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But despite facts demonstrating that a substantially smaller sale would best satisfy the project's professed purpose of providing economic timber, the Forest Service explicitly rejected the most economically efficient alternatives because of a lack of volume to supply larger mills.<sup>344</sup> The Forest Service failed to present a reasoned analysis of the economics of this project, rendering the decision to proceed with this sale arbitrary. We request that the Forest Service withdraw the ROD as it failed to make a decision that would meet even the unreasonably restricted purpose and need for this sale.

**b. The FEIS Fails to Support its Assumption that Emerging Industries Require a Sale of this Scale and the Forest Service Needs to Analyze the Impacts of those Emerging Industries Before Relying on them To Proceed with this Project**

Appellants strongly object to the Forest Supervisor's assertion that future emerging industries are relevant to the decision to proceed with this project. The ROD asserts that the large utility volume from this project "may meet future needs, especially if the need for alternate fuels increases."<sup>345</sup> The Forest Service has not provided any NEPA analysis of the economics or scale of a wood fuels industry and we find it hard to believe that such an industry would require a project of this scale.

Further, the hypothetical wood energy program warrants analysis in terms of climate change. As pointed out in Greenpeace et al.'s administrative appeal of the Navy Timber Sale, wood combustion produces more carbon dioxide emissions per unit of energy than oil or propane combustion and nearly as much as coal. These emissions by far exceed those of other clean, renewable energy sources readily available in Southeast Alaska.

For these reasons, the Forest Supervisor cannot proceed with a sale on the basis of an alternative fuels market without ever analyzing the impacts of such an industry in either a supplemental EIS or in the 2008 TLMP amendment FEIS. Such a long-term program needs to consider whether it will even be legal – current discussion drafts of the American Climate Energy and Security Act (ACES) may prohibit or restrict this type of activity on public lands. Appellants strongly object to current plans to convert forestland to biofuel production, and submits that there has never been an adequate analysis to support a biofuel program on the Tongass.

**c. The FEIS Makes Misleading Statements and/or Unsupported Assumptions Pertaining to Employment Levels**

In this section, we discuss how the FEIS failed to accurately characterize employment and local revenues generated by this project. We first point out that the Forest Service's employment figures overestimate the ability of this project to generate jobs because of the high rates of interstate shipment and export. When an agency relies on overinflated estimates of a project's economic benefits, it impairs a fair consideration of adverse environmental impacts by the decisionmaker and skews the public's evaluation of a project.<sup>346</sup>

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<sup>344</sup> Logjam FEIS at 2-4.

<sup>345</sup> Logjam ROD at R-5.

<sup>346</sup> *Hughes River Watershed Council v. Glickman*, 81 F.3d 437, 446 (4<sup>th</sup> Cir. 1996);

i. The FEIS Violated NEPA By Providing An Inaccurate Estimate of the Range of Employment Generated and by Failing to Analyze Sale Impacts on Small Mills

In our scoping comments, we specifically requested an accurate assessment of the number of jobs and revenue generated by this project based on export information from previous years. We reiterated this concern in our comments on the DEIS and pointed out that the table on jobs was misleading because it provided an upper range of employment figure that assumed that all timber, including yellow cedar, would be processed in Southeast Alaska.<sup>347</sup>

The FEIS measures the financial efficiency of the sale in part in terms of employment opportunities which it characterizes as the number of annualized jobs.<sup>348</sup> The FEIS estimated that the project will create between 251 and 356 jobs based on a range of export scenarios where 50% of the net volume goes to markets in the United States and Pacific Rim to a scenario where all sawlogs receive domestic processing.<sup>349</sup>

Again, an EIS does not meet NEPA's requirements when it relies on misleading economic assumptions, inaccurate data, or outdated reports.<sup>350</sup> The Forest Service has no support in the record for the assertion that there will ever be full domestic processing of sawlogs from a sale of this size. In fact, agency experts have explicitly assumed that all yellow cedar would go to foreign markets as raw logs and all red cedar would go to the lower 48.<sup>351</sup> Forest Service data on export permits and in cut and sold reports support this assumption.<sup>352</sup>

	Yellow Cedar Cut	Yellow Cedar Sold	Yellow Cedar Export Permits	Red Cedar Cut	Red Cedar Sold	Export Permits
2003 - 2007	18,133	25,819	21,381	14,114	22,167	16,916

Further, actual exports and interstate shipments for the years 2004 – 2008 have been 11.2, 19.5, 4.4, 3.5 and 5.8 MMBF – a total of 44.4 MMBF.<sup>353</sup> According to the FEIS, this large volume sale is necessary to support one of the region's larger mills.<sup>354</sup> We have tracked export permit approvals and timber sales and have not found one large sale purchased by Viking Lumber or any other large mills in recent years that received anything close to complete local processing. There is simply no support for the assumption that there would ever be full domestic processing for this sale.

