on Roads Analysis for the project area. However, what good information is available wasn't incorporated into the decision-making process. Also, some additional works remains to be done before any Decision could be made.

The recently updated 36 CFR 212 establishes substantive requirements for the Forest Service in transportation management, including identification of a minimum road system, and a basis for decisions on science-based roads analysis. These and other policies come in response to the recognized

¹⁶⁰ 36 CFR 212.4(a)

¹⁶¹ Sandall & Heinrichsen 2007, p.6

- SCS-129 (cont.) priority of dealing with a backlog of unmaintained legacy roads. Funding priorities are a special concern. The Forest Service Manual requires Required for road work FSM 7712.12b
- “ 1. New Road Construction. Consistent with the direction in FSM 7703.1, ensure that the addition of new roads serves a documented need and that the decision is informed by a roads analysis (FSM 7712.1).
 2. Maintenance, Reconstruction, and Decommissioning. Use roads analysis (FSM 7712.1) to evaluate opportunities and priorities for reconstruction and decommissioning of roads and to provide the context at a scale and intensity commensurate with the scope of the road management issue or concern. Implementation of road maintenance activities does not require a roads analysis before proceeding; however, roads analysis is a useful management tool to help set maintenance priorities.”
- ...A roads analysis is required whenever “proposed road management activities would result in changes in access, such as changes in current use, traffic patterns, and road standards, or where there may be adverse effects on soil and water resources, ecological processes, or biological communities (road construction, reconstruction, and decommissioning), those decisions must be informed by roads analysis.” (FSM 7712.13)
- For this timber sale, the Draft EIS explains that the roads analysis process being used is a tiered process that includes the Forest Wide Roads Analysis (USFS 2003), an Iyouktug Roads Analysis (Matter 2003), and both an old (2002) and a new (in-process) Access Travel Management EA for the Hoonah Ranger District. The DEIS says, “The proposals in this EIS are based on, and compatible with, the past analysis, and the road management objectives from this decision will be included in the new ATM plan.” (DEIS, p.3-141)
- It is great to hear this necessary work has been done. This is a vast improvement over past projects that have had no Roads Analysis at all. However, there are several issues with the Roads Analysis that need to be dealt with before any Decision.
- First, it is not clear how the good information in the Analysis is actually being incorporated into the Decision. It was not used to drive alternatives.¹⁶² The substantive considerations in the Roads Analysis are vital information for a decision-maker, and thus should be contained within the EIS.¹⁶³ We encourage you to publish the pertinent area Roads Analysis—or at least the pertinent parts—in the Final EIS as an Appendix.
- SCS-130
- SCS-131 Also, there appear to be some problems with the Roads Analysis that may have skewed the analysis. For example, road 85305 was apparently not included in the Roads Analysis.¹⁶⁴ Also, the Roads Analysis assumes that everything is open for subsistence use unless designated closed,¹⁶⁵ even though this past policy has changed with the November 2005 planning rule.¹⁶⁶
- SCS-132 **4. Motorized Routes are not identified**
 36 CFR 212.50—212.57, adopted in November of 2005, requires that vehicle use on “National Forest System roads...shall be designated by vehicle class”¹⁶⁷ according to certain criteria,¹⁶⁸ and with

¹⁶² This is a major problem in itself, discussed in more detail under point B., above

¹⁶³ *Trout Unlimited v. Morton*, 509 F.2d 1276, 1282 (9th Cir. 1974). (EIS must contain all pertinent information that is or should be a part of the decision making process);

¹⁶⁴ Putz, 5/17/2007 notes. (#329.pdf in project file)

¹⁶⁵ Matter 2003, see p.5

¹⁶⁶ 36 CFR 212.50—57

¹⁶⁷ 36 CFR 212.51(a)

SCS-132 (cont.) public¹⁶⁹ and government¹⁷⁰ involvement. Non-designated routes are closed to motor vehicles under 36 CFR 261. This is a direct reversal of the old, TLMP strategy of leaving the whole forest open for motorized use, except for the rare closure. How are these regulations being dealt with for this timber sale, and this area?

B. Adequacy of the DEIS information regarding transportation.

SCS-133 The Draft EIS contains little information regarding the existing state of the transportation system, or information for cumulative effects. According to the DEIS, there are 57.2 miles of existing road in the project area, including system, unauthorized and decommissioned roads. (DEIS, p.3-140) The DEIS says, "about 36.2 miles of road are currently considered to be open in the project area." (DEIS, p.3-141) It is not clear how this number was arrived at. The area Roads Analysis lists 135.34 miles of road in the area, 93.74 of which was in Forest Service jurisdiction.¹⁷¹

SCS-134 Important questions remain about the transportation system. What is the condition of the non-open roads? What is the condition of the open roads? Is there deferred maintenance? Red culverts? Surface erosion problems? Are there transportation alternatives available? Have priorities for obliteration, maintenance and/or restoration been identified? The need to replace all the bridges certainly hints that there are issues, as does information in the project record.¹⁷² Please consider this information in the Final EIS.

1. Road impacts are not consistently considered correctly

SCS-135 The Draft EIS takes a fundamentally mistaken view in considering the impact of transportation management decisions. While we support the concept of closing roads after their useful life is over, the EIS goes too far in forward-looking speculation about future decommissioning/ storage/ maintenance work that will take place. The Draft EIS presents false confidence in our ability to make long-term commitments to close out roads after the conclusion of a ten-year-long timber sale, to the degree that the "direct impact" of the sale is understood to be a landscape where roads proposed to be built are already closed. Whatever the merits of closing the roads later, all sorts of events could intervene to prevent this from taking place, and it's not an intrinsic part of the decision. Funding priorities could change. Public demand could change. An outfitter could start a business down one of the roads, raising a significant new issue. Additional timber sales could be scheduled on the road system. This approach is not consistent with NEPA, which requires consideration of direct and indirect effects.¹⁷³

SCS-136 Also, the DEIS does not consider the effect of increased use of roads as a result of this sale. There will be substantial log truck and administrative traffic as part of and a direct consequence of the proposed

¹⁶⁸ §212.55

¹⁶⁹ §212.52

¹⁷⁰ §212.53

¹⁷¹ Matter 2003, p.2

¹⁷² For example, the 2001 ATM FONSI identifies Roads 8534 and 85093 as causing sedimentation and landslide problems, and indicates some road may be through critical brown bear habitats.

¹⁷³ 40 CFR 1502.16 "Direct effects...are caused by the action and occur at the same time and place." 40 CFR 1508.8(a) "Indirect effects...are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable," such as growth inducing effects. 40 CFR 1508.8(b)

- SCS-136 (cont.) | action. The DEIS says, "In all action alternatives the amount of road use in the area is not expected to change substantially as a result of these closures because the roads receive very little use." (DEIS, p.3-147) Please consider the thousands of trips required over a period of decades to carry out this very large timber sale, and the impact that will have on wildlife, sediment, and the transportation system.
- SCS-137 | Also, connected transportation actions are improperly classified as "ongoing" maintenance operations under cumulative effects, rather than indirect consequences of the proposed action. The reconstruction and bridge-repairs are connected actions under NEPA. Appendix D of the DEIS indicates that (NFS Roads 85305, 85307, 85309, and perhaps part of 8534) are anticipated "ongoing" actions. In the case of the 8534 road, this is not correctly classified as an "ongoing" action, because under ATM plan itself, closure of this road hinges on the present decision. In the case of 8534 and all other potentially-closed roads in the project area, at a minimum the Iyoutug Decision will keep them open for several years longer. This is the direct effect of the project. Once open and maintained for this sale (+/- 10 yrs), there is no guarantee that the 8534 road, or any other roads, will actually be decommissioned.
- SCS-138 | Furthermore, by committing the area to timber harvest on a short rotation, this Decision will also require it be reconstructed more often in the future.
- SCS-139 | The Draft EIS says keeping the Road 8534 open for this sale is called for in the ATM plan. However, the FONSI only says this road "may be needed to access a timber sale scheduled in the next few years." (2001 ATM FONSI, p.1) (emphasis added) Nothing about this ATM Decision moots NEPA's requirement to consider impacts. Whether or not it is needed, and the impacts of that decision, need to be evaluated in an EIS by comparing alternatives. Please take a hard look at the impacts and management alternatives available for the 8534 road. Our recommended action for this road is to close it, and to forego harvest of the large helicopter units (Units 125, 185, 184) to mitigate the need for future administrative road access.
- SCS-140 | **2. Please assure accurate roads mapping**
There is no transportation system map in the Draft EIS. Please include a transportation map in the Final EIS. The information of a map is essential to identifying impacts of roads, and planning road system management. Especially useful would be identified locations of surface erosion, red culverts, bridges that need repair, and other flagged places of interest.
- SCS-141 | How sure are you of road mile figures, and what are they based on? According to the area Roads Analysis (Matter 2003), "in almost all instances the miles of road documented in the ATM, are different than what is reported in INFRA (the official Tongass Road Atlas)."¹⁷⁴ The mix of transportation analysis, and shifting definitions and regulations covering various roads, makes careful attention to detail important. Please assure the best available mapping data is used and all roads are accounted for. Please also get the road atlas straightened out, and establish some adequate mapping protocol for tracking closed temporary and stored roads, that will not be shown on the official maps but will be part of the forest service transportation infrastructure.
- SCS-142 |
- SCS-143 | It is not clear from the Alternatives maps in the DEIS what the status is of the last segment of Road 8534. The legend indicates it is "other existing road," rather than "existing road."

¹⁷⁴ Matter 2003, p.7

3. Please take a harder look at transportation system maintenance.

SCS-144

The fact is, building new roads and implementing timber sales on a road system inescapably cause long-term maintenance obligations. These follow relatively fixed costs that can be estimated and tracked. In the short term, the project will impose the cost of bridge reconstruction, resurfacing, and lost opportunity cost of roads that could otherwise have been decommissioned. In the long-term, proposed roads will have to be maintained for administration of these units, including notably possible commercial thinning. We notice these calculations were begun in the Transportation Specialist Report (2007). Please do a complete cost accounting for roads, and include these long-term obligations in the economic calculation in the Final EIS.

SCS-145

In the Draft EIS, a major part of the ecological and economic equation, maintenance, is being left out, masking negative long-term impacts of the proposed sale. The DEIS does not indicate any long-term maintenance obligation from proposed roads and units. It is not counted in the timber economic calculation. The DEIS says that under action alternatives, 35.7 miles of open road will remain post-harvest, compared with 34.9 miles under No-Action, a difference of 0.8 miles, "increasing the amount of road maintenance required in the project area. (DEIS, p.3-146) But, under Alternatives 3, 4, and 5, it says, "the cumulative effect of these three alternatives is a reduced amount of road maintenance required in the project area." (DEIS, p.3-146)

SCS-146

The government track record on meeting maintenance obligations is mixed. Inadequate maintenance money is the gorilla in the room for transportation management. There is not maintenance money available to meet the needs created by the proposed action. Forest Roads Analysis at all levels show very high amounts of deferred maintenance.¹⁷⁵ In the project area, the Roads Analysis finds a current backlog of \$1,260,054, and says, This and other recent roads analysis on the Tongass have pointed out that the actual funding, for road maintenance, is around 10% of the estimates that are displayed in INFRA. This amount of annual road maintenance funds is not sufficient to keep all the forest roads in the IRAP2 fully maintained. This district as well as others have fallen behind and are building up an ever growing backlog of deferred maintenance needs.¹⁷⁶

SCS-147

There are many examples of "temporary" roads that were never closed out,¹⁷⁷ and of designated open roads that were abandoned to fall into disrepair. The Final EIS should take a hard look at the numbers. How much money, exactly, is available? What are the other maintenance priorities? If there is a maintenance backlog, how big is it? How much would these roads cost to fix?

SCS-148

Additionally, please take a hard look at substantive compliance with maintenance obligations, along existing roads. The DEIS says, All roads, both existing and proposed, would be located, designed, constructed or reconstructed, and maintained following Best Management Practices (BMPs) and other applicable laws, regulations, and specifications."¹⁷⁸

¹⁷⁵ Tongass Roads Analysis 2003;

¹⁷⁶ Matter 2003 p.22

¹⁷⁷ See footnote to Table 3TR-1, DEIS p. 3-143 The DEIS includes 0.22 miles of existing, unauthorized road as "temporary" road.

¹⁷⁸ DEIS, p.3-144

SCS-148
(cont.)
SCS-149

This is a comforting but perhaps unwarranted assertion. Existing roads are not maintained according to BMPs, as evidenced by erosion, red culverts, miles of unauthorized roads and years of deferred maintenance. Why is it reasonable to assume this timber sale will buck the trend? An especially critical question is: What impact do un-maintained roads have on resources? There is evidence that failure to achieve BMPs on roads in the project area may cause sedimentation, in apparent violation of State Water Quality Standards.¹⁷⁹ Red pipes are another impact of deferred maintenance, and another violation of the Clean Water Act.¹⁸⁰ The locations of these pipes should be considered in the FEIS, and they should all be fixed.

QuickTime™ and a decompressor are needed to see this picture.

181

SCS-150

The Draft EIS is dancing around an issue that should be fairly straight-forward. It is a clear part of the cumulative effect of this project that long-term maintenance obligations will be incurred. Please list them out by alternative so we know what we're getting into.

4. Road reconstruction

SCS-151

The approach to the difference between road maintenance and road reconstruction is not clear in the Draft EIS. A lot of what is being counted as routine maintenance actually is road reconstruction with an effect-cause relationship with this timber sale. The DEIS says, Road maintenance consists of periodic repairs to an existing road surface, brushing, and cleaning and repairing drainage features to keep the roads in the safe and useful condition for which they were designed. Road reconstruction is heavier maintenance of an existing road such as culvert replacement, surface rock replacement, and subgrade repair. Road maintenance and reconstruction consists of performing the work necessary to retain the road's traffic service level.¹⁸²

SCS-152

The DEIS indicates that ten of the eleven stringer bridges "must be replaced to accommodate log trucks prior to timber haul." (DEIS, p.3-140) The DEIS says, "Even if timber sales are not offered in the Iyoutug area, these bridges would need to be replaced in the near

¹⁷⁹ Section 313 of the Clean Water Act, 33 U.S.C. §1323(a). See Idaho Sporting Congress v. Thomas, 137 F.3d 1146, 1153 (9th Cir. 1998); National Wildlife Federation v. U.S. Army Corps of Engineers, 384 F.3d 1163, 1167 (9th Cir. 2004).

¹⁸⁰ Section 404 of the Clean Water Act, at 40 CFR 232.3(c)(6)(vii), "The design, construction and maintenance of the road crossing shall not disrupt the migration or other movement of those species of aquatic life inhabiting the water body."

¹⁸¹ Matter 2003, p.11

¹⁸² DEIS, p.141

SCS-152
(cont.)

future, 3 to 5 years, if the roads are to remain open for public use.¹⁸³
Please take a closer look at this conclusion. It seems that except for this sale, these bridges could continue to function at a diminished standard for other users. Recreation, subsistence, administrative access and timber management (e.g. thinning) may not require bridges be fixed— at least not to the same high standard. Replacing and upgrading these bridges therefore is an indirect (or direct) impact of the proposed action.

SCS-153

5. “Temporary” roads are mislabeled.

Temporary roads are a big part of the transportation strategy in the DEIS. The proposed action would construct 3.8 miles of new NFS road, and 13.4 miles of temporary road, and recommission-then-decommission 6.9 miles of existing road. The definition of a forest road, under **36 CFR 212.1**, is: Forest road or trail. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

The definition of “temporary road,” under **36 CFR 212.1**, is:

A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas.

What are being called “temporary” roads in the EIS actually appear to be the same thing as system roads. The Transportation Specialist Report in the project file refers to them as system roads, “National Forest System (NFS) roads are planned either for long-term management or for temporary use ...”¹⁸⁴ On the ground, the management actions appear identical. In all three cases, they will be shotrock roads found to be necessary and built to accommodate log truck traffic. They will all have drainage structures removed. For Alternative 3, the DEIS says, “All of the new NFS road would be closed and placed into storage after the harvest. Temporary roads would be decommissioned post-harvest. Approximately 6.3 miles of existing road would be reconstructed and then closed after timber harvest completion...”¹⁸⁵ In fact, “decommissioning,” “storage,” and “closure” of roads are identical in every respect—culverts are pulled and the roadbed abandoned to alder regeneration. This method is in contrast to a true temporary road, as under the Clean Water Act regulations, in which “all temporary fills shall be removed in their entirety and the area restored to its original elevation.”¹⁸⁶ The Transportation Specialist Report indicates, “the physical on-the-ground changes are similar to a decommissioned road; however, roads in storage are considered part of the long-term forest road transportation system and may be opened to vehicular traffic in the future.”¹⁸⁷ Apparently the difference is simply speculation about future decisions. In all probability all of the roads that would be closed, whether temporary or system roads, will under proposed silvicultural rotations be opened again (if they are ever closed). The accuracy of the term “temporary road” is also challenged by the quarter-mile of existing “unauthorized” road which is proposed for reconstruction in this sale, and which is somehow considered a “temporary” road.¹⁸⁸

SCS-154

SCS-155

The only unique thing about “temporary” roads seems to be that they won’t be mapped along with

¹⁸³ DEIS p.3-140

¹⁸⁴ Sandall & Heinrichsen 2007 *Iyoutug Transportation Specialist Report*. @p.1

¹⁸⁵ DEIS, p.3-145; emphasis added

¹⁸⁶ 40 CFR 232.3 (xv)

¹⁸⁷ Sandall & Heinrichsen 2007, p.5

¹⁸⁸ footnote to Table 3TR-1, DEIS p. 3-143

- SCS-155 | system roads, and the Forest Service does not intend to monitor or maintain them once the crossings are pulled. Thus, temporary roads could cause increased environmental impacts due to lack of monitoring or other restoration or maintenance work.
- SCS-156 | This misapplication of the term “temporary” roads masks the long-term environmental and economic impacts of proposed roads. “Temporary” roads presumably will not be designated for motorized use, and so will not show up on maps or be counted for road density calculations. Thus, this and all future decisions will underestimate the existing impact of roads on the landscape.
- SCS-157 | The problem is not merely semantic. We fear there is too much confidence placed in road closure to mitigate impacts, at the expense of making hard choices about building roads to begin with. To be clear, pulling crossings is in general a wonderful approach. It is much better to do, than not to do. However, it is not adequate to compensate for the road damage. A recent study from the Pacific Northwest is worth quoting at length:
Accelerated surface erosion from roads is typically greatest within the first years following construction although in most situations sediment production remains elevated over the life of a road (Furniss et al. 1991; Ketcheson & Megahan 1996). Thus, even “temporary” roads can have enduring aquatic impacts. Similarly, major reconstruction of unused roads can increase erosion for several years and potentially reverse reductions in sediment yields that occurred with non-use (Potyondy et al. 1991). Where roads are unpaved or insufficiently surfaced with erosion resistant aggregate, sediment production typically increases with increased vehicular usage (Reid & Dunne 1984)...