The error is not insignificant. The Forest Service calculates that sawmill jobs produce direct income of \$115,250 per MMBF and that realized income to regional employees could approach \$13.4 million.<sup>355</sup> But if the 21.5 MMBF of cedar left the state in the raw, that number would decline by nearly \$2.5 million and reach \$4.2 million in exported jobs if the maximum 50% interstate shipment occurred. Forest Service records clearly show that

<sup>347</sup> Greenpeace et al, Comments on the Logjam Timber Sale DEIS at 56; SCS comments at Section V.

<sup>348</sup> Logjam FEIS at 3-74.

<sup>349</sup> Logjam ROD at R-5.

<sup>350</sup> *Hughes River Watershed Council*, 81 F.3d at 446; *Van Abbema v. Fornell*, 807 F.2d 633, 639-42 (7<sup>th</sup> Cir. 1986).

<sup>351</sup> Housley, R., 2007.

<sup>352</sup> FS cut and sold reports, available online at <http://www.fs.fed.us>.

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<sup>354</sup> Logjam FEIS at 2-4, 3-76.

<sup>355</sup> *Id.* at 3-83-3-84.

every large scale timber sale involves high rates of cedar export and there is absolutely no basis for the assumption that all sawlogs would receive local processing. This error needs to be corrected in a supplemental EIS as the Forest Service has misled itself and the public on a significant issue – employment levels generated or maintained by the project.

In our comments on the DEIS, we asked the Forest Service to provide an accurate analysis of mill jobs in this FEIS.<sup>356</sup> NEPA requires that the Forest Service respond to comments in specific ways, including making factual corrections or supplementing or modifying analyses.<sup>357</sup> If the Forest Service does not make a corrective response, it must at least “explain why the comments do not warrant further agency response, citing the sources, authorities or reasons which support the agency’s position.”<sup>358</sup>

The response was that “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.”<sup>359</sup> It then simply restated that “the range for the sawmill annualized jobs considers that up to 50 percent of the maximum sawlog volume of all species can be shipped to markets outside Alaska to considering all sawlogs processed locally.”<sup>360</sup> These statements are unreasonable and inconsistent with the Forest Service’s own recent documentation of timber industry trends.<sup>361</sup>

Further, the Forest Service failed to consider how a sale designed for cedar exports will affect the emerging small mill industry in light of future, large scale projects likely to occur on Prince of Wales Island. The Forest Service needed to disclose that designing a large timber sale for cedar exports poses significant risks to the long-term supply available to the small mill sector. Oral testimony from one small mill owner during the recent TLMP amendment process explained that “I’ve been running a small sawmill for about 18-20 years up here and I’m pretty much against exporting any of the logs ... I’m just more into high value added in the state of Alaska. I think it would provide a lot more jobs.”<sup>362</sup> Other regional small mill owners have explicitly advocated that for a cessation of shipments of unprocessed logs out of state because the Forest Service’s current implementation depletes the region’s “log savings account” by supplying manufacturers elsewhere with high value products, compromising Southeast Alaska’s future timber needs.<sup>363</sup>

We consider raw log exports and interstate shipments to be an important issue that directly bears on this project. The amount of cedar sold between 2001 and 2005 was less than 20% of the volume of spruce and hemlock during the same time period but the stumpage values were similar: \$3.3 million for the spruce and hemlock and \$2.8 million for the cedar.<sup>364</sup> Because cedar comprises a higher percentage of this sale, it likely that raw log exports will account for more than half of the stumpage value for this project. The Forest

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<sup>356</sup> Greenpeace et al. comments at 55, 56.

<sup>357</sup> 40 C.F.R. § 1503.4.

<sup>358</sup> 40 C.F.R. § 1503.4.

<sup>359</sup> Logjam FEIS, Appx. B at B-10.

<sup>360</sup> Logjam FEIS, Appx. B at B-10.

<sup>361</sup> See, e.g. Housley, 2007.

<sup>362</sup> Cabe, R. 2007. Tongass Forest Plan Amendment DEIS Oral Comment made by Rick Cabe of Thorne Bay Wood Products, Thorne Bay, AK. April 24, 2007.

<sup>363</sup> Jackson, L. 2007. Encourage a Round Log Export Ban. Ketchikan, AK: February 25, 2007. Available at [http://www.sitnews.us/02/07Viewpoints/022507\\_larry\\_jackson.html](http://www.sitnews.us/02/07Viewpoints/022507_larry_jackson.html); see also Peterson, KI. & J. Bruns, 2005. Prince of Wales Island: Hotbed for Small Sawmill Operators Bent on Value-Added Commodities. Alaska Business Monthly. August 2005 (advocating for local value added processing and keeping proceeds available to the local economy).