...It is perhaps widely accepted that “Best Management Practices” (BMPs) can reduce damage to aquatic environments from roads. However, time trends in aquatic habitat indicators indicate that BMPs failed to protect salmonid habitats from cumulative degradation by roads and logging (Espinosa et al. 1997). Ziemer and Lisle (1993) noted a lack of reliable data showing that BMPs are cumulatively effective in protecting aquatic resources from damage. Although road location, design, construction, and maintenance may have improved over the years, many tens of thousands of kilometers of roads remain on public and private lands that were constructed with relatively low concern for their environmental consequences (e.g., see Figure 2). Until problem “legacy roads” are improved (e.g., surfaced, stabilized, obliterated) they will continue to degrade water quality and aquatic systems for many years. Furthermore, the assumption that road obliteration or BMPs will offset the negative impacts of new road and landing construction and use is unsound since road construction has immediate negative impacts and benefits of obliteration accrue slowly.”¹⁸⁹
- SCS-158 | **4. Please consider helicopter yarding in transportation management**

The Draft EIS completely fails to incorporate helicopters into its transportation planning. None of the Road or Transportation Analysis documents plan for helicopters. Yet, there are important considerations for sales with a large helicopter component such as this. For example, the locations of landings and sortyards and fueling stations need to be determined. Fuel, with the inevitability of leaks and spills, raises unique issues. Possible overflights of sensitive areas, such as buffered bear dens or goshawk nests, should be identified and avoided. Please consider these issues in the Final EIS.
- 5. Economic impacts of roads**
- ¹⁸⁹ Beschta, R.L., Rhodes, J.J., Kauffman, J.B., Gresswell, R.E., Minshall, G.W., Karr, J.R., Perry, D.A., Hauer, F.R., Frissell, C.A., 2004. Postfire management on forested public lands of the Western USA. *Conservation Biology*, 18: 957-967.

SCS-159 Thank you for including actual numbers for road construction and reconstruction costs. (DEIS, p.3-144) This is very useful and topical information. According to Table 3TR-2 (DEIS, p.3-144) Alternative 1, no action, would require \$240,000 for four bridges, whereas Alternative 2 would require \$1,020,000 for seventeen bridges, a difference of \$780,000 and thirteen bridges. Missing from the equation however are the indirect effects of maintenance, and long-term transportation obligations intrinsic in the decision to log units on the road system. These costs are externalized onto the taxpayer, and onto damage to resources like fish.

XI. Watershed and Fish

SCS-160 The project area contains five watersheds and one frontal unit which range in size from 2,851 to 14,925 acres and provide habitat for six species of fish – chum, coho and pink salmon, steelhead, cutthroat & dolly varden trout and other aquatic and riparian species. There are 330 miles of streams and 12 acres of ponds in the project area. The Iyouktug creek watershed contains the more valuable anadromous fish habitat because there are more accessible channels and Suntaheen Creek contains high quality resident habitat.

The project would remove up to 28% of the forest canopy in several subwatersheds, increasing stream temperatures. Road construction and other logging activities increase sediment load and stream flows, compromising spawning and rearing habitat. Because of existing damage to watersheds in the project area and to watershed in adjacent private lands, further compromise of fish habitat is unjustifiable.

A. Water Quality

1. Temperatures

SCS-161 Timber harvests affect stream temperatures due to a loss of shading with its consequential temperature increases and decreases in the amount of dissolved oxygen. Fish streams should have temperatures of less than 15 degrees Celsius for migrating and rearing areas and temperatures should be less than 15 degrees Celsius for spawning, egg and fry incubation areas. Higher stream temperatures reduce egg and fry survival, reduce growth rates due to increased rates of respiration and metabolism, cause premature smolting and shifts in emigration timing reducing marine survival, increase vulnerability to pollution by increasing the toxicity of organic chemicals and metals and increase risks of predation and disease.¹⁹⁰

The DEIS relies on data from Prince of Wales Island watersheds as establishing that there is “no predictive relationship between harvest and high stream temperature.”¹⁹¹ This data was collected at least 15 years after harvest occurred and the DEIS relies on the fact that the majority of logging in

¹⁹⁰ Richter, A. and S.A. Kolmes. 2005. Maximum Temperature Limits for Chinook, Coho, and Chum Salmon and Steelhead Trout in the Pacific Northwest. Reviews in Fisheries Science, 13:23-49.

¹⁹¹ DEIS 3-152.

- SCS-161
(cont.)
- Iyouktug occurred 15-20 years ago, making it unlikely that this harvest is causing temperatures to exceed 15 degrees.
- We question relying on the Prince of Wales study because the effects of timber harvest on stream temperatures can be specific to the character of the riparian buffer. As an initial matter, timber harvest is correlated with increases in stream temperature but it seems to be agreed that the most critical problem is the removal of riparian vegetation.¹⁹² Therefore, stream buffers seem to be the most effective tool for addressing stream temperature increases.
- But we have two concerns about stream buffers in the project area and request that you provide additional analysis in subsequent NEPA documentation. First, studies show that even though buffer width is the simplest means of minimizing effects on stream temperatures, the maximum benefit would be achieved by designing riparian buffers that maintain a desired angular canopy density.¹⁹³ Please discuss the quality of riparian vegetation and angular canopy density. Second, as we previously noted, watersheds on northeast Chichagof Island experience a high natural rate of windthrow and significant blowdown has occurred in 60% of the post-Tongass Timber Reform Act buffers traversed.¹⁹⁴ In view of the high windthrow potential in the project area, please discuss whether the riparian buffer will be adequate to protect riparian vegetation.
- SCS-162
- We recognize that in a general sense, riparian buffers may have once been adequate to ensure adequate stream temperatures in Tongass watersheds. But the concerns noted above are more compelling in view of rising global temperatures. A recent stream monitoring study by Cook Inlet Keeper and Homer Soil and Water Conservation District showed that in 2005 there were more days than ever before that exceeded temperature limits considered healthy for salmon.¹⁹⁵ In Southeast Alaska, the 2006 pink salmon run was nearly 80% less than predicted.¹⁹⁶ The management director of the Alaska Department of Fish and Game's commercial fisheries division attributed the poor run in large part to the warm temperatures that occurred during the parent year, 2004.¹⁹⁷ Scientific data taken from the Yukon River indicates that salmon are already suffering from the effects on rising stream temperatures in Alaska: "[e]xamination of historic temperature data suggests that rising average water temperatures during the past three decades appear to be associated with the increase in disease and potential pre-spawning mortality among Yukon River Chinook salmon."¹⁹⁸
- SCS-163
- Because of the economic, cultural and recreational value of salmon, we request that you incorporate a discussion of climate change and rising stream temperatures in your cumulative effects analysis. The assumption that stream temperatures will be fine because of a fifteen year old study done on Prince of
- SCS-164

¹⁹² Patrick Teti, The Effects of Forest Practices on Stream Temperature: A Review of the Literature (1998)

¹⁹³ Patrick Teti, The Effects of Forest Practices on Stream Temperature: A Review of the Literature (1998)

¹⁹⁴ USDA Forest Service, Report To Congress: Anadromous Fish Habitat Assessment (1995).

¹⁹⁵ See Sue Mager, Changes in Alaska Salmon Stream Habitat Due to Climate Warming (October 10, 2007).

¹⁹⁶ Deborah Williams, The Evidence in Alaska – 2004/2005/2006: The Epicenter for Global Warming in the Nation (2007)(compiling and summarizing news articles about the various effects of global warming in Alaska).

¹⁹⁷ Deborah Williams, The Evidence in Alaska – 2004/2005/2006: The Epicenter for Global Warming in the Nation (2007)(compiling and summarizing news articles about the various effects of global warming in Alaska).

¹⁹⁸ Koran, R., P. Hershberger and J. Winton. 2003. Effects of Ichthyophonous on Survival and Reproductive Success of Yukon River Chinook Salmon. Federal Subsistence Fishery Monitoring Program, Final Project Report No. FIS 01-200. U.S. Fish and Wildlife Service, Office of Subsistence Management, Fishery Information Services Division, Anchorage, Alaska.

- SCS-164
(cont.)
- Wales Island ignores the differences between the two islands and more importantly ignores the very real possibility that stream temperatures in the project area have already been affected by climate change. Alaska based studies anticipate a predicted water temperature change of 3 degrees Celsius or more in non-glacial systems.¹⁹⁹ The cumulative effects analysis is incomplete without that discussion. Also, in order to ensure that the cumulative effects analysis and your discussion of existing watershed conditions are informed by the best available data, please collect current stream temperature and stream flow data in project area watersheds.
- SCS-165

2. Sediment Loads and Roads

- SCS-166
- The Draft EIS does explain some substantial negative impacts from roads on fish and watersheds, and does a fair job explaining the ways that roads can kill salmon. The analysis of effects, however, by grouping impacts into vague categories does more to prevent understanding than improve it. Very specific information is available about effects of roads on watersheds, so why reduce that great information to a vague "moderate" label? Much more useful information for the Final EIS would be pinpoint locations of sedimentation, passage problems, slides, etc. on a map.
- SCS-167
- We are concerned with the cumulative effects of 230 stream crossings, including five red culverts in the project area, and apparently several identified (but unmapped in the EIS) slides and washouts at steep stream crossings.²⁰⁰ The Iyoutug watershed in particular is very intensively roaded. One concern is the 8534 road, which is identified in the project file as an ongoing sediment problem that is waiting only on this timber sale to be fixed. As indicated in our comments the "Transportation" section, we would like to see much closer attention paid to maintaining the road system with regard for fish.
- SCS-168
- We are also concerned about the effects of increased sediment on fish. Increase in sediment beyond natural conditions may be caused by equipment in the stream, inadequate crossings, logging or road induced landslides & storm runoff over disturbed areas. Roads contribute more sediment to streams than any other land management activity. Higher erosion rates occur with heavy traffic. Salmonid survival declines in some Alaska streams when timber harvest increased amount of fine sediment. The DEIS seems to excuse this as a short term effect because the amount of gravels returns to prelogging condition in 5 years. This statement completely ignores the life cycle and habitat use patterns of salmon. Most salmon species complete their spawning cycle within 2-4 years. If they are displaced from spawning habitat in their natal streams, the run can be lost permanently. Please explain the basis of the assumption that degradation of salmon habitat would have only short term effects. The Iyoutug and Suintaheen watersheds have the highest sediment risk due to extensive past and proposed harvest and in view of the potential to affect channel stability and available spawning gravels as well as 119 cumulative stream crossings, road construction will have unacceptable consequences for fish habitat.

B. Clean Water Act Compliance

¹⁹⁹ Kyle, R.E. and T.B. Brabets, 2001. Water temperature of streams in the Cook Inlet basin, Alaska, and implications of climate change. U.S. Geological Survey Water Resources Investigation Report 01-4109.

²⁰⁰ DEIS p.3-153

SCS-169 | Section 313(a) of the Clean Water Act provides that all federal agencies “engaged in any activity resulting, or which may result, in the discharge or runoff of pollutants,” must comply with the Clean Water Act’s requirements, including limits imposed by states through the Act. 33 U.S.C. § 1323(a). The logging and road building activities approved by the Forest Service in this sale will likely violate the Clean Water Act. Additionally, NEPA requires the Forest Service to discuss likely water quality violations and their impacts in an EIS. The DEIS has not discussed likely water quality violations.

SCS-170 | For streams classified for all fresh water uses under 18 AAC 70.020, the turbidity standard is:

May not exceed 5 nephelometric turbidity units (NTU) above natural conditions when the natural turbidity is 50 NTU or less, and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 25 NTU.²⁰¹

As the most recent monitoring data indicates, the turbidity standard is often violated following the commencement of construction activities.²⁰² This data suggests that activities associated with this project will violate the water quality standard for turbidity. Please discuss any data collected that analyzes turbidity exceedances resulting from road construction.

SCS-171 | The sediment standard for streams classified for water-supply uses is: “No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method.”²⁰³ The sediment standard for streams classified for growth and propagation of fish does not permit increases more than 5% by weight above natural conditions.²⁰⁴ The Forest Service’s own studies show that logging and road building activities violate the sediment standard. For example, a 1987 report by Steven Paustian concluded that “[s]ome short term degradation of water quality from increased turbidity and suspended particulates is unavoidable, particularly during road building.”

SCS-172 | Consequently, this project will result in violations of the sediment standard. It is our impression that there has not been monitoring of sediment loading in streams since the 1980s in violation of the Forest Plan’s monitoring requirements. Given the admission that short-term degradation from sediment loading is unavoidable, the Forest Service needs to find cost-effective ways to monitor sediment loading from logging and road construction activities.

C. Water Yield

SCS-173 | Your cumulative effects analysis should include a discussion of the impacts of climate change on water yield. There may be increases in annual precipitation, flooding events, reductions in summer baseflows and more frequent rain-on-snow events. Please seek out and discuss how climate change combined with canopy removal could increase risks of higher peak stream flows.

XII. Wetlands

²⁰¹ 18 AAC 70.020(b)(12).

²⁰² Forest Service’s Annual Monitoring & Evaluation Report – 2004, Soil and Water at 21.

²⁰³ 18 AAC 70.020(b)(9).

²⁰⁴ 18 AAC 70.020(b)(9).

SCS-174

The DEIS indicates that that past and proposed road construction has avoided wetlands because 42% of existing roads are on wetlands, which constitute 48% of the project area. Executive Order 11990 requires federal agencies to avoid adverse impacts associated with wetland modification. In our view, the presence of 42% of the roads in 48% of the area does not meet this standard. If you proceed with this sale, please remove any cutting units which would require additional road construction in wetlands.

XIII. Submission of Comments

These comments are respectfully submitted by:

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Responses to Comments

Appendix B



Larry Edwards
<larry.edwards@wdc.greenpeace.org>

11/19/2007 11:35 PM
Please respond to Larry Edwards

To: comments-alaska-tongass-hoonah@fs.fed.us
cc: Bruce Baker <bhbaker@alaska.net>, Gabriel Scott <gscott@cascwild.org>, Gregory Vickrey <gregory@tongassconservation.org>, Paul Olson <paul@sitkawild.org>

Subject: Iyouktug

Hello,

Attached are joint comments on the Iyouktug DEIS by five organizations.

Some graphics submitted for these comments are non-functional, and if you will accept an update we will submit a revision that includes them tomorrow.

-- Larry Edwards
907-747-7557
Sitka Field Office

SCS-175



Greenpeace Iyouktug_DEIS_Comments_SCS_GP_CWP_TCS_JGSC__19Nov07.pdf

Responses to SCS – Paul Olson, Larry Edwards, Gabe Scott, Gregory Vickrey, Bruce Baker, Sitka Conservation Society, Greenpeace, Cascadia Wildlands Project, Tongass Conservation Society, Juneau Group of the Sierra Club

SCS-1 – Thank you for reviewing the Iyouktug DEIS and for providing references. The documents you placed in the “ftp” site were provided to the IDT and placed in the project record. The IDT reviewed the documents provided and used what they considered to be the best available science (Iyouktug project record).

SCS-2 – We recognize you support the No-action Alternative. Please see responses to BC-4, BC-5, and EH-1.

SCS-3 – This project is in compliance with the Forest Plan. Please also see responses to BC-4, 6, 17, 18, 23, and 27; these comments are also further discussed below.

SCS-4 - The emphasis for the Timber Production LUD is timber management. Multiple uses are maintained throughout the Forest. All Forest Plan Standards and Guidelines were incorporated into the Iyouktug project through project design. These comments are also further discussed throughout these responses.

SCS-5 – The Forest Service corrected the deficiencies identified by the U.S. Court of Appeals for the Ninth Circuit by completing the 2008 Tongass National Forest Land and Resource Management Plan (Forest Plan) Amendment. As described in detail in the Final EIS and Record of Decision for the Forest Plan Amendment, the amended Forest Plan provides extensive protection for roadless areas. All of these documents are available at <http://tongass-fpadjust.net/>.

The Iyouktug Timber Sales project is consistent with the 2008 Forest Plan amendment, as described in the transition language in the 2008 Forest Plan Amendment Record of Decision (USDA Forest Service 2008b and see Chapter 1 of the Iyouktug FEIS, Forest Plan Amendment).

Related to climate change, please also see responses to SCS-26 through SCS-29.

SCS-6 – The Forest Plan Amendment did further analysis on the allocation of LUDs in roadless areas. Alternative 1 in the Forest Plan Amendment would have assigned non-development LUDs to all inventoried roadless areas. The decision whether the inventoried roadless areas in the Iyouktug project area will be managed for timber production was made at the Forest Plan level. The Iyouktug roadless areas are lower value roadless areas in the 2003 Roadless SEIS and the Iyouktug project area is within the Phase 1 portion of the suitable land base in the 2008 Forest Plan Amendment.

SCS-7 - A revised market demand analysis was done for the Forest Plan Amendment process. This market demand analysis was used to determine the 2007 market demand as stated in the Iyouktug DEIS Appendix A and has been used to update the market demand for FY 2008 (Iyouktug FEIS Appendix A).

See the responses from SCS-54 to 59 for more information.

SCS-8 – The IDT and the Responsible Official considered many alternatives in addition to Alternatives 1 through 5. As described in the DEIS and FEIS, Chapter 3, several “downsized” options and alternatives that build no new roads and/or do not enter roadless areas were

considered. Alternative A considered harvesting timber using only existing roads. Alternative B considered harvesting timber using only existing roads and helicopter yarding. Alternative D avoided entering roadless areas and used only ground-based systems. And Alternative F looked at small sales only. These and additional alternatives were eliminated from detailed analysis for the reasons described in the DEIS and FEIS, Chapter 2, Alternatives Considered but Eliminated from Detailed Study section. Please also see responses to BC-4 and EH-1.

SCS-9 – Alternatives 3, 4, and 5 respond to all the significant issues to varying degrees (DEIS and FEIS, Chapter 2, Issue Comparison). As stated in the DEIS and FEIS, Alternative 3 was designed to comprehensively address both Issues 1 and 2: “Alternative 3 was developed to minimize impacts to deer habitat and connectivity while providing for an economic timber supply.” (DEIS, page 2-9). In addition, Alternative A considered harvesting timber using only existing roads; this would provide the most economical alternative, would not enter roadless area, and would impact the least acres of forest. Alternative A responds to all of the issues; however, it does not meet the need for this project and was eliminated (see the DEIS and FEIS, Chapter 2, Alternatives Considered but Eliminated from Detailed Study section and the project record for more information). Please also see response to BC-4.

SCS-10 – Alternative 2 was the proposed action used to solicit scoping comments. It was designed to meet the purpose and need, not to address the issues. The other action alternatives address the issues in various ways. Alternative F proposed timber harvest only through small sales; it was eliminated because it was not substantially different from Alternative 5 (DEIS and FEIS, Chapter 2, Alternatives Considered but Eliminated from Detailed Study).

SCS-11 – Alternatives 1 and 4 do not enter roadless areas. Alternatives 3 and 5 both focus on economic viability. Although Alternatives 2, 3 and 5 impact roadless areas, the analysis in Chapter 3, Roadless Area Resources, IRA Area Affected By Harvest and Roads section in the DEIS and FEIS is a conservative estimate of Roadless Area impacts. In these alternatives, most of the timber harvest in the IRAs is helicopter harvest with a single tree selection prescription.

Several additional alternatives were considered that did not go into roadless or build new roads, but these alternatives were eliminated for the reasons described in Chapter 2, Alternatives A, C, and D, Alternatives Considered but Eliminated from Detailed Study.

SCS-12 – The DEIS and FEIS (and the Wildlife and Subsistence Resource Report) supports your statements that Alternative 3 proposes to harvest in roadless areas and to construct fewer miles of roads than Alternatives 2 and 5. The Management Indicator Species and Other Wildlife section also address the effect roads have on marten, deer and bear. However, a range of alternatives with varying degrees of impact are presented to the decision maker (DEIS and FEIS, Chapter 2). Although road construction is proposed in all of the action alternatives, all of the roads in Alternative 3 would be closed and stored, or decommissioned after harvest activities to eliminate motorized use. There are no standards and guidelines for miles or density of roads for wildlife that occur in this analysis area.

The DEIS and FEIS Chapter 3 (and the Wildlife and Subsistence Resource Report), Habitat Connectivity and Old Growth section supports your statement that corridors will be reduced as a result of the action alternatives. Please see responses to BC-5, BC-8, BC-9 and BC-10 for additional information on connectivity.

SCS-13 – The ADFG emergency order closing the doe hunting season on Northeast Chichagof Island and the subsequent Federal closure have been added to the FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Habitat Connectivity and Old Growth section, Management Indicator Species and Other Wildlife, Affected Environment for Deer section, and the Subsistence section. Although the analysis already recognized that record snowfalls during the winter of 2006-2007 “likely” resulted in a substantial winter kill of deer, the analysis was updated to reflect that the winter did result in a substantial winter kill of deer.

The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Habitat Connectivity and Old Growth, Management Indicator Species and Other Wildlife, and Threatened, Endangered, Petitioned, and Sensitive Wildlife Species sections considered and clarified road construction and associated activities as part of the analysis of “harvest activities”. The Wildlife and Subsistence Resource Report, Analysis Methods, Analysis Assumptions section was updated to reflect that “harvest activities” were assumed to encompass all activities associated with the harvest of timber including but not limited to an increase in human activity, felling, bucking and yarding of timber, noise and activity associated with the use of all equipment, construction and use of roads and gravel pits, construction and use of decking, landing and yarding areas, construction and use of helicopters and helicopter landing areas and, as part of the cumulative effects, the potential for windthrow. Although there are no standards and guidelines addressing fragmentation of habitat in Timber Management LUDs, connectivity was used as a critical habitat element to address fragmentation. Please see response to BC-5, BC-8, BC-9, and BC-19 for additional information on connectivity.

SCS-14 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Environmental Consequences for Deer (please see response to SCS-12) and the Environmental Consequences on Subsistence, Sitka Black-tailed Deer, Access section address the effects of roads on deer. A range of alternatives with varying degrees of impact is presented to the decision maker (DEIS and FEIS, Chapter 2). Alternatives A and B (described in Chapter 2) do not include any new roads. These alternatives were considered and eliminated from detailed analysis.

SCS-15 - Through the analysis process, it was determined that the significant issue would focus on habitat connectivity that directly effects deer habitat and populations which in turn effects subsistence harvest. Subsistence was initially considered for an issue (please see Chapter 1, Other Issues and Concerns). The DEIS and FEIS, Chapter 3, Habitat Connectivity and Old Growth section, Management Indicator Species and Other Wildlife sections, and Subsistence section all address the effects to deer and deer habitat.

SCS-16 - The DEIS and FEIS, Chapter 2, already consider an alternative in detail that addresses connectivity as a critical habitat element to address fragmentation. (please see response to BC-5, BC-8, BC-9, and BC-19 for additional information on connectivity).

Recent information about the deer winter mortality is not considered a “significant new circumstance” because the DEIS took into consideration that the 2006/2007 winter would result in a high mortality of deer and the FEIS was updated to reflect the most recent information (please see response to SCS-13).

The viability of the deer population was not considered an issue driving an alternative because viability is assessed at the forest level and not the project level. The Forest Plan contains a comprehensive conservation strategy using a system of old growth reserves (OGRs) designed to

provide old growth habitats in Old Growth LUDs in combination with other non-development LUDs to maintain viable populations of native and desired non-native fish and wildlife species and subspecies that may be associated with old growth forests (USDA 1997c, p. 3-76). This strategy, in addition to the implementation of Forest Plan standards and guidelines, was developed to maintain species viability (please see response to SCS-5).

SCS-17 – A range of alternatives with varying degrees of impact is presented to the decision maker (DEIS and FEIS, Chapter 2). Alternative 4 was developed to minimize impacts to the roadless character while Alternative 3 was developed to maintain deer habitat and connectivity. Alternative 5 was developed to address economic viability. Every alternative does not have to address every issue. Each alternative was analyzed to determine how it addressed the issues, and all alternatives respond to the issues to varying degrees. The decision maker can choose and modify any alternative in the ROD. Please also see response to SCS-9.

SCS-18 – The DEIS and FEIS, Chapter 2, Alternatives Considered in Detail and Alternatives Considered but Eliminated from Detailed Study address the range of alternatives. Alternative A (harvest using only existing roads) was eliminated mainly because it does not meet the purpose and need of the project. Additional reasons for dropping this alternative relate to the transportation system. Bridge replacements/ reconstruction would be needed to support large log trucks on currently open roads in this and other alternatives; if these replacements do not occur, the volume of Alternative A would be substantially lower than 5 MMBF. In addition, one of the Forest Plan goals for the Timber Production land use designation (LUD) is “to plan a transportation network of roads and helicopter access that will eventually access most of the suitable timber lands for standard logging or helicopter yarding systems.” By harvesting only units along existing roads, this alternative would increase road construction and helicopter yarding costs of future projects while removing the lowest cost units with this entry. As stated in Chapter 2, this alternative would not meet Forest Plan goals and would raise costs of future projects.

The DEIS and FEIS address the timber supply in Chapter 1, Purpose and Need, and Decisions to Be Made, and in Chapter 3, Affected Environment for Timber Economics (Employment). Appendices A, Reasons for Scheduling the Environmental Analysis, in both the Iyouktug and Couverden EISs (USDA Forest Service 2005c) further describe why timber sales were proposed in each of these places. In addition, as described in the Couverden ROD, larger economic timber sales may be offered from the Couverden area, potentially making less timber available to small operators in the Hoonah area.

Please also see response to BC-5.

SCS-19 – Any operator can hire helicopters to yard timber. However, helicopter logging is the most expensive logging system. A small sale using helicopter costs more per mmbf because helicopter mobilization costs are the same for large or small volumes of timber. Please see FEIS, Chapter 3, Timber Economics, Environmental Consequences on Timber Economics, Logging Systems section for information on the economics of the proposed timber sales and Chapter 2, Alternatives Considered in Detail; Chapter 1, Purpose and Need, Proposed Action, and the Decision to be Made sections for the range of considered alternatives. In addition, please see responses to SCS-8 and 50.

SCS-20 – Various levels of open roads were considered in the Iyouktug Timber Sales analysis. While Alternatives 2, 4, and 5 leave all new road open, Alternative 3 would close and store all

new roads in the project area DEIS and FEIS, Chapter 2, Alternatives Considered in Detail). The request to close additional roads is noted but is not done through this project (see DEIS and FEIS, Chapter 2, Alternatives Considered but Eliminated from Detailed Study, Alternative J). Additional road closures and other restoration activities will be considered in the future ATM analysis. The Hoonah Ranger District Access and Travel Management Plan EA will examine the district-wide road system.

In terms of individual requests: All of the action alternatives close (and store) reconstructed roads, and decommission all temporary roads. Road closure methods to be used in the Iyouktug project area include installation of a barrier, classification of system roads as closed, not identifying a road as open on the Motor Vehicle Use Map, and some of the physical actions that decommission temporary roads and store Maintenance Level 1 roads (see Appendix C of the DEIS and the Glossary in Chapter 4 of the FEIS). Gating of roads was not considered; usually gating is used for seasonal or administrative access. Snowfall in the area closes the roads to vehicles seasonally from December to May. A Forest Road Order is an option to close roads except for subsistence users, but would require substantial law enforcement costs. This has not been proposed for this project. ANILCA does assure access, but does not assure motorized access. Roads can be left open for subsistence, but that is not currently being proposed; the future ATM analysis may consider that as an option. No karst features were noted during field reconnaissance on proposed roads; none on the roads in Project Area have existing problems with sinkholes. Prioritizing habitat impacted is important due to the amount of time and money necessary to fix a single pipe. Red pipes that had the most significant impact to anadromous and resident fish have been fixed in two phases of replacement. Fourteen red pipes have been retrofitted or replaced within the Iyouktug project area since 2000 (six in 2000 and eight in 2004-05) and several others were fixed by removing the structures on the 85311 Road. Please also see response to OHMP-3.

SCS-21 – Two alternatives that do not build any new roads were considered but eliminated from detailed study for the reasons described in the DEIS and FEIS (Chapter 2, Alternatives Considered but Eliminated from Detailed Study, Alternative A and Alternative B).

SCS-22 - 36 CFR Parts 212, 251, 261, and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule defines forest roads as: A road ... wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. Our analysis considered the future need for protection, administration and utilization of National Forest as well as resource concerns. Small and larger sales included in the Iyouktug alternatives may occur over an extended time period; these sales would depend on using roads for a longer time frame than temporary roads would allow. Depending on the alternative selected, the amount of remaining suitable and available productive forest land in the project area would range from 9,970 to 6,668 acres. Please see the FEIS, Chapter 3, Affected Environment for Forest vegetation, Chart 3SV-1 and Direct and Indirect Effects on Forest Structure and Health, Table 3SV-5. No future harvest is planned, but potential future harvest is also not precluded in the Iyouktug project area due to Forest Plan LUD objectives. Please also see response to BC-23.

SCS-23 – At the time of the Couverden decision, small sales were identified as a subset of the selected alternative; the Couverden decision also includes large sales (USDA Forest Service

2005c). Small sales are also a component of the Iyouktug Timber Sales project along existing and new roads. Please also see responses to SCS-10, 18, and 21.

SCS-24 –The range of alternatives is addressed in responses to SCS-8, 9, 10, 11, 17, and 37.

Please see responses to BC-5, BC-8, BC-9, BC-19, SCS-12 and SCS-13 for information on fragmentation and connectivity and SCS-13 for information on the analysis of roads related to wildlife.

The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Report), Habitat Connectivity and Old Growth section discloses the effects to connectivity. The connectivity analysis considered the location of Old Growth Reserve LUDs and beach and riparian buffered habitat, and changes to productive old growth habitat, coarse canopy habitat, and road density. A range of alternatives with a varying degrees of impact is presented to the decision maker (DEIS and FEIS, Chapter 2). Alternative 1 maintains the existing condition, with all of the travel corridors remaining intact and no new road construction. Alternative 3 was developed to minimize impacts to deer habitat and connectivity by excluding specified units and closing roads after harvest activities. The construction of roads was considered as part of the harvest activities in this analysis (please see response to SCS-13). This alternative was not developed to address or eliminate all wildlife concern. Although corridors are reduced in width in all of the action alternatives, landscape level connectivity is maintained as required in the Forest Plan (USDA Forest Service 1997a). Forest Plan Standards and Guidelines do not require any specific number, width or distribution for corridors.

Road construction was not considered to fragment habitat because deer generally are not deterred by roads even with steep cut-banks and these are not high use roads. Alternative 3 was design by deferring or modifying units to retain corridors of old-growth forest to allow deer easier travel between elevations for winter and summer habitat and within lower elevation habitat in the winter.

A range of alternatives with a varying degrees of impact is presented to the decision maker (DEIS and FEIS, Chapter 2). Alternative 1 maintains the existing condition, with all of the travel corridors remaining intact and no new road construction. Alternative 3 was developed to minimize impacts to deer habitat and connectivity by excluding specified units and closing roads after harvest activities.

An alternative that would have responded to all issues was considered but eliminated. Please see Chapter 2, Alternatives Considered but Eliminated from Detailed Study, Alternative A, and response to SCS-9.

SCS-25 – Please see responses to BC-4, and SCS-9, 11, 17 and 24. The Forest Plan also has standards and guidelines that provide base levels of protection for various resources in the action alternatives

SCS-26 - Climate change, like timber market demand, is best analyzed at a broader scale than on a project-by-project basis. The current timber demand is calculated for the Tongass National Forest and not on the project basis. The analysis takes into account timber harvest on non-National Forest lands and that timber which is shipped to other markets, both lower 48 and overseas. See Tongass National Forest Timber Sale Procedures, (Alexander) 2008. Likewise, analysis of climate change needs to be analyzed on a scale that is meaningful.

Because of this, climate change has been identified as part of the National Strategic Plan for FY 2007-2012. As Chief Kimball said in September 2007 speech - “ In this connection, I propose a national effort to reach two forest-related goals. This would not be just a Forest Service effort, but a concerted national effort based on public/private partnerships:

- The first goal would be to sustain and strengthen the role of America’s forests as a net carbon sink. All forests, public and private, currently take up enough carbon from the atmosphere to offset about 10 percent of America’s carbon emissions. I propose a national effort to double that amount by 2020.

The second goal would be to increase the amount of America’s energy that comes from forests. Our scientists tell us that with the technologies now becoming available, we could replace as much as 15 percent of our current gasoline consumption with ethanol from wood —and not just any wood, but wood that is not now being used for other purposes and in some cases being burned. I propose that we set that as a national goal as well.”

The Forest Plan Amendment analysis discusses the likelihood of the effects across the Tongass and in adjacent ownerships. This amendment to the Tongass Forest Plan responds to the Renewable Resources Assessment and Program (RPA) by updating the framework for management actions, refining the goals, objectives, standards and guidelines to adapt to trends and changes, and monitoring to measure accountability. Even at this scale, the uncertainty of what may happen does not provide qualitative measures that can be used to compare alternatives.

At the project level, perhaps the only indicator of the effects to climate change can be equated to the amount of timber harvested and the amount of road construction. However, the magnitude of this project is so small compared to all the factors that contribute to climate change that the effects would be negligible if measurable at all.

Two aspects of climate change are air quality and carbon sequestration. Air quality in Southeastern Alaska is currently rarely affected by natural or arson-related fires or the use of prescribed burns to eliminate logging slash or control insects. The possibility of fires is expected to increase but at a scale that would not have noticeable effects within the foreseeable future. Emissions from vehicles would be limited to local traffic, traffic associated with logging and fishing operations and cruise ships. Cruise ship monitoring has occurred in Juneau, which receives 1,000 cruise ships per season and air quality thresholds are within federal and state standards. The negligible direct effects from the Iyouktug project are expected to be temporary and can be compared by the amount of proposed timber harvest and road building. This information is found in the Findings and Disclosure Section of the Iyouktug FEIS under Clean Air Act.