<sup>364</sup> 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](http://www.fs.fed.us/r10/ro/policy-reports/for_mgmt/index.shtml).

Service needed to bluntly acknowledge that the primary reason for proceeding with this project at this time is to support Viking Lumber raw log cedar exports and misled the public with the numerous statements about competitive bidding and multiple large sale purchasers.

The Forest Supervisor failed to adequately balance adverse impacts in his decision because the decision relied on an inaccurate estimate of generated employment. Further, the EIS misled the public about economic benefits that could result from the project and failed to disclose that logs cut for subsidized interstate shipments and foreign exports now will not be available for economically efficient small mills in the future. Courts have repeatedly held that reliance on the inaccurate economic estimates requires that the Forest Service revise the FEIS, and such a result is required here.<sup>365</sup>

*d. The FEIS Failed to Account for the Recent Legislative Changes that Removed the Purported Justification for Interstate Shipments and Exports*

The Forest Service needed to reconsider its reasons for authorizing interstate shipments and time-limited foreign exports because the purported justification for these policies, the deficit appraisal offering prohibition, is no longer in effect. NEPA requires agencies to prepare a supplemental EIS when “[t]here are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or impacts.”<sup>366</sup> Congressional actions constitute new circumstance that trigger the duty to prepare a supplemental EIS.<sup>367</sup> The failure to address this significant change is important because it removes the primary justification provided for the limited interstate shipment policy and warranted further discussion in the FEIS.

The timber economics analysis rests on the presumption that “[u]nder current Congressional direction [ ] no timber sale in the Alaska region shall be advertised if the indicated rate is deficit.”<sup>368</sup> The FEIS states that “[t]he limited interstate shipment policy increases the likelihood that timber sales in parts of the Tongass National Forest will have a positive appraisal under current market conditions” and “enhances opportunities for local supply to manufacturers who depend on Tongass timber by increasing the probability that sales will appraise positive.”<sup>369</sup> But now the Tongass National Forest, like every other National Forest, can offer deficit sales. As the Forest Service points out, there is no mandate to generate positive federal revenues from the timber sales program.<sup>370</sup> Similarly, there is no mandate for the Forest Service to design sales for the purpose of sustaining sectors of the timber economy that process lower value species and send the high value logs away unprocessed to generate profit somewhere else.

Longstanding federal policy on timber supply for local use provides more reasonable guidance. Federal regulations provide that exports and interstate shipments require a separate approval process because the timber sales from public lands are for “local use” and the restrictions on interstate shipments and foreign exports are “necessary to ensure

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<sup>365</sup> See *Hughes River Watershed Council*, 81 F.3d at 446; *Johnston v. Davis*, 698 F.2d 1088, 1095 (10<sup>th</sup> Cir. 1983).

<sup>366</sup> 40 C.F.R. § 1502.9(c)(1)(ii); see also *Sierra Club v. Froehlke*, 816 F.2d 205, 210 (5<sup>th</sup> Cir. 1987)(adding that “the new circumstance must present a seriously different picture of the environmental impact of the proposed project from what was previously envisioned”).

<sup>367</sup> *Alaska Wilderness Recreation and Tourism Association v. Morrison*, 67 F.3d 723 (9<sup>th</sup> Cir. 1995).

<sup>368</sup> Tilley, J., 2009. Logjam FEIS Timber Economics Report, Issue 3. Tongass National Forest, Thorne Bay Ranger District. Prince of Wales Island, Alaska.

<sup>369</sup> Logjam FEIS at 3-81.

<sup>370</sup> *Id.*, Appx. B at B-8.

the development and continued existence of adequate wood processing capacity in Alaska.”<sup>371</sup>

The primary reason for Forest Service policies that undermine the local use purpose of the federal timber sales program has been the positive appraisal requirement.<sup>372</sup> Because this provision is no longer in effect, the purported reason for circumventing federal regulations with policies that grant prior approval to limited out-of-state shipments and exports are no longer valid. NEPA required that the Forest Service discuss this change – particularly in the context of this project because of the Tongass timber sales program disproportionately targets VCUs with high volumes of cedar for foreign export and interstate shipment. The failure to consider legislative changes that significantly affect available timber supply clearly violates NEPA in this case because of the twin failures of relying on inaccurate information and because the Forest Service failed to consider alternatives that would have minimized the disproportionate take of cedar and high volume old growth.<sup>373</sup>

*e. The Forest Service's Export Policies Violate the Forest Plan*

TLMP standards and guidelines require the Forest Service to manage wood products for “quality sawtimber material and other merchantable wood products” and “[r]equire utilization and optimum feasible use of wood material” and “[p]romote the use of wood for its highest value product commensurate with present and anticipated supply and demand.”<sup>374</sup> As discussed in the previous sections, the Forest Service has failed to meet these directives by designing a sale primarily for large-scale cedar export rather than for local value added processing.