Carbon sequestration, the removal of carbon dioxide from the atmosphere, is harder to evaluate. The productive mature forests in Alaska are considered to be carbon ‘sinks’ meaning that it stores more carbon than is released by natural processes. The regeneration that follows timber harvest has rapid growth which also locks carbon into the system. Whether the net carbon losses or gains occur with the harvest of old-growth forests is currently unknown.

SCS-27 – As your comment indicates and NFMA (Sec. 219.4) confirms, the RPA program is managed at the national level. NFMA further discusses how the objectives of the RPA program are incorporated into the Forest planning process. The cumulative effects for climate change

were discussed in the Forest Plan Amendment FEIS and included those effects from both Forest Service and non-Forest Service activities to indicate that the current information is incomplete and provided the following summary - “In summary, general agreement exists that the climate is warming and indications are that summer precipitation may decline. However, there is considerable uncertainty surrounding specific predictions and even more uncertainty regarding the effect of these changes on the extent of fire, tree mortality, blowdown, air quality, fish and wildlife, subsistence, and recreation (USDA Forest Service, 2008b).

The Iyouktug project incorporates the information in the Forest Plan Amendment FEIS (USDA Forest Service, 2008b) on climate change by reference and no further project-specific information is available at this time except as indicated through observations addressed in other resource sections. Acknowledgement of incomplete information is in the Introduction to Chapter 3 of the Iyouktug FEIS, under Available Information. Please also see response to SCS-26.

SCS-28 – Analysis was done to identify the highest quality deer winter habitat. These comparative habitat values will not change significantly within the reasonably foreseeable future and would not affect the ranking of the alternatives whether the interagency deer model was modified to class all areas as high snow levels as suggested by the State in their comments on the Forest Plan Amendment DEIS. Therefore, an SEIS would not provide the decision maker with more information and is not required.

Some studies (Juday et. al, 1997) indicate that there has been a decrease in snow levels at lower elevations which has resulted in less deer mortality in recent years. Also, the Forest Plan Beach and Estuary Standards and Guidelines do not allow this low elevation forest to be harvested. In addition much of the lower elevation lands in northeast Chichagof are within old-growth reserves.

SCS-29 – Please see responses to SCS-26 and SCS-27.

SCS-30 – The DEIS and FEIS, Chapter 3, Habitat Connectivity and Old Growth, Environmental Consequences on Connectivity section discloses the effects of the action alternatives would reduce habitat connectivity. Please see responses to BC-5, BC-8, BC-9, BC-19, SCS-12 and SCS-13 for more information on connectivity.

SCS-31 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Habitat Connectivity and Old Growth, Affected Environment for Connectivity, Coarse Canopy section and the Management Indicator Species and Other Wildlife, Environmental Consequences to Deer section (prime habitat) section address the effects of past logging activities and of harvesting coarse canopy (big tree forests) to deer. Please see responses to BC-5, BC-8, BC-9, BC-19, SCS-12 and SCS-13 for more information on connectivity.

SCS-32 - Please see response to SCS-13 and SCS-16 for information on the effects of the 2006/2007 winter on deer. Your comment states that “Hoonah residents report” that there are “no deer to harvest”. Although it is apparent that deer are harder to hunt for this year, deer have been observed and have been harvested on Northeast Chichagof Island and in the Iyouktug area during the 2007 hunting season. Of the 40 people that attended the Hoonah ADFG public meeting on October 10, 2007, ten people raised their hands to say that they had been hunting and six of these were successful (personal communication, Phil Mooney, ADFG). Recent information from the “Staff Analysis Special Action Request WSA07-05” that was an enclosure

to the USDI letter to Mr. Denby S. Lloyd, Commissioner, states that Hoonah residents expressed concern about the deer population because there was a lack of deer along the road system. Since the August 1, 2007 opening of the deer season, hunters found that deer were not present in large numbers at low elevations, that fawns were rarely seen, and that fawns seen in early August were relatively small in comparison to previous years. However, this report also states that “deer taken” in August by hunters, in sub-alpine elevations, were of both sexes and generally in good condition; therefore supporting that deer are present and have been harvested.

In reference to the project area as the “only sanctuary nearby” for deer; old growth reserves and other habitat maintained as a result of the Forest Plan conservation strategy will provide habitat for deer and other wildlife species. There are two small and a large old growth reserve in the project area and the project area is bordered by the large old growth reserve to the south. There is also a medium old growth reserves that surround the head of Port Frederick east of the town of Hoonah.

The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Environmental Consequences to Deer section supports your statement that the action alternatives would further affect the deer populations in the Iyouktug area.

SCS-33 – Please see response to BC-7, BC-9 and BC-19 for information on the reduction in connectivity in the North Fork of Iyouktug Creek.

Alternative 3 was developed to minimize impacts to deer habitat and connectivity. The alternative was not developed to address or eliminate all wildlife concern. Please see response to SCS-24 for additional information. Although roadless areas may provide habitat for deer, it is the LUD, not the roadless classification that designates the level of management or protection. The analysis and the project adhere to Forest Plan Standards and Guidelines.

SCS-34 – Although we considered your recommendation to identify the location of travel corridors, the Forest Plan Standards and Guidelines do not require any specific number, width or distribution for corridors. Connectivity was addressed at the landscape and elevational levels and is maintained as required in the Forest Plan (USDA Forest Service 1997a).

SCS-35 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Environmental Consequences to Deer section supports your statement that the action alternatives would further affect the deer populations in the Iyouktug area. The FEIS (and the Wildlife and Subsistence Resource Report) was updated to include recent information about the effects of the 2006-2007 winter to deer (please see response to SCS-13 and SCS-16). This analysis does rely on the assumption that the Forest Plan conservation strategy will maintain viable populations. The conservation strategy and population viability was addressed in the Forest Plan and Forest Plan Amendment and found to be adequate to maintain viable populations of wildlife (please see response to SCS-5 and SCS-16). The analysis and project were completed in compliance with the Forest Plan.

This comment, and many of the following comments, pertains to the interagency deer model. Most of the model questions and concerns will be addressed in this response to comment. Your comments conclude that there has been an “erroneous application of the deer habitat capability model” (SCS-35), that the model is not an appropriate tool for use to assess deer available to hunters (SCS-86), that the model should consider high snow years not average snow (SCS-90

and 91), that 25 percent partial harvest should have been included in the model (SCS-85) and because it was included the model does not overestimate the effects, that TimTyp or size density and not volume strata should have been used in the application of the model (SCS-97, 98, 99, 105), that the deer multiplier was applied incorrectly (SCS-100), that the shortcomings of the model should have been disclosed and considered (SCS-101), that cumulative effects were underestimated because the model assumed past harvest to be volume class 5 (SCS-102), and that the quartile analysis that is derived from the model is flawed (SCS-103 and 104).

The Wildlife and Subsistence Resource Report, Management Indicator Species (MIS) and Other Wildlife, Sitka Black-tailed Deer section discloses the parameters and assumptions used for the deer model. The model was designed as a tool to assess habitat capability across a large scale and to provide a measure to estimate and compare the relative effects of alternatives on deer winter habitat. The model was not designed to reflect actual deer numbers or to identify the precise value or location of habitat. Therefore the percent change in habitat capability was used in the deer analysis (DEIS and FEIS, Chapter 3 and the Wildlife and Subsistence Resource Report, Management Indicator Species (MIS) and Subsistence sections, Black-tailed Deer portion).

We recognize your concern that the interagency deer model is an appropriate tool for use in this analysis and that the short comings should be defined. The deer model was developed and is maintained and updated at a Forest level; therefore the shortcomings of the model were considered and disclosed during the Forest Planning process. During the 2005 Forest Plan 5-year review, concerns with the deer model were identified (Concern Item 04-7 and 04-23). The model was reviewed and adjusted to incorporate the new vegetation mapping model (size density model) during the recent Forest Plan Amendment process. However, this update is not yet approved for use at the project level.

Because the model works better for larger sized landscapes, a new food-based model, which shows more promise for use at a local scale, is being developed by Pacific Northwest Research Station, University of Alaska, and other scientists. This model, which is referred to as the Forage Resource Evaluation System for Habitat – Deer (FRESHDEER) is still in the development stage therefore is not yet approved for use. Until that time, the current deer model is used as one method to estimate effects.

Consistent application and use of the deer model across the forest is important to be able to compare projects forest-wide and to the Forest Plan. The currently approved deer model was run using the guidelines as currently directed. The parameters of the model, including using average winter estimates, volume strata, and the deer multipliers were applied as directed. In the 2005 letter of direction, the Forest Supervisor directed to follow the procedures of the 2000 Monitoring Report that included using 100 deer for an HSI of 1.0. This letter also directed that we follow the procedures in the MOU between the State of Alaska and the USDA Forest Service on Coastal Zone Management Act/Alaska Coastal Management Program agreement with the State of Alaska. The quartile analysis was applied consistent with this direction. As for your request that the model consider severe snow years, the model currently predicts snow depth to be moderate to high (no low) throughout the project area.

The DEIS incorrectly stated that the assumptions made for the model include that stands harvested in the past were volume class 5. The model assumes that past harvest were at a minimum volume class 5 (no volume class 4); this also considers soils and slope. This was

corrected in the resource report. Assumptions made for the model also include that low-impact harvest prescriptions such as individual tree selection where only 25 percent of the basal area is removed by helicopter were not classified as harvested for this model analysis because this harvest method was assumed to maintain POG forest, a diversity of plant communities in the understory, and cover in the overstory (Deal 2007; Deal and Tappeiner 2002; Deal 2001). This level of harvest is not expected to change the volume strata estimate of the stand (please see response to SCS-83 for additional information on why this harvest method was excluded). Individual trees or clumps of trees no more than 2 acres in size would be harvested. Although snow interception capability in and around gaps would be reduced, gaps in the canopy can also result in an increase in understory forage diversity and availability (Deal 2007) which would improve summer habitat for deer. In addition, 73% of the 25% single tree selection in Alternative 2 is proposed to occur above 800 feet in elevation in habitat that is not considered as high value or prime deer winter habitat.

Since the model assumes that every harvest is a clearcut, including up to 25% single tree selection would overestimate the model results because this harvest method would not change the volume strata associated with the POG forest. The model continues to over estimate effects because the model classifies harvest of up to 40% as clear cut harvest. Yet that harvest method would retain 60% of the POG forest and therefore some habitat for deer.

It is important to consider that the model was not the only means used to assess effects of alternatives on deer habitat. All of the following data were used to assess the effects to deer and deer habitat: habitat capability (derived from the deer model), high value deer habitat (derived from the deer model), prime habitat (derived from GIS data), quick cruise plots (field data) and observed use (field data). Field observations from wildlife biologists and other professionals were utilized to document deer use and movement patterns and to identify specific concerns. In addition, research papers were consulted and incorporated, consultation and personal communications were held with ADFG and FWS personnel, ADFG data was studied and incorporated, and public comments and local knowledge were considered when assessing the effects of alternatives on deer habitat.

SCS-36 – The Inventoried Roadless Areas (IRAs) would still provide benefits to wildlife and other resources in all Alternatives. These areas would still qualify for wilderness based on the size remaining. The DEIS and FEIS, Table 2-2 comparison of alternatives by significant issue notes that in most cases, the effects will be negligible to minor. There will be a moderate effect to roadless values in a few instances.

SCS-37 – Impacts to roadless areas were considered to be a significant issue, and Alternative 4 was designed to avoid inventoried roadless areas (DEIS and FEIS, Chapter 1, Significant Issues and Chapter 2, Alternatives Considered in detail). We did design and analyze a roadless alternative so that the Decision Maker could understand the trade-offs between roadless and non-roadless alternatives. Timber harvest is proposed within Forest Plan Land Use Designations that allow for timber harvest and follows our Forest Plan. The goals and objectives and outputs from the Forest Plan were based on using the entire suitable land base within the development LUDs rather than concentrating the effects on the roaded areas.

Under NEPA, an agency's consideration of alternatives is sufficient if it considers an appropriate range of alternatives, even if it does not consider every available alternative. An agency need not, therefore, discuss alternatives similar to alternatives actually considered, or alternatives which

are infeasible, ineffective, or inconsistent with the basic policy objectives for the management of the area. By providing a range of alternatives even if some are not studied in detail, we provide the decision maker with enough information to make an informed decision. The decision maker can consider modifications to alternatives in the Record of Decision (ROD).

SCS-38 – The Roadless characteristics, or special Roadless values, are analyzed in Chapter 3, Roadless Areas of the DEIS and FEIS. Please refer the discussion of the values of the roadless areas in Chapter 3 of the FEIS and in the Forest Plan SEIS, Appendix C. The effects to the roadless areas are by extensions from the existing road system and much of the roadless areas remain intact. The analysis shows these areas retain most of their special values. See also response to SCS-36 and 37.

SCS-39 - The timber sale that was associated with this study was partially exported and partially manufactured locally. At that time, market conditions were such that helicopter logging was economically feasible and several other sales that relied entirely on helicopter-logging were sold, harvested and manufactured locally. Usually the Alaska yellow-cedar was exported as part of the current Alaska Regional policy.

Since the study, several sales have been sold that included both ground-based and helicopter logging systems. Some of this wood has been processed locally within Southeast Alaska and some has been exported, primarily Alaska yellow-cedar. Most of the helicopter-logging has been contracted to a company that specializes in this type of operation and would not have the same employee turn-over experienced during this study.

Helicopter-logging is still the most expensive system and is used when other resource values can be realized such as scenery or retaining structure for wildlife or where road construction would be more expensive than the use of helicopters. Helicopter logging has fewer effects on roadless areas than building roads especially when combined with the silviculture prescription that will retain 60-75% of the stand.

SCS-40 – The entire Tongass was evaluated and reviewed for possible Wilderness recommendation in the 2003 Tongass Forest Plan SEIS. All Tongass National Forest lands were assessed to determine if they were suitable for wilderness consideration based on the Wilderness Act and procedures in the Forest Service’s forest planning directives. Appendix C (SEIS Volumes II and III) includes documentation of the analysis and evaluation for each inventoried roadless area, and describes the relative contribution each roadless area would make to the National Wilderness Preservation System. The SEIS documents the results of a very intensive additional roadless area evaluation for the Tongass conducted in 2002 and 2003. This included updated mapping and evaluation of all unroaded lands, which led to the 109 inventoried roadless areas analyzed in the Final SEIS. All inventoried roadless areas were evaluated and none were recommended for Wilderness.

In NFMA, Congress directed that forest management continue under existing plans while the first NFMA forest plans were being developed [16 U.S.C. 1604(c)]. Likewise under NEPA, the Council on Environmental Quality has recognized that the “no action” alternative for forest plans is the current management direction, not a halt of all activities [CEQ’s “40 Questions” #3].

We considered and analyzed the effects to the IRA special values in Chapter 3 (Roadless Resources). The Forest Plan conservation strategy, in addition to the implementation of Forest Plan standards and guidelines, was developed to provide quality habitat for wildlife. Based on

Table 1-1 in the DEIS and FEIS, 75 percent of the area is designated for timber production, and 24 percent of the project area is already roaded (based on Table 2-2). Please also see response to SCS-36.

SCS-41 – In terms of roadless, please see responses to SCS-6, SCS-36 and SCS-40. Wildlife is addressed in the DEIS and FEIS, Chapter 3, Habitat Connectivity and Old Growth, Management Indicator Species (MIS) and Other Wildlife Species, Subsistence, Threatened, Endangered, Petitioned, and Sensitive Wildlife Species sections.

SCS-42 – Although only specifically mentioned in relation to goshawks (DEIS and FEIS, Chapter 3, Threatened, Endangered, Petitioned, and Sensitive Wildlife Species, Goshawk section), helicopters activities were considered as part of the “harvest activities” for all of the wildlife analysis (please see response to SCS-13). The analysis assumed that harvest activities would displace most wildlife species addressed, especially directly within or adjacent to the units being harvested. Because helicopters, outside of the harvest unit or decking areas, are usually moving through an area and not stationary, disturbances would generally be short term.

The project would adhere to Forest Plan Standard and Guidelines that require no continuous disturbance within 600 feet of an active goshawk nest from March 15 to August 15 (USDA Forest Service 1997a). Although there are no shorebird rookeries currently identified to occur in or around the project area, if they are identified, helicopters will be required to maintain a constant flight direction and airspeed and a minimum flight elevation of 1,500 feet (458 meters) (USDA Forest Service 1997a).

Although there are no bald eagle nests currently identified within the areas of proposed activities, if active nest are identified in areas of proposed activities, repeated helicopter activities within ¼ mile of active bald eagle nests will be avoided (USDI and USDA Bald Eagle MOU). We added information on these Standards and Guidelines to the Unit Card introduction to respond to your comment.

SCS-43 – Effects of partial harvesting are discussed and analyzed in Chapter 3 of the FEIS, Silviculture and Vegetation, Species Composition and Long-term Productivity. The use of helicopters allows us to harvest through single tree selection. Please see responses to BC-22 and BC-23.

Please see response to SCS-31 for information on harvesting large trees. Please see response to SCS-33 and SCS-41 for information on the roadless areas and wildlife. Please see responses to SCS-5, SCS-16, and SCS-35 for information on maintaining species viability.

SCS-44 – Please see responses to SCS-17, 36 and 40.

SCS-45 – The entire project area was surveyed during 2005 and 2006; this information is on file in the project record. It is possible but unlikely that significant areas of karst were overlooked given the field reconnaissance by geology, soils, and hydrology resource specialists who were responsible for identifying and mapping these resources, at least within any area considered for harvest or adjacent to these areas.

Designation of Special Interest Areas for Geology is beyond the scope of this project and was part of the Forest Plan Amendment decision. These Special Interest Area LUDs were not designed to include all karst.

SCS-46 – On October 19, 2007, the Tongass National Forest implemented a supplement to the Forest Service Manual concerning invasive plant species (Supplement No.: R10 TNF – 2000-2007-1). This document clarifies the responsibilities of the Forest Service in managing for invasive plant species on the Tongass National Forest. The release of this document occurred after the DEIS for the Iyouktug Timber Sale was published. In response to this direction, an invasive plant risk assessment for the Iyouktug project was completed and included in the project record with the Botany resource report. This risk assessment clarifies the management concerns, objectives and mitigation measures proposed to address invasive plant species for the Iyouktug project.

Prior to 2007 there were no Forest Service procedures in place to control or eradicate invasive plant species on Chichagof Island. A Decision Memo to control invasive plants by manual or mechanical means was signed in 2007 (USDA Forest Service 2007d). As of 2007, the Forest Service, and contractors, have completed weed surveys on most of the major road systems on Chichagof Island, including the main roads of the Hoonah road system. A weed control plan is being developed to address high priority weed populations for the Hoonah Ranger District.

Limited control measures have already begun in the city of Hoonah to address some of the high priority weed concerns known in the area. From a practical and strategic perspective, the most effective weed control efforts should occur in Hoonah because this is where most of the still controllable, high priority weeds are currently found. Partnerships with the City of Hoonah and other public and private entities are being formed to address the weed concerns in or near Hoonah. The primary objectives for the Iyouktug area will be to prevent the introduction of new invasive plant species and to limit the spread of existing weed species beyond the road corridor, where possible. Many of the weeds found in the Iyouktug area were introduced by roadside seeding about 30 years ago. These plants are now well established along the road corridor and successful eradication is likely not possible. Control measures will therefore focus on controlling the spread of existing populations rather than eradication.

Invasive weed species currently in the Iyouktug project area do not appear to pose a threat to rare plant populations known from the area. Habitat for the known rare plant species is typically unfavorable to weed species because of shade, high organic component to the soil or poorly drained soils and lack of disturbance. Most weed species are not expected to spread much beyond the road prism. Reed canary grass, *Phalaris arundinacea*, is one of the most invasive and widespread weed species in the project area and is known to invade open forest, young second growth and some wetlands. So far it has not been associated with rare plant populations found even a short distance away from roads.

No herbicide use is currently proposed for the project area. However, the Forest Service plans to evaluate future control measures using an Integrated Pest Management approach, including use of herbicides, through future NEPA analysis.

SCS-47 – Climate change may influence the range and distribution of both rare plant species and invasive species.

SCS-48 – The impact of the Timber Sale on the IRAs was addressed in the DEIS and FEIS in Chapter 3, Roadless Area Resources. The impacts on Whitestone IRA would be minor because there is no proposed harvest or road building in the Whitestone IRA area regardless of the type or amount of recreation use. The current outdoor recreation industry is road-based (DEIS and FEIS in Chapter 3, Recreation).

SCS-49 – Please see responses to SCS-7, SCS-36, SCS-40, and SCS-41.

SCS-50 - Alternative 5 is a ground-based alternative that does not include helicopter harvest. The other action alternatives include helicopter harvest as only a portion of the total volume. The inclusion of helicopter volume allows for flexibility in responding to yearly fluctuations in the timber market and as well as demand. Please see The FEIS-chapter 3 timber economics Section and responses to BC-3, SCS-19 and SCS-54.

SCS-51 - The average helicopter logging cost of \$338 per MBF includes the decrease in helicopter logging costs based on the regional cost collection procedures. Based on Christian and Brackley, as retention increases, helicopter logging costs also increase. In other words ST25 units are generally less economic than ST40 units. Brackley also concludes that other factors such as crew training, experience, equipment had a greater impact on helicopter logging productivity than the silviculture prescriptions themselves.

SCS-52 – Please see responses to BC-4 and SCS-18.

SCS-53 – NEAT_R was applied to be consistent across the Forest. NEAT_R includes maintenance costs imbedded in the logging costs, but does not include storage/decommissioning costs or opportunity costs (FEIS, Chapter 3, Timber Economics, Timber Financial Efficiency). NEAT_R is used for comparing the relative differences among alternatives and is not meant to reflect absolute values.

Logging costs include cost for road maintenance; work is performed by the Purchaser. The Purchaser is also responsible for post harvest road storage and decommissioning. These costs would be included in the Purchaser's sale bid included in total logging costs. We recognize that the cost to decommission or place a road in storage, when the Purchaser is on site, is far less than long term costs of road maintenance or decommissioning. Mobilization costs of equipment to and from site after the Purchaser has left are considerable considering current and future costs of fuel. Also work would have to be accomplished under a Public Works Contract with higher labor, equipment and administrations costs. For this reason, we state in the action alternatives that the roads we close will be closed and placed into storage "after timber sale harvest" (we expect that roads will be closed by the Purchaser right after harvest, rather than waiting until after silvicultural activities, such as stocking surveys, have occurred).

SCS-54 – Brooks and Haynes (1997, p. 3) warned against equating timber demand with actual harvest:

“As with our previous projections, the volume of projected National Forest harvest is neither the volume likely to be harvested nor, necessarily, the volume that ought to be offered for sale. It is the volume of National Forest timber harvest that is consistent with projected consumption of Alaska products...we do not intend to imply that ‘gaps’ will be created by levels of National Forest harvest that differ from our projections.”

In deciding how much timber to offer for sale in any given year, the agency uses the Morse methodology (Morse 2000). That methodology has the advantage of being self-correcting in that when actual harvest falls below demand projections, offerings for future years are reduced. The methodology also adjusts for changes in mill capacity due to openings and permanent closures of facilities.

The effect of underestimating timber demand is much more serious than overestimating demand. When the agency underestimates timber demand, mills can close for lack of adequate timber supply. Conversely, if the agency prepares more timber than is demanded, the excess timber will not be sold and no environmental impacts will occur. Timber demand on the Tongass has always been volatile, and can differ significantly from actual harvest in any given year or series of years.

To evaluate the status of the timber flow, Morse (2000) established that it is important to assess the ratio of contract volume to harvest. This ratio can indicate how many years of supply (volume under contract) mills have compared to what they are sawing (i.e., harvest). During the 1981-1995 time period, historical ratios of volume under contract to harvest for the independent sale program (in other words, not including volume in the long-term contracts associated with the pulp mills in Ketchikan and Sitka) ranged from 1.0 to 3.4 with an average of 1.8 (Morse 2000). As shown in Table B-1, the ratio of contract volume to harvest peaked in 2002, at 6.8, but dropped closer to the three-year supply objective in 2003. In 2004 and 2005 the ratio dropped to 1.7, but rose again in 2006 to 2.6, closer to the three year goal for volume under contract.

Table B-1: Historical Available Timber Volumes and Harvest (Fiscal Years, MMBF).

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Volume Under Contract	226	465	498	395	313	332	322	230	193	78	83	111
Harvest	221	120	107	120	146	147	48	34	51	46	50	43
Contract Volume / Harvest ratio	1.0	3.9	4.7	3.3	2.1	2.3	6.7	6.8	3.8	1.7	1.7	2.6

Source: USDA Forest Service, Alaska Region. Data on file with: Regional Economist, Ecosystems Planning, USDA Forest Service, PO Box 21628, Juneau, AK 99802-1628.

The ratio of volume under contract to harvest is only one indication of whether there is sufficient timber volume under contract to ensure industry viability. There can be increasing contract volume to harvest ratios while there are declining contract volumes. Some volume under contract in 2002 and 2003 was in sales cancelled in 2004 and 2005. In 2002 on the Tongass National Forest, an injunction was placed on permitting timber harvest and road building in inventoried roadless areas, which included the signing of decision documents for timber sales in inventoried roadless areas (Sierra Club v. Rey, J00-0009CV (JKS)). Although the injunction ended in spring 2003, the effects lasted throughout the rest of the year. Volume under contract in 2003 dropped to 193 MMBF from 230 MMBF of available volume in 2002 (see Table B-1). In 2002, an additional 65 MMBF was under injunction and so unavailable for harvest. Volume under contract continued to decline in 2004 to 78 MMBF and rose to 83 MMBF in 2005 and 111 MMBF in 2006. The decline in volume under contract in 2004 and 2005 from levels in previous years was largely due to cancelled timber sales.

In 2004, Section 339 of the Department of the Interior and Related Agencies Appropriations Act for fiscal year 2004, Public Law No. 108-108, provided that the Secretary of Agriculture may cancel, with the consent of the timber purchaser, a number of timber sale contracts on the Tongass National Forest awarded between October 1 1995 and January 1 2002. A given sale could be cancelled provided that the Secretary determined, at the Secretary's sole discretion, that the sale would result in a financial loss to the purchaser, and the costs to the government of

seeking a legal remedy against the purchaser would likely exceed the cost of terminating the contract. By the end of FY 2005, a total of seventeen sales (with approximately 122 MMBF) on the Tongass National Forest were cancelled. It is the intent of the Tongass National Forest to reconfigure cancelled timber sales and re-offer that portion of the volume that is economically viable.

The last of the long-term lease timber sale volume was harvested in 2000. The industry in Southeast Alaska has changed considerably in response to the shift in industry structure, and has seemed to stabilize somewhat in the past five years. For the past five years, Tongass National Forest-related employment in logging and sawmilling (there is essentially no employment in pulp and paper any longer in Southeast Alaska) has ranged from 199 in 2003 to 158 in 2006. Total industry employment in southeast Alaska, including some self-employed sawmill owners, has ranged in the past five years from a high of 561 in 2003 to a low of 421 in 2006. A current dip in employment is to be expected as wood products markets throughout North American are low, due to the mortgage loan industry problems.

Brackley and Haynes (in press) state that current production levels and shipments in southeast Alaska demonstrate how the industry has transitioned to operate in current market opportunities. They state that the availability of high quality wood, as evidenced by stress grading and high visual qualities, give Alaska wood manufacturers an advantage over producers in other western North American regions. Southeast Alaska wood manufacturers' shifts to higher proportions of shop lumber, larger sizes of dimension lumber, heavy timbers and cants enable Alaska producers to supply products of relatively higher value to both domestic and export markets. This production of high quality wood, in conjunction with burgeoning populations, projections of lessening production in some competing regions, and demand in end markets, means demand for southeast Alaskan wood will increase in the long run.

SCS-55 – The Brooks and Haynes (1997) model was not rejected by the 9th Circuit Court in *Natural Resources Defense Council v. United States Forest Service* (421 F.3d 797) in August 2005. The Ninth Circuit held that the revised Tongass Land and Resource Management Plan (Forest Plan) was defective because the Forest Plan Record of Decision (ROD) and FEIS *misinterpreted* the Brooks and Haynes projections.

The Threemile Timber Sale depended on the Brooks and Haynes (1997) long-term calculation of derived demand as input to the annual sale model offer calculation (Morse 2000). The U.S. District Court for the District of Alaska in *Organized Village Of Kake, Southeast Alaska Conservation Council, Natural Resources Defense Council, Sierra Club, The Wilderness Society, and Center For Biological Diversity v. United States Forest Service*, Case No. J04-029, said the 1997 derived demand projections needed to be updated, and the updated derived demand projections used in the Morse (2000) calculations of annual timber sale offer levels. The Brooks and Haynes (1997) demand projections were updated by US Forest Service Pacific Northwest Research Station scientists in Brackley et al. (2006), and those updated projections were used to calculate annual offer levels as input to planning in the Iyouktug EIS.

SCS-56 - Brackley and Haynes (in press; footnote 2) detail how the demand studies from the USFS PNW Research Station have defined Pacific Rim. They state that the “demand studies traditionally considered the Pacific Rim as the major producing areas of the three contiguous Pacific coast states, British Columbia, Alaska, Russian Far East, and the major consuming regions of Japan, Korea, Taiwan, and China (Haynes and Brooks 1990)”. Brackley et al. (2006)

recognized that the US is a net importer of timber. A mill in Alaska has the option to ship products to traditional export markets (Japan), emerging new markets, or the lower 48 states. Demand for wood products is global in nature and increasing amounts of wood products are being imported into the United States. Alaska products constitute a small proportion of the total US market; very small shifts in how much of the US market Alaska supplies can mean a big change in Alaska.

Brackley and Haynes (in press) state that several short and long-term changes point to an increase in demand for wood products from all sources, including Alaska. Lumber production in sawmills in western Canada has slowed, in addition to longer-term factors, such as interest in renewable energy applications and a projected steady increase in US population and concurrent increasing demand for softwood products. They state that the probability of a future decrease in demand for lumber from all Pacific Rim markets is virtually zero. In fact, they argue that projected consumption in domestic markets alone will increase substantially. Therefore, there was no compelling reason for the Brackley et al. (2006) study to include a scenario showing demand falling, which would be contrary to the best scientific information available.

Estimated demand for Alaska sawn products declined considerably between Brooks and Haynes (1997) and Brackley et al. (2006). The lowest projection of derived demand for sawn products from Alaska in Brooks and Haynes (1997) for the period 2003 to 2007 was 130 million board feet (MMBF). The lowest projection in Brackley et al. (2006) for the same period was 30 MMBF. These differences were due to changing assumptions from one projection to another, and shifts in the structure of the industry as it adjusted after the end of the long-term contracts.

Brackley and Haynes (in press) state that “the existing model is a robust system that remains a valid approach to model demand for Tongass timber because of the limited data on lumber shipments and values and production costs.” They go on to explain that Alaska producers are sawing lumber products that are, on average, better quality and enter higher priced markets, than lumber manufacturers are producing in the western pacific states and in Canada. These high quality products have similar prices in domestic and foreign markets. Using historic data with scenario assumptions to model movement of these products in both domestic and foreign markets is a valid approach.

Brackley and Haynes (in press) state that “the RPA timber Assessments (Haynes et al. 2007) provided the background for the many assumptions needed in the demand model. The size of the U.S. market ... suggests that Alaska softwood lumber producers have access to a large domestic market assuming they can compete with other producers. That is, the relatively small amount of southeast Alaska production should be able to find markets in domestic or export markets for clear (shop and factory grades) and other high quality lumber (large sizes of dimension lumber 2 by 10, 2 by 12, and heavy timbers). These markets have the higher prices needed to cover the higher Alaskan costs. Since these high value markets are not modeled directly in the RPA timber assessment, the Pacific Rim market data are a reasonable proxy for describing the demand for high value products produced in southeast Alaska. In the demand model, the demand facing Alaskan producers is than made up of two parts: one part that is assumed to go to Japan and another part that goes to U.S. domestic markets.”

Brackley and Haynes (in press) state that “current production levels and shipment patterns in Southeast Alaska demonstrate how the industry has transitioned to operate in current market opportunities”. They go on by saying that shifts to “higher proportions of shop lumber, larger

sizes of dimension lumber, heavy timbers, and cants should give Alaska producers an opportunity to supply products of relatively higher value to both domestic and export markets.”

Brackley and Haynes (in press; footnote 16) state that “there is not [an] official source of information for shipment of lumber from Alaska to domestic markets. Exports to foreign markets are based on export declaration forms submitted to the U.S. Department of Commerce as reported by Warren (for two most recent publications see Warren 2006 and Warren 2007). Total production from the mills is estimated from several sources. Given estimates of total production and exports, domestic production is determined by the subtracting exports from total production.” They also state that “other than some observations of past flows, there is no consistent historically reported annual data series for shipments from southeast Alaska to the lower 48 states.”

SCS-57 - Brackley et al. (2006) selected four scenarios they deemed reasonable and possible, given their assumptions. The Limited Lumber Production and the Expanded Lumber Production scenarios assume the wood processing industry in Southeast Alaska is focused only on processing of sawlogs. The primary difference between these two scenarios is the assumption that Alaska will increase its market share in the North American export market from 0.39 percent to 1.14 percent in the Expanded Lumber scenario, while the Limited Lumber scenario maintains the same market share for Alaska products in the North American market as a whole. The Medium Integrated Industry and High Integrated Industry scenarios both assume markets for low grade material will increase in the future, equivalent to chip and utility processing facilities being built in Southeast Alaska. These two scenarios assume an increase in Pacific Rim lumber imports, but not to the extent assumed in the first two scenarios. These two integrated industry scenarios also assume varying increases in the Alaska share of the North American export market. The Medium integrated scenario assumes markets for chip and/or utility material will increase in 2008, while the High integrated scenario assumes markets for chips and/or utility material will increase in both 2008 and again in 2012. Although Brackley et al. (2006) in their publication postulated that these markets would be the result of processing facilities built in Alaska, any market stimulation that results in higher demand for chip or utility material would have the same result. The recent policy change regarding appraisal of lower grade material for shipment to the lower 48 states could be regarded as the equivalent of building a processing facility for lower grade material, in terms of demand stimulation. In fact, Brackley and Haynes (in press) regard recent developments such as the limited shipment policy and the startup of a veneer mill in Ketchikan as increasing long-term demand, and pushing the most likely scenario toward something between their expanded lumber and medium integrated scenarios.

Brackley et al. (2006) chose to discuss how their scenarios might look “on the ground”, to give an idea to the reader as how demand might actually be stimulated under the assumptions in the model. The structure of the model itself, however, is simply driven by changes in relative market shares, given other assumptions discussed above. They based this discussion of how changes in demand might take place based on efforts to plan and build various facilities in southeast Alaska to utilize lower grade material that have been under discussion for some time. However, as mentioned, the demand stimulation could also take place as a result of other events, such as policy changes in timber sale appraisals or construction of new manufacturing facilities like the Ketchikan veneer mill.

SCS-58 – See response to SCS-54 regarding equating demand with harvest.

Brackley and Haynes (in press; pagination not set (may be 29)) state that

“Several comments focused on why we did not consider a scenario of decreased demand. We did not because we consider the low scenario as representing present conditions. That is, a set of conditions representing a future where the markets have adjusted for both the collapse of the Asian markets and the structural shifts in the U.S. market, resulting from reductions in federal timber flows. In addition, several events have occurred since the release of the original report that demonstrates the demand for forest products is increasing. One event has been the ability of southeast lumber producers to find markets for their chips at pulp mills in British Columbia as lumber production has slowed at sawmills in western Canada reducing the availability of chips. Another event is an increasing demand for low-grade fiber as a feedstock for energy applications and products such as wood pellets (Perlack et al. 2005). Third, the ongoing congressional efforts to consider legislation on climate change, high energy costs (oil is in the vicinity of \$90-\$95 a barrel as we write), a need to reduce carbon emissions, and conversion to sources of renewable energy all suggest increased demand for wood. Most of these have the potential to create new markets for residual products produced from sawmills and also change the competitive positions of the various producing regions in North America. Finally, U.S. demand for softwood products is expected to increase at just below 1 percent per year mirroring the expected growth in population (from the RPA Timber Assessment, Haynes et al. 2007).”

“Given the range of these events, we judge that the probability of a future decrease in demand for lumber to the Pacific Rim is almost zero; the probability of no change in demand small; and, the probability of an increase in demand extremely high. If demand to the export markets does decrease or remain constant, Alaska producers will ship products to the domestic market as consumption—especially in residential construction (including new, repair, and alteration)—is expected to increase.”

SCS-59 – The purpose and need for the Iyouktug project responds to the goals and objectives in the Forest Plan. Please also see response to EH-1.

SCS-60 – As described in the DEIS, page 3-43, purchasers may elect to process all the sawlogs locally or to ship up to 50% of the total sawlog volume to markets outside Alaska. Timber sales are sold to purchasers with different business goals and under changing market scenarios. Historically, the percentage of the volume harvested on the Tongass that has been shipped out of state has fluctuated widely. Given those variables, it is not possible to precisely predict what will be manufactured locally; hence, a range of employment and income figures is considered the most reasonable approach to display potential effects on jobs and income. See also response to comment JM-4 for more information on interstate shipments.

SCS-61 - The fact that such benefits and activities as commercial fishing, tourism, mining, recreation, and subsistence are not assigned monetary values and quantified in the economic efficiency analysis does not lessen their importance in the overall decision-making process. Decision makers routinely choose alternative that do not maximize present net value. The Forest Service Manual states that decision makers must “(c)onsider economic efficiency, *along with other factors* (emphasis added), in making decisions and in implementing and reviewing projects, programs, and budgets” (FSM 1970.3(3)).

A large portion of the EIS is spent evaluating potential effects that cannot be reasonably assigned a monetary value at this time. The type of benefits identified on this subject may be generally classified as ecosystem services. Ecosystem services are those services and benefits provided by healthy ecosystems. Definitions of ecosystem services can be broad and include both use and non-use values. A number of different definitions have been identified, including a typology developed by the Millennium Ecosystem Assessment (2005), which is featured on the Forest Service's Ecosystem Services website. The Assessment identifies four general categories of ecosystem services: provisioning, regulating, cultural, and supporting. Interest in ecosystem services has increased in recent years, and economists have made useful progress in developing and improving methods and techniques that can be used to value non-market ecosystem services.

Recognizing the potential utility of the ecosystem services concept, the Forest Service recently proposed that ecosystem services be used as a framework for describing and evaluating the many benefits associated with NFS lands and established an Ecosystem Services web site (<http://www.fs.fed.us/ecosystems-services/>) that provides detailed information and resources, identifies and discusses Forest Service efforts in this area, and issues a regular Ecosystem Services newsletter. In addition, the Forest Service's Pacific Northwest Research Station (PNW) recently issued a technical report that attempts to define an economics research program to describe and evaluate ecosystem services (Kline 2006). Kline (2006, pg. 7) identifies several key challenges or steps that are involved in applying the ecosystem services concept. These include defining a typology of ecosystem services or, in other words, defining what to measure and how to measure it. An important aspect of this measure involves, in Kline's (2006, pg. 10) words: "translating ecosystem complexity into manageable sets of well-defined ecosystem metrics." The next challenge is to determine how these metrics are affected by specific Forest policy and management actions and, then, identifying these effects in terms of measurable units or outputs that can be assigned monetary values in a way that will allow meaningful comparison between alternatives. The third challenge is to measure the value of these units or outputs in monetary terms that accurately reflect the societal values of these services.

As Kline (2006, pg. 15) notes, "total ecosystem values provide little guidance to policy or management decisions unless these decisions can be expressed as marginal or incremental changes in ecosystem services." Evaluating the impacts of the alternatives on, for example, subsistence in these terms would require that the potential impacts to subsistence be quantified in pounds of edible resources potentially foregone and in the case of deer, for example, would require estimating the actual number (or at least a reasonable range) of deer that would be affected, negatively or positively, by the alternatives. This type of analysis would also be required for salmon, marine mammals, moose, berries, and so on. The ecological impact assessments presented in this EIS follow standard scientific approaches to these types of analysis and typically assess impacts in terms of probability and risk, not in numbers of affected deer or salmon, etc. The difficulties associated with identifying production relationships and the corresponding units of measurements is, as noted earlier, generally considered one of the main challenges currently facing ecosystem services analyses. Kline (2006, 11) notes that, in general, "ecologists have not been forthcoming with the types of ecosystem output measures economists typically desire or expect for formal economic analysis" and because "ecology is not particularly well suited to prediction, production relationships may be highly or purely uncertain."

The draft report prepared by Phillips and Silverman (2007) and included in the Wilderness Society comments provides a rough approximation of total economic values of "wildlands" on

the Tongass and Chugach National Forests. These values are not sufficiently refined for use in policy and management analysis. They are a mix of different kinds of values (total worth, marginal value, market and nonmarket, etc.) from a variety of studies. Even if these total economic value estimates were more accurate, they would provide little guidance with respect to evaluating the alternatives in this EIS because the ecological impacts of the project alternatives are not expressed as marginal or incremental changes in a way that can be assigned monetary values. This reflects the current state of knowledge and available secondary data. The Forest Service, as noted above, has developed and is in the process of further refining a research agenda based on ecosystem services that will allow these types of non-market ecosystem services values to be incorporated into management decisions in the future. We are just not there yet.

With respect to the Tongass National Forest, scientists from the PNW Research Station in Juneau have recently initiated an ecosystem services research program that is aimed at using the Tongass as a case study of the impacts of forest management on the long-term provision of ecosystem services and goods. The initial phase of this program has involved working with the MIMES (Multiscale Integrated Models of Ecosystem Services) model developed by leading ecosystem services researchers at the University of Vermont. Initial work has focused on developing a simplified, dynamic model of forests and ecosystem services and goods. Future research plans involve adapting MIMES to model the impacts of management decisions on the flow of ecosystem services and goods.

SCS-62 – Tourism is addressed in the DEIS and FEIS in Chapter 3, Recreation, Affected Environment for Recreation Use and Tourism Trends. Please also see response to SCS-108.

SCS-63 –The Alaska Department of Commerce (the original reference comes from the Alaska Department of Fish and Game) Alaska Wild Food Harvest by Census Area was not used in this analysis because this data does not reference Hoonah individually but combines the communities of Skagway, Hoonah and Angoon. Regardless, the DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Subsistence section does address the importance of subsistence to the community of Hoonah and tiers to the Forest Plan that assessed subsistence specifically for the community of Hoonah.

SCS-64 - Please see response to SCS-61

SCS-65 – Please see responses to SCS-46 and 47 and the Invasive Plant Risk Assessment in the Project Record.

SCS-66 - These existing roads cross small areas of moderate vulnerability karst lands. There is little to no threat of introducing sediment to the karst hydrological system in moderate vulnerability karst lands (DEIS, Karst and Geology, Karst Vulnerability). No karst features were found along these road segments. Each road segment has been analyzed in relation to karst features by the Tongass Karst specialist.

SCS-67 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Environmental Consequences for American Marten, support your statement that the area is a high risk Biogeographic Province and that more roads would increase trapping efficiency for marten. The Cumulative Effects on Marten, Effects Common to All Action Alternatives section states that Forest Plan Standard and Guideline retention requirements will be implemented. These standard and guidelines require that a minimum of 10% of the stand structure will be maintained in high value marten habitat. Partial

harvest of up to 25% of the stand meets retention requirements because 75% of the stand structure will be maintained. Structure retained would include large trees that would meet marten standard and guidelines (see response to BC-22). In addition, the standards and guidelines only apply to vegetation management that creates openings greater than 2 acres in size. Partial harvest would remove individual or clumps of trees no more than 2 acres in size.

SCS-68 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment and Environmental Consequences for American Marten sections address the factors considered to address the effects of alternatives on marten and their habitat. Although the marten model does not consider trapping pressure, prey densities or fragmentation, the model was not the only means used to assess effects of alternatives on marten habitat. Field observations from wildlife biologists and other professionals were utilized, research papers were consulted and incorporated, consultation and personal communications were held with ADFG, ADFG data was incorporated, and public scoping comments and local knowledge were considered. High value marten habitat, trapping pressure and road densities were specifically address in this analysis. Indirect and cumulative effects considered the effects to prey species habitat. The resource report was updated to reflect information about the deer mortality that resulted from the 2006-2007 severe winter. Although there are no standards and guidelines addressing the fragmentation of habitat in Timber Management LUDs, connectivity was used as a critical habitat element to address fragmentation.

SCS-69 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment and Environmental Consequences for American Marten sections describe the factors considered in the application of the marten model. Although your suggestions for the marten model were considered, because the marten model is maintained and updated at a Forest level, the model was run using the guidelines as currently directed. This is important to maintain a consistent application and use across the forest. Therefore the model was run using volume strata (not timtype) and was not adjusted to include road density. Although there are no Forest Plan Standard and Guideline for road densities or coarse canopy habitat for marten, a separate evaluation of road densities (reference the Trapping and Road Density section) and coarse canopy habitat, using volume class from TimType data (refer to the DEIS and FEIS, Chapter 3, Habitat Connectivity and Old Growth, Affected Environment for Connectivity, Coarse Canopy section) was completed.

SCS-70 – Thank you for providing an example of a patch size/fragmentation analysis for marten. Although we considered your recommendation, this is a Timber Management LUD and there are no Forest Plan Standards and Guidelines addressing the fragmentation of habitat in any LUD. Connectivity was used as a critical habitat element to address fragmentation. Please see response to BC-5, BC-8, BC-9 and BC-10 for additional information on connectivity. Please see response to SCS-68 for information on other data considered in addition to the marten model.

SCS-71 – Although you recommend completing an area wide assessment of marten home ranges, a trapping refugia model has not been developed to address this issue. An assessment of marten home ranges was not completed at the project level because this was addressed in the development of the Forest Plan conservation strategy. Both access management on National Forest lands and hunter/trapper harvest regulations administered by ADFG can be used to manage marten habitat.

Old-growth reserve (OGR) LUDs (please see response to BC-15, BC-26 and SCS-35) were designed to support areas large enough to maintain marten home ranges. The Iyouktug project area includes, or is bordered by 2 small OGRs to the north and by a large OGR to the north, east and south. The action alternatives propose to implement the interagency OGR recommendations that will improve the size and location of the small OGRs. Because the majority of these reserves are unroaded, they would provide a “trapping refugia”. In addition, the DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment and Environmental Consequences for American Marten sections describe how a potential increase in trapping pressure would effect marten.

SCS-72 – The Wildlife and Subsistence Resource Report, American Marten, Affected Environment section, supports your statements that prey availability (including deer and salmon) is important to marten and reference Flynn’s work in numerous places. The Effects Analysis section states that the availability of prey, mostly as it relates to habitat, was considered as an indirect effect to marten. The effects to prey species were also addressed indirectly in the analysis of Endemic Species that focused on the Keen’s mouse. The deer mortality that occurred as a result of the 2006/2007 winter would have provided marten with an increased food source in 2007. However, if deer numbers continue to decline, then this food source may not be as available in future years. As for the availability of salmon to marten, a riparian management area buffer will be maintained around all fish bearing streams and a portion of Suntaheen Creek was included in the proposed OGR to maintain quality salmon habitat.

SCS-73 – As you stated, some total road density information is available in the DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment and Environmental Consequences for American Marten, Trapping and Roads Density sections. The analysis defines the rationale for assessing open road densities and this is consistent with other analysis completed across the forest. If you are interested in more information on total road densities, the data is available in the project record in document IY 5p 219 (Stangl 2007-existing road miles for wildlife analysis). Please see response to SCS-69 for additional information about the road density analysis.

SCS-74 – Your recommendation to apply the “Flynn Curve” to the marten analysis was considered. The Flynn Curve describes a marten and road density analysis that was described by Rod Flynn, Alaska Department of Fish and Game, in March of 2006. Flynn submitted this two page “Marten and roads” document to an individual biologist on the Tongass National Forest. Although Flynn has completed some peer reviewed studies on marten, this document has not been peer reviewed or published and was not considered as an ADFG agency recommendation. Because this model has not been accepted for use on the Tongass, it was not applied to the marten road density analysis for this project.

SCS-75 – The roads data that you display from the Transportation section is based on all roads occurring in the project area and includes some decommissioned roads. It does not match the wildlife road densities because this data was based on a larger analysis area (the WAA).

SCS-76 – Your reference to the Forest Plan Standard and Guidelines addressing marten mortality concerns is correct. The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment for American Marten, Trapping and Road Density section states that the current marten data does not support that marten populations are unsustainable. Therefore road densities restrictions were

not assessed. ADFG was consulted before and after the DEIS was published. ADFG has not identified a mortality concern with marten at this time (reference the personal communication record with Phil Mooney of ADFG in the project record). This information was documented and added to the project record.

In addition, a range of alternatives with varying degrees of impact will be presented to the decision maker (DEIS and FEIS, Chapter 2). Although Forest Plan Standards and Guidelines do not require any specific miles or density of roads for marten, all of the newly constructed roads are proposed for closure or decommissioning in Alternative 3 to eliminate motorized use and reduce the effects to marten. Please also response to see SCS-11.

SCS-77 – The Forest Plan Standards and Guidelines state that, “Where road access has been determined, through the analysis, to significantly contribute to unsustainable marten mortality, implement effective road closures to reduce mortality” (USDA Forest Service 1997a). Road access has not been determined to significantly contribute to unsustainable marten mortality in this area. Please see response to SCS-76 for information on alternatives that address road closures.

SCS-78 – Thank you for the information on the increase in prices for marten pelts. The Wildlife and Subsistence Resource Report, Management Indicator Species and Other Wildlife, American Marten, Affected Environment, Trapping and Road Density section was updated to reflect some of this information. The trapping data used in the DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment for American Marten, Trapping and Road Density section was acquired from ADFG in 2007 (personal communication, Phil Mooney). Although the price increase of marten pelts that occurred between 2004 and 2006 was not specifically addressed in the marten analysis, this information does not change the results of the analysis. The action alternatives will continue to have a “moderate” effect to marten as a result of cumulative activities that will noticeably affect and possibly have long term affects on individuals and their habitat. Also, in compliance with the Forest Plan, if marten concerns are identified in the future, we will cooperate with ADFG to manage marten (USDA Forest Service 1997a).

SCS-79 - The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species and Other Wildlife, Affected Environment and Environmental Consequences for Brown Bear section, discloses the effects on bears and bear habitat as a result of the action alternatives. Although this was initially considered as an issue, an increase in mortality as a result of an increase in road access was considered in the analysis (DEIS and FEIS, Chapter 3, Environmental Consequences for Brown Bear and the Wildlife and Subsistence Resource Report, Brown Bear, Affected Environment, Human-Induced Mortality section the Effects Analysis section).

SCS-80 – Although your recommendation for additional stream buffers for bear was considered, the brown bear analysis was completed in compliance with the Forest Plan Standards and Guidelines. Standards and guidelines do not require a 500-foot buffer on all Class I streams and because brown bear populations in this area are healthy, this recommendation was not adopted. Areas along specified streams were intentionally included in the proposed OGR to maintain bear foraging habitat.

SCS-81 – Your recommendation to exclude a portion of Unit 108 from all alternatives to address bear foraging habitat was considered. Your recommendation can be considered in any

alternative the ROD. Additionally, Alternative 3 excludes portions of Unit 108; this would maintain bear foraging habitat.

SCS-82 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species (MIS) and Other Wildlife address all MIS species. Analysis for birds was also addressed in the DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Migratory Bird section. These analyses considered the current population trend data and the reduction in productive old growth forest, coarse canopy forest and disturbance of MIS bird species. These analyses were completed in compliance with the Forest Plan Standards and Guidelines.

SCS-83 – The Wildlife and Subsistence Resource Report, Endemic Terrestrial Mammals, Affected Environment section discloses effects related to your comments. The analysis assumes that 25 percent single tree helicopter harvest would cause little change to Keen's mouse habitat because, as described in the DEIS and FEIS, Chapter 3, Habitat Connectivity and Old Growth section, this harvest method would maintain a diverse and abundant plant understory comparable to plant communities typically found in old growth stands (Deal 2007; Deal and Tappeiner 2002; Deal 2001, p. 2074). The research referenced was based on the review of partial harvest stands that removed large trees. In addition, Smith (2005) found that Keen's mouse thrived in a variety of habitats and that young growth appeared to be the highest quality habitat for this species.

SCS-84 – The DEIS and FEIS discloses the effects of the project to deer populations and subsistence harvest. The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Subsistence section discloses that in combination with other past, present and reasonably foreseeable future actions, the action alternatives (if implemented through project-level decisions and actions) may result in a significant restriction of subsistence uses of deer, due to potential effects on abundance and distribution, and on competition. The Subsistence analysis and the Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species (MIS) and Other Wildlife, Affected Environment and Environmental Consequences for Deer analysis was completed in compliance with current Forest Plan Standard and Guidelines and direction. Please see response to SCS-35 for additional information on the application of the deer model.

SCS-85 – Please see response to SCS-35 for information on the deer model analysis.

The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species (MIS) and Other Wildlife, Affected Environment for Deer defines high value habitat and prime habitat. High value habitat was based on the model. However, prime habitat was defined using high volume strata, elevation, and aspect and not the deer model. Please see response to BC-11 for information on other data used to assess the effects of alternatives on deer habitat.

SCS-86 – Please see response to SCS-35 for information on the deer model. The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Subsistence section discloses that the model was not designed to reflect actual numbers of deer but to define habitat capability. However, these data provide the best available information and can be used to assess the differences between alternatives.

SCS-87 – Please see response to SCS-35.

SCS-88 – As you recognized, deer harvest was used to assess the effects to subsistence harvest in the DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Subsistence section. This information was updated and corrected to reflect deer harvest and to better define hunter demand.

SCS-89 – Please see response to SCS-88. The subsistence analysis was updated to reflect some of your comments.

SCS-90 – Please see response to SCS-35 for information on the application of the deer model.

SCS-91 – Please see response to SCS-35 for information on the application of the deer model including why the deer model was not run with the assumption that all areas are at risk of deep snow.

SCS-92 - Please see response to SCS-35 for information on the application of the deer model including why the deer model was not run to consider four consecutive severe winters.

SCS-93 – Please see response to SCS-88 for updates made to the subsistence analysis and SCS-35 for information on the application of the deer model.

SCS-94 - Please see response to SCS-35 for information on why 25 percent partial harvest was excluded from the deer model.

SCS-95 - Please see response to SCS-35 and SCS-83 for information on why 25 percent partial harvest was excluded from the deer model.

SCS-96 - Please see responses to BC-22 and BC-23 for information on single tree prescriptions. Please see response to SCS-35 and SCS-83 for information on why 25 percent partial harvest was excluded from the deer model.

SCS-97 - Please see response to SCS-35 for information on the application of the deer model including why the deer model was not run using TimTyp or size-density instead of volume strata. Doerr et al. 2005 is a peer-reviewed document from the Journal of Wildlife Management. This document, along with Caouette and DeGayner (2005) from the Landscape and Urban Planning Journal, are considered the newest and best available science when discussing this topic.

SCS-98 – Please see response to SCS-35 for information on the application of the deer model including why the deer model was not run using the size density model.

SCS-99 - Please see response to SCS-35 for information on the use of the size density model.

SCS-100 - Please see response to SCS-35 for information on the application of the deer model including why the deer multiplier was not changed for the deer model.

SCS-101 - Please see response to SCS-35 for information on the application of the deer model including the shortcomings of the model.

SCS-102 – Please see response to SCS-35 for information on the application of the deer model including why the model was run assuming that past harvest was volume class 5.

SCS-103 – Please see response to SCS-35 for information on the application of the deer model and the analysis of high value habitat. The analysis was completed in compliance with current direction and meets Forest Plan Standards and Guidelines. The analysis defines the reductions in deer habitat for a range of alternatives so that the decision maker can make an informed decision.

SCS-104 – We considered your recommendation to map unit boundaries with quartiles. Although this information was not displayed in the resource report, a map showing unit boundaries with quartiles was added to the project record.

SCS-105 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Management Indicator Species (MIS) and Other Wildlife, Affected Environment for Deer supports your statement that prime habitat was defined using volume strata. Please see response to SCS-35 for information on the use of volume strata. The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Habitat Connectivity and Old Growth Reserves analysis also considered the effects to larger trees (volume class 6 and 7) habitat.

SCS-106 – Please see response to SCS-103.

SCS-107 – The DEIS and FEIS, Chapter 3, and Wildlife and Subsistence Resource Report, Subsistence, Affected Environment and Environmental Consequences for Deer section address the effects of an increase of roads on deer.

SCS-108 – The recreation economic information is not in the timber economic section, but it can be found in the Recreation section of Chapter 3. The determination was made to keep the economics sections with their particular resource because this economic information completed the resources section's discussions on existing and impacted environments.

The original paragraph in the DEIS related to outfitters and guides was incorrect, and new information has become available since the DEIS was written. We have clarified this paragraph in the FEIS in response to your comment (Chapter 3, Recreation, Environment and Effects, Affected Environment for Recreation Use and Tourism Trends).

SCS-109 – The DEIS, Chapter 3 Recreation, Affected Environment for Recreation Opportunity Spectrum (ROS) section explains the Tongass Forest Plan's (1997) goals and objectives for managing the recreation resource in the three different LUDs within the project area. The definitions for Recreation Opportunity Spectrum (ROS) can be found in the Recreation Resource Report, Appendix A.

The term moderate change to the recreation resource comes from a comparison of the changes to the ROS acreage and setting indicators: Visual Quality, Access, Remoteness, Visitor Management, On-site Recreation Development, Social Encounters and Visitor Impacts. The actual change of the ROS designation in acreage of the project area is small, the largest being Alternative 2 which changed 8% of the land from Semi-primitive to Roaded Modified, a total of 3,369 acres of a 40,651 acre sale. This is an acceptable recreation resource change to Timber Production and Scenic Viewshed LUDs. This would be considered a low impact to recreation resource. But the other consideration was the amount of existing disturbance within the sale area which pushed the level of impacts to moderate.

SCS-110 - Please see response to BC-6 and BC-7. Measures to minimize the probability of windthrow of buffers or unit edges have been considered and where risk indicates a need, addressed on individual unit basis in unit cards and prescriptions. Please see the FEIS, Chapter 3, Timber and Vegetation Section, Single Tree Selection and direct and indirect effects on windthrow risk.

SCS-111 – Please see responses to BC-6 and BC-20. Given the variability and changes in weather, it is not practical to guarantee or predict that future large scale wind damage will or will

not occur in the project area under any of the proposed alternatives, including the no action alternative.

SCS-112 – Please see responses to BC-22 and BC-23.

SCS-113 – Yellow-cedar is also harvested using ground-based systems and is used locally. Current market demand projections assume approximately 50 percent of harvested yellow-cedar is processed locally (Lerum 2008). Please also see response to SCS-19.

SCS-114 – Natural regeneration is expected to be abundant; all past harvest areas on the Hoonah Ranger District have been certified as naturally regenerated based on field surveys. Please also see response to BC-23.

SCS-115 – Please see responses to BC-6, BC-22 and BC-23. None of the proposed activities are on high vulnerability karstlands nor near any rare wetlands or soils described in the EIS (the unique soils in this project area). Thus, these areas are not at a higher risk of windthrow than under natural conditions for these activities.

SCS-116 – Please see responses to BC-6 and BC-18.

SCS-117 – The DEIS and FEIS, Chapter 3, Direct and Indirect Effects on Forest Vegetation discuss silvicultural prescriptions and species and diameter classes proposed for harvest. Table 3SV-5 displays the acres of proposed harvest by volume strata. Please also see responses to BC-22, BC-23, and SCS-31.

SCS-118 - The IDT and the Responsible Official evaluated the potential effects on subsistence uses and needs as required by ANILCA (see Chapter 3 DEIS, Subsistence). Chapter 3 of the DEIS and FEIS, Subsistence, Subsistence Findings, discloses that the alternatives for this project would likely result in a significant possibility of a significant restriction on subsistence deer resources and uses. The updated analyses of community subsistence use in the Forest Plan Amendment concluded the same.

A formal subsistence hearing was held in Hoonah, Alaska but no one testified. A formal hearing was also scheduled in Angoon, Alaska but weather precluded the hearing officer from attending. A Forest Service representative, however, was present and one individual did show up for the hearing. The hearing officer later called this individual and his testimony was taken and recorded by phone. The transcript of this testimony is in the Iyouktug project record. The FEIS, Chapter 3, Subsistence section was updated to reflect the public hearings and the subsistence findings. Please also see responses to SCS-118, BC-4, EH-1, and JM-3.

The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Subsistence analysis was updated to disclose the information on deer habitat capability. Please see responses to SCS-88 and 89.

SCS-119 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Threatened, Endangered, Petitioned, and Sensitive Wildlife Species, Goshawk section addresses the effects to goshawk nest sites and the measures taken to maintain a no harvest buffer around nest sites. The biologically preferred goshawk nest buffer was not incorporated into an alternative because it was up to the decision maker's discretion as to what buffer would be considered in the analysis.

SCS-120 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Threatened, Endangered, Petitioned, and Sensitive Wildlife Species, Goshawk section, describe

the effects to foraging habitat as a result of changes to productive old growth forest. Although not specifically mentioned, winter habitat would include the same parameters as nesting and foraging habitat that was addressed in the analysis.

SCS-121 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report), Threatened, Endangered, Petitioned, and Sensitive Wildlife Species, Goshawk section, describe the effects of harvest activities to the goshawk and its habitat. Please see response to SCS-42 for a clarification of harvest activities considered in this analysis.

SCS-122 - The level of analysis presented in the FEIS is consistent with Forest Plan direction.

SCS-123 – The Iyouktug Roads Analysis and other documents and information were used to propose the road management for the Iyouktug DEIS. The Roads Analysis is not a decision document. The Iyouktug Roads Analysis (Matter 2003) includes information and decisions from the 2002 Access and Travel Management Plan EA decision and past, current, and anticipated management on the Hoonah Ranger District. The 2001 EA presented alternatives for the management of roads on the Hoonah Ranger District and informed the public of those alternatives. This EA also considered a range of options for road maintenance and options for future road maintenance. Another ATM analysis is scheduled for 2009, and it will re-evaluate the 2002 decision. Roads and road management options for roads built, reconstructed, or with bridge replacements in the Iyouktug project area will be covered with the decision on this project. Please also see response to SCS-20.

SCS-124 - The Forest Service Manual [FSM 1970.6] states, in part, that "the responsible line officer determines the scope, appropriate level, and complexity of economic and social analysis needed." The Iyouktug project is a timber sale project, and was proposed to respond to the goals and objectives identified by the Forest Plan for the timber resource and to help move the project area toward the desired condition identified in the Forest Plan for the lands within the Timber Production and Scenic Viewshed LUDs.

The Forest Service is not required to quantify, in monetary terms, all of the costs and benefits associated with non-market impacts, and in fact, under most planning and project conditions, all costs and benefits cannot be monetarily valued.

The analysis of the project's potential effects on these non-market values is reasonable and consistent with Forest Service Manual and Handbook guidance regarding social and economic analyses.

The financial efficiency analysis displayed in Table 3TR2 compares the estimated Forest Service direct expenditures with the estimated financial revenues of each project alternative. The Forest Service is not required to quantify the non-market benefits and costs associated with every timber sale. However, the Forest Service is required to "ensure that unquantified environmental amenities and values [are] given appropriate consideration in decision-making along with economic and technical considerations" [42 USC 4332(2)(B)]. As stated above, the Iyouktug Timber Sale EIS discusses the potential effects of the project on the non-market values, such as subsistence, wildlife, recreation, fisheries, water quality, soils, and wetlands as well as the impacts to the inventoried roadless areas.

SCS-125 – A logging/transportation plan was developed prior to the Position Statement and used in the Iyouktug Roads Analysis. That plan was used as a basis for planning the Iyouktug Timber Sale EIS and further refined during on the ground investigation to access proposed units in the

sale area. As explained in Chapter 2, Alternative Development Process, as we designed this sale, we attempted to limit the amount of road building to improve economics and to reduce impacts of roads on resources.

SCS-126 – Please see response to SCS-21.

SCS-127 – Please see response to SCS-20 for information on closing and decommissioning roads. Although Appendix K of the Forest Plan states that roads should be minimized to the extent feasible, it does not exclude roads from OGRs. The Iyouktug Interagency Old Growth Reserve Review Team acknowledged that open roads will be maintained within the small OGRs within the project area. The interagency team felt that the habitat value of these areas was important enough to include them in the OGR even with open roads.

SCS-128- A portion of Road 8534 would be closed after the timber harvest through the 2002 ATM decision (USDA Forest Service 2002b). Please also see response to SCS-66. Road 85093 is not in the Project area.

SCS-129 - Please see responses to SCS-20, SCS-123, and SCS-125. The past analyses of roads informed and drove the overall project design (Chapter 2, Alternative Development Process), while the issues drove the alternatives. We recognize the importance of limiting road construction and open roads while also designing a project that meets the Purpose and Need for the project. As stated in the Iyouktug Roads Analysis (Matter 2003), “Since opportunities do exist for future expanding resource and roading activities, the minimum road system for the IRAP2 area is not in place.”

SCS-130 - The 2003 Iyouktug Roads Analysis is available by request from the project record (Matter 2003). While additional roads have been identified and analyzed in the DEIS, the Iyouktug Roads Analysis is a beginning point for the project.

SCS-131 – In response to your comments, the IDT reviewed the conditions of several roads. The Roads Analysis Process included Road 85305 (Matter 2003, p. 23); it states "Assign road #85305 to the access road at the Suintaheen fish pass at MP 11.15 on #8530." A review of both the ATM decision (USDA Forest Service 2002b) and the Roads Analysis showed that NFS road 85305 was incorrectly identified in the DEIS for closure. Because no such decision was made, this closure was removed from consideration in all alternatives, including the no action alternative. The IDT analyzed this change in the FEIS (Chapter 2 and Chapter 3), and in the analysis in the project record.

In the decision for the Iyouktug project, the decision maker will decide which roads built, reconstructed, or with bridge replacements in the Iyouktug project area would be open or closed (and place into storage); further analysis related to the roads rule will occur during the upcoming Access Travel Management analysis process. Related to roads analysis, please also see responses to SCS-20, 123, 130, and 132.

SCS-132 – The Iyouktug ROD will include a decision on road management objectives for roads constructed, reconstructed, or with bridge replacements in the Iyouktug project; this will determine which of these roads are open or closed by vehicle class (see DEIS, Appendix C, Road Cards). Engineering and motorized access by vehicle class of every road on the Hoonah Ranger District will also be analyzed in the ATM update planned for 2009.

SCS-133 – The information on roads currently open in the Iyouktug area was provided by Chris Budke, an Iyouktug IDT member, based on in-the field knowledge of the roads and current road use. The Iyouktug Roads Analysis covers a larger area than the Iyouktug Timber Sale EIS, resulting in more miles of road being included in the Roads Analysis. Information on roads is available in the EIS as well as in the Project Record.

SCS-134 – The 2002 ATM, Roads Analysis (Matter 2003), RCS, and annual road maintenance plans identify maintenance issues (Iyouktug project record). There are no known erosion problems affecting water quality on any of the open or closed roads in the Iyouktug project area. Any known items of concern on roads, such as bridges that need to be replaced and red and gray pipes have been identified and discussed in the DEIS and updated in the FEIS and in the project record. Additional information about current road conditions and maintenance needs has been added to the project record and the FEIS. Priorities for maintenance are tied to maintaining roads to Maintenance Level Standard. Please also see response to SCS-123. This information will be considered in the FEIS for this project.

SCS-135 – In the decision for this project, the decision maker will decide which roads built, reconstructed, or with bridge replacements in the Iyouktug project area would be open or closed (and place into storage). Temporary road decommissioning will be part of the timber sale contract. National Forest System roads will be closed/put into storage or kept open as determined in the ROD. If a change was determined to be necessary for keeping roads open, a new NEPA analysis/decision would have to occur.

SCS-136 – The DEIS and FEIS, Chapter 3 (and the Wildlife and Subsistence Resource Report) considered the effects of increased road use as part of the effect of harvest activities on wildlife. Please see response to SCS-42 the definition of harvest activities. The effects of roads are specifically addressed in the DEIS and FEIS Chapter 3, Environmental Consequences for American Marten and for Brown Bear sections. All new roads were considered as opened during harvest activities for all wildlife analysis. Please see response to SCS-168 for sediment. In terms of the transportation system, roads actively used in association with timber harvest activities will receive road maintenance commensurate with the use. The changes in the Iyouktug road system are not expected to impact long-term access or travel management on the existing Hoonah road system because roads proposed for continued maintenance are determined necessary for the protection, administration and utilization of the National Forest System lands and the use and development of its resources.

SCS-137 – In the case of Iyouktug, we determined that the road closure activities of roads covered by the 2002 ATM Decision was not a connected action and should be analyzed as part of cumulative effects because it was a different decision than Iyouktug and by analyzing it this way it shows the impact of this ATM decision on the project area. Whether the closure of Road 8534 is considered ongoing or part of this action, the effects of keeping Road 8534 and other roads open was analyzed. As stated in Chapter 2 of the DEIS and FEIS, Alternatives Considered in Detail section, Road 8534 would be used and closed/stored after timber sale harvest (ATM decision, USDA Forest Service 2002b). The use of the road and the future closure/storage was analyzed in the DEIS and FEIS action alternatives. Our expectation of its future closure is justified. The Hoonah Ranger District has a good record of for placing roads into storage; approximately 10-20 miles of road have been placed into storage by Public Works Contract every year since the 2002 ATM decision (see the Iyouktug Project Record for road maintenance plan accomplishments for examples). A portion of the Forest's annual maintenance funding is

set aside to continue this activity on ATM identified ML1 roads (not needed for current administrative use). See also response to SCS-20

SCS-138 – The harvest rotations/cutting cycle in the Iyouktug area are expected to be 75 years (for shovel units) and not less than 110 years for clearcut units (please also see response to BC-23). Whether timber is harvested on a short or long rotation is irrelevant as far as reconstructing roads go. If a road is needed for future harvest activities it will be designated as an NFS road. Please see response to SCS-20 and SCS-137.

SCS-139 - Please see response to DEIS and FEIS Chapter 3 and see SCS-20. Also please note that the RMO and 2002 ATM identified 8534 as important for subsistence users out to the point it will be placed into storage post-sale.

SCS-140 – A transportation map is included in the DEIS and FEIS as the first map in Appendices, Appendix C, Road Cards. A transportation map would be included in the ROD. Individual road cards display or describe known concerns such as bridge replacement locations, culvert locations, and red pipes (see DEIS Appendix C and response to OHMP-3).

SCS-141 – Road miles for new and existing roads are based on current GIS data (electronic files including GIS comprise the Forest Transportation Atlas). New road locations were visited on the ground, recorded in road logs, and transferred to GIS using notes, orthophotos, and on-the-ground knowledge. GIS and INFRA are the most up to date information available and allow comparison within and across resources. Decommissioned temporary roads are no longer considered roads, but do remain in our analysis and on the current GIS roads layer along with Maintenance Level 1 roads that are placed in storage. See also the response to SCS-133.

SCS-142 – Please see response to SCS-141. We will be revising the Hoonah Ranger District ATM plan in 2009 and will work on updating our road atlas, INFRA, GIS, and maps for the ATM effort.

SCS-143 – The last segment of road 8534 is a ML 1 road and is in storage.

SCS-144 - Please also see response to SCS-136. In the past several years, there has been adequate funding to maintain the roads in HRD as per the 2002 decision. The proposal for the new ATM will use the average annual road maintenance budget projections as sideboards for what roads can be maintained at what levels. It is expected to provide a forest transportation system that will be economically feasible given the reduced road maintenance budget. As stated in Transportation System in Chapter 3 of the DEIS and FEIS, the proposals in this EIS are based on, and compatible with, the past analysis, and the road management objectives from this decision will be included in the new ATM plan. The financial analysis of all roads and their maintenance will be included in that analysis.

SCS-145 – The cost of long-term road maintenance is considered in this analysis by comparing, between the alternatives, the miles of road left open in the project area after the timber sale and 2002 ATM decision are implemented (see Chapter 3, Transportation System, Roads Analysis Process and Cumulative Effects of Alternatives). However, the wording in the FEIS (Chapter 3, Transportation System, Cumulative Effects of Alternatives) has been adjusted in an attempt to clarify the fact that, cumulatively, there would be less road open, and thus less maintenance needed after Alternatives 3, 4, and 5 were implemented, than for Alternative 2 (the Proposed Action) or Alternative 1 (No Action). Alternative 2 leaves more road open cumulatively because of the abundance of new open roads in Alternative 2; Alternative 1 leaves more road open

cumulatively because Road 8534 would not be closed due to the prior ATM decision. Please also see Chapter 2, Table 2-1, footnote 5 and the responses to SCS-123, 136 and 137.

SCS-146 – Please see responses to SCS-136 and SCS-144.

SCS-147 – In response to your comments, the IDT reviewed the condition of non-system roads (roads identified as unauthorized in the DEIS) and other roads. Chapter 3 of the FEIS now explains the condition of non-system road (called “unauthorized roads” throughout the Iyouktug analysis); approximately 6.6 miles of the 7 miles of non-system road are decommissioned to the standards in place at the time of harvest. Approximately 0.4 miles of the non-system road are open roads accessing existing rock quarries; these are the only unauthorized roads (by today’s standards and definitions) in the Iyouktug project area (Transportation section). As described in Chapter 2 of the FEIS because of the need for rock pits for this project, as well as for future road maintenance, all action alternatives now propose reclassifying 0.4 miles of existing, open, unauthorized roads that access rock pits to NFS roads. Using today’s road vocabulary, this reclassification is called construction.

The footnote in Table 3TR-1, displays that we recognized and correctly categorized the “re-use” of an old temporary road as new construction of a temporary road. It does not mean that the former temporary road was not decommissioned.

Each year the Hoonah Ranger District prepares a road maintenance plan for District road work and maintenance needs and to provide a way to report accomplishments. It includes costs, accomplishments, and deferred maintenance needs. Several years of road maintenance plans as well as an estimate of deferred maintenance needs and costs have been added to the Iyouktug Project Record to provide additional information. Please also see responses to SCS-137 and SCS-145.

SCS-148 – Field reviews shows roads are maintained to standard and are mainly in good condition, with normal, annual road maintenance needs (small slumps or slide clearing, ditch cleaning, or removal of blowdown) dealt with regularly. Please see response to SCS-134 and SCS-137.

SCS-149 – We have not received any notice of violation of water quality standards from the State of Alaska related to road maintenance needs in the project area. Timber sales are not required to bear the costs of culvert repair. Limited funds are allocated by Congress for this purpose, and will be appropriated according to priorities across the forest. Please also see response to SCS-20 and OHMP-3.

SCS-150 - Please see response to SCS-145

SCS-151 - For existing roads, activities such as blading, minor slump and slide removal, cleaning of drainage structures and brushing are considered maintenance items to make a road suitable for use. For the Iyouktug analysis, items like culvert installation or replacement, bridge replacement, subgrade repair and surfacing are considered reconstruction items.

SCS-152 – Bridges are inspected for safety every 2 years. Existing bridges in the Project Area will no longer support commercial traffic or recreational traffic in the near future because they are at the end of their useful life.

SCS-153 - “Temporary roads” describes roads used on a timber sale and then decommissioned after harvest. Temporary roads are authorized by the timber sale contract and then are required

to be decommissioned as part of that contract; they are constructed to the minimum necessary standards to satisfy environmental concerns and to get the specific job done. They are of minimum width and have a minimum amount of fill material placed on the surface. They are decommissioned after use. Roads that may be left open are NFS roads; the wording in the Transportation Specialist Report was corrected to reflect the correct terminology. Decommissioning is part of the timber sale contract to be accomplished by the Purchaser.

SCS-154 – Activities are similar for road decommissioning and road storage, but there are minor differences between the two actions. Temporary road decommissioning involves removal of all culverts; whereas some culverts (for ditch relief) may be left in place on roads in storage (see definition of road decommissioning and road storage in the FEIS, Chapter 4, Glossary). Related to wetlands, temporary roads are temporary in use but the fills are permanent. The impacts of all roads on wetlands are described in the Wetland Resource Reports and Wetland section in Chapter 3 of the DEIS and FEIS. Under the Clean Water Act a temporary fill is not the same as a temporary or permanent forest road. Temporary roads are permanent fills under the Clean Water Act.

The terminology related to unauthorized and temporary roads, as used in the Iyouktug analysis, was clarified in the FEIS, Chapter 3, Transportation section. By adding the footnote in Table 3TR-1, we displayed that we recognized and correctly categorized the “re-use” of an old temporary road as new construction of a temporary road. We analyzed the effects of all roads for the Iyouktug project. Additional information regarding the condition of non-system roads has been added to the Iyouktug project record. Please also see response to SCS-147.

SCS-155 – Temporary roads are used for short-term access; they would not be designated for ongoing use because they would be decommissioned after timber harvest. One of the reasons that temporary roads are decommissioned is to avoid future resource damage (see definition of road decommissioning in the DEIS and FEIS, Chapter 4, Glossary). There will be BMP implementation monitoring of road closures to assure that these roads are closed. We have a high compliance rate with BMPs, as demonstrated by our 2006 annual BMP monitoring report (USDA Forest Service 2007e).

SCS-156 – The DEIS and FEIS, Chapter 3, Management Indicator Species (MIS) and Other Wildlife Species and Subsistence sections assessed the affects of all temporary roads during project activities. All temporary roads were considered open during project activities and closed and decommissioned once activities were completed.

SCS-157 – Management within Timber LUDs, following Forest Plan Standards and Guidelines, allows for the construction, use, and maintenance of roads as an appropriate means for accomplishing timber harvest activities. We do not refute your claim that road construction or reconstruction have some impact on the environment and resources; however, we disagree to the severity the impact. See Chapter 3, Direct and Indirect Effects on Water Quality-Sediment and on Fish for further information on these expected impacts. See also EPA-1, EPA-2, SCS-136, SCS-148, SCS-149, and SCS-155.

Additionally, with the exception of the Reid & Dunne study these articles are about roads constructed of native surface and not shot rock used in road building practices in Alaska. Rock quality here is high as evidenced it must be drilled and blasted rather than ripped. Reid & Dunne cites the importance of high quality aggregate to reduce erosion; their study was also done during winter haul in 1984, current Timber Sale Contracts requires haul to be stopped when rutting of

road surface occurs. Surfaced roads to be stored or decommissioned act as a sediment trap and should be left in place with drainage structures removed.

SCS-158 – The timber economics section speaks to the analysis of helicopter harvest (DEIS and FEIS, Chapter 3). Helicopters are considered during transportation planning. Also helicopter activities were considered during project design and described in the DEIS and FEIS (see Chapter 2, Alternative Development Process and Design Elements Common to All Action Alternatives, Timber Harvesting). As described in Chapter 2, all sites would be located in pre-existing developed sites or in areas that are proposed for development.

Please see response to SCS-42 for information on helicopter activities and wildlife. Forest Plan Standards and Guidelines for goshawks will be applied. There are no standards and guidelines pertaining to the management of bear dens. The majority of harvest activities are expected to occur during the summer months when bears are not in dens.

SCS-159 – Bridges to be replaced in Alternative 1 will be replaced regardless of the proposed timber sale because these roads have been identified in the 2002 ATM decision to remain in use. As mentioned in the Stream Crossing and Bridges section (DEIS, Chapter 3, Transportation System) there is a possibility of using one or two bridges several times, installing and pulling the bridge as a road is constructed and then placed into storage or decommissioning reducing the costs by over \$20,000 per installation.

SCS-160 – Please see Table 3WF-6 in the DEIS. This table displays cumulative (past, present and future) canopy removal by subwatershed. It lists one subwatershed (Middle Suntaheen) with cumulative canopy removal of 28% in one alternative, Alternative 2. Please see the analysis of direct and indirect effects on water quality-temperature regarding your concern on increased stream temperatures.

The application of BMPs during layout, implementation, and maintenance will maintain water quality to State of Alaska standards for all alternatives and limit instream impacts. This will avoid compromising spawning and rearing habitat.

SCS-161 – The text explaining the relevance of Walters and Prefontaine (2005) has been updated in Chapter 3 of the FEIS and corresponding resource reports in the project record. The Prince of Wales (POW) study was used to demonstrate that stream temperatures within the Iyouktug watersheds should not be showing any increases due to past timber harvest due to the similarity of stand age between the past harvest in Iyouktug and those of the POW study. We agree that maintaining intact riparian stands play a primary role in maintaining stream temperatures. All significant stream channels (Class I-III) within proposed units under this proposed project will receive buffers as per the Stream Channel Protection Measures outlined in Appendix B of the DEIS. Class IV streams will be protected by following Best Management Practices also outlined in Appendix B of the DEIS.

Additional study of angular canopy density is not warranted and outside the scope of this analysis. Currently, RMAs adjacent to harvest units are in a natural undisturbed condition, comprised of old growth riparian forest. Stream course protection, additional RAW zones and partial harvest prescriptions are designed to maintain buffer windfirmness.

SCS-162 – Windthrow was considered an important factor in this analysis and all action alternatives. Riparian buffers were designed to minimize windthrow through site-specific Reasonable Assurance of Windfirmness (RAW) zones adjacent to RMAs. The combination of

RMA and RAW zone buffers, as well as partial harvests, are intended to maintain the overall integrity of the current riparian vegetation.

According to the 2006 Annual Monitoring and Evaluation Report, monitoring results have shown that post harvest windthrow is present in 25% of buffers associated with harvest units harvested during the 6 years from 2000 through 2005 across the forest. The average amount of windthrow in the buffers is 2.3 percent. The amount of windthrow is expressed as the cumulative number of trees windthrown divided by the original number standing trees in a buffer. The cumulative amount of windthrow in the buffers is highly variable and ranges from 0 to 73 percent (USDA Forest Service, 2007). See also SCS-160 and SCS-161.

SCS-163 – There is no research or information to indicate that current riparian buffers are inadequate in protecting stream temperatures. Furthermore, the effects of climate change on the natural resources of the Tongass are highly uncertain, especially over the long run, and likely to be small, especially over the next 10 to 15 years. While there is general agreement among scientists that the climate is warming, there is considerable uncertainty concerning the exact effects of climate change on the forests of Southeast Alaska and how best to deal with possible changes to the many resources on the Tongass. There is a risk that climate change may trigger other changes (wind, windthrow, air and water temperature changes, etc.), however, there is considerable uncertainty concerning specific predictions of how the climate may change, and even more uncertainty regarding the effects of climate change on resources of the Tongass National Forest. The state of current knowledge and the uncertainty about specific effects of climate change, gives us no reason to believe that the Iyouktug project will exacerbate climate change or its effects. We think the Forest Plan provides for resiliency in the face of uncertain but anticipated change, and believe that knowing more information on climate change is not essential to making a reasoned decision about Iyouktug.

SCS-164 – High stream temperatures in Southeast Alaska are likely to occur during warm, rainless weather and resulting low stream flow periods regardless of watershed harvest levels or extent of past riparian harvest. This confirms the importance of current riparian management practices of the Forest Plan. Shade provided by intact riparian forests moderates the effects of climate on stream temperature. Please see response to SCS-161 and SCS-163.

SCS-165 – Your request for additional collection of stream flow and water temperature data in the project area is noted, however we feel that sufficient data was collected to complete our analysis.

SCS-166 – Qualitative descriptions of effects labels are found in the Environmental Consequences for Watershed and Fish section in Chapter 3. Additionally, hydrology and fisheries technicians identified specific concerns while conducting field surveys of streams and fish habitat in the project area. These concerns included issues such as channel type, steep, unstable side-slopes (for fish/watershed), and slope gradient (soils/wetlands). Responses to these concerns, BMPs that will be applied, and mitigation measures can be seen in the unit cards for specific concerns; pinpointing locations and mitigation measure for specific sites, as well as maps for each unit with specific information on slope gradient (slopes greater than 72% shown on maps), stream classes, stream channel type and existing harvest unit with year harvested.

SCS-167 – Please see the response to OHMP-3 and SCS-149 for information on red pipes. The ATM identified some of your concerns and some of these problems have been addressed. The slide and slump problems on road 8534 was repaired under Equipment Rental Contract during

the summer of 2007. Other issues will be addressed during the sale (if needed). The decision maker will consider the effects of past practices and cumulative watershed effects in his decision. Please also see Chapter 3, Direct and Indirect Effects on Water Quality-Sediment and on Fish for further information on these expected impacts. See also SCS-20, SCS-149, SCS-155, and SCS-157.

SCS-168 – Thank you for directing our attention to a potentially misleading citation in the DEIS. We have clarified this section in the FEIS. The studies cited in Hicks et al. (1991) measured sediment increases associated with intensive logging, without use of BMPs, in two watersheds between 1957 and 1964. Activities during this seven-year period included clearcut harvest of 22% and 29% basin area (including riparian harvest) and construction of 23 and 12 miles of road. Sediment increases were partly attributed to landslides in steep clearcuts and use of a quarry that discharged sediment directly into the stream. The effects described represent a worst-case scenario of logging that is no longer practiced in the Tongass NF. Because the Iyouktug project would incorporate state-of-the-art BMPs in full compliance with current state and federal regulations, we do not anticipate measurable increases in sediment or any exceedences of state water quality standards for the growth and propagation of fish.

SCS-169 – The Iyouktug Record of Decision explains how this project complies with the Clean Water Act. The project would not violate water quality standards. Please see responses to DEC-2, EPA-1, EPA-2, SCS-149, and SCS-168.

SCS-170 – The 2006 Forest Plan Monitoring and Evaluation Report summarizes ‘grab’ sample turbidity compliance monitoring conducted during culvert installation and replacement. Turbidity data reported in FY 2006 demonstrates compliance with State water quality criteria. The elevated turbidity levels typically recovered to background levels within 48 hours. At the sites where this did not occur, additional mitigation was applied to decrease the turbidity levels. We routinely consult with ADEC on corrective actions when turbidity is elevated. Analysis of continuous turbidity data is underway in case study watersheds on Prince of Wales Island. Progress reports are summarized in the 2005 and 2006 Forest Plan Monitoring and Evaluation Report. Please see also EPA-2 and SCS-149.

SCS-171 – We have not violated water quality standards for turbidity or sediment. The cited USFS reports (Paustian 1987 and the 2004 M&E report) do not conclude that water quality standards were violated. We have not received any notice of violation of water quality standards from the State of Alaska. Please see also EPA-2 and SCS-149.

SCS-172 – The Forest Plan does not require sediment monitoring. We continue to work cooperatively with the State of Alaska to develop and apply water quality monitoring protocols.

SCS-173 – Please see response to SCS-163.

SCS-174 – As a federal agency operating under the silvicultural exemption from the 404 permitting process, we follow applicable laws and regulations including Executive Order 11990 and the Code of Federal regulations, which defines actions to be taken to meet the silvicultural exemption.

The intent of EO 11990 and subsequent regulations is to avoid new construction in wetlands to the extent practicable and when wetlands can not be avoided, to include all practicable measures to minimize harm to wetlands which may result from such use. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors.

The project area is nearly half wetland but less than half of the roads are located on wetlands. This data is presented as an indicator that road construction is avoiding wetlands to the extent possible (at the project scale) as required by federal regulations. Please see DEIS and FEIS, Wetland Avoidance section. Further avoidance of wetlands would lead to more roads on steeper slopes and thus is not environmentally preferred to road construction on wetlands. Wetland avoidance at the road segment scale is discussed on the individual road cards (DEIS, Appendices B and C).

SCS-175 – The graphics provided after the comment period were reviewed and considered by the IDT. The graphics are included in the Iyouktug project record.