**C. Cost Disclosures**

In our comments on the DEIS, we requested a detailed public investment analysis that discloses the full public cost associated with administering this project. We further requested a more thorough analysis of eco-system services. These issues are significant because the economic analysis failed to account for both the direct public expenditures associated with this project and the external costs to other forest resource users.

*1. The FEIS Fails to Use Accurate Public Investment Expenditures and Disclose Actual Public Costs*

NFMA requires the Forest Service to disclose in an EIS the economic effects of alternatives, include agency and public costs using procedures specified in the CEQ regulations that implement NEPA.<sup>375</sup> NEPA also requires the Forest Service to “ensure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements” and explain the methodologies and provide sources.<sup>376</sup>

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<sup>371</sup> Organic Administration Act of June 4, 1897, Ch. 2, 30 Stat. 34, 35 (currently 16 U.S.C. §§ 473-475, 477-482, 551); 36 C.F.R. § 223.201.

<sup>372</sup> Castillo, D., 2007. Timber Sale Appraisals and Limited Interstate Shipments of Unprocessed Sitka Spruce and Western Hemlock Timber. USDA Forest Service, Alaska Region, Juneau, AK: March 13, 2007; Bschor, D.E., 2007. Limited Interstate Shipments of Unprocessed Sitka Spruce and Western Hemlock Timber. USDA Forest Service, Juneau, AK, March 14, 2007..

<sup>373</sup> See, e.g. *Alaska Wilderness Recreation and Tourism Association v. Morrison*, 67 F.3d 723 (9<sup>th</sup> Cir. 1995).

<sup>374</sup> 2008 TLMP Amendment at 4-74.

<sup>375</sup> 36 C.F.R. § 219.12(g); 40 C.F.R. §§ 1502.14, 1502.16.

<sup>376</sup> 40 C.F.R. § 1502.24.

The absence of accurate economic information can impair the assessment of adverse environmental effects.<sup>377</sup>

a. The Forest Service Needs to Update and Disclose Sale Administration Costs and Violates NEPA and Forest Service Direction Because of the Incomplete Financial Efficiency Analysis

The financial efficiency analysis is to compare anticipated costs and revenues that are part of Forest Service monetary transactions.<sup>378</sup> In our TLMP appeal and in the TWS appeal incorporated by reference here, we pointed out that the Forest Service had not provided any documentation or support for the assumption that agency timber sale program costs amounted to \$101/MBF. This is the public cost disclosed for the Logjam project.<sup>379</sup> The only known basis for this figure comes from a deposition that is more than ten years old. However, Exhibit D to the TWS TLMP appeals shows that administrative costs were at least ten times higher from 2001 to 2006 and jumped to \$2,741/MBF in 2007. The misleading disclosure of these costs in the FEIS and the inability to explain this inconsistency or to provide support for the agency's calculations violate NEPA.

In response to this concern, the Logjam FEIS explains that:

NEPA requires the disclosure of effects on the human environment and not the administrative costs of managing timber sale projects. The financial costs provided in Financial Efficiency Analysis in Table 36 are estimated administrative expenditures and are not factored into an economic justification of the project. Unlike socio-economic impacts considered in the Logjam FEIS, administrative costs do not have impacts on the larger public the way the jobs created by timber sales do.

The costs displayed in the comments include total expenditures by the Forest Service in various categories, derived from tables of expenditures by budget line item (BLI) from Tongass National Forest monitoring reports, 1998-2003. Although total expenditures by BLI include on-the-ground costs of timber sale planning, sale preparation, engineering support, and sale administration, timber sale costs to the Forest Service constitute only a portion of the various BLI totals. The expenditures in a BLI are the expenditures for the entire National Forest in a given category in a given year, and cannot be attributed to specific projects. As outlined in the Declaration of Forrest Cole lodged with the District Court in *NRDC v. Forest Service*, (Case No. J04-010CV (JKS) Decision Document #838) the timber sale process is a multiple year process and there is no expectation that expenditures and actual harvest will occur in the same year.<sup>380</sup>

The Forest Service's response to the cost benefit/economic efficiency analysis comments is wrong and inadequate, in violation of the National Environmental Policy Act (NEPA) and Forest Service's direction.<sup>381</sup> The Forest Service must compare the public money it will

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<sup>377</sup> *Natural Resources Defense Council*, 421 F.3d at 811.

<sup>378</sup> FSH 2409.18.

<sup>379</sup> Tilley, J., 2009. Logjam FEIS Timber Economics Report: Issue 3. Thorne Bay Ranger District, Prince of Wales Island, Alaska.

<sup>380</sup> Logjam FEIS, Appx. B at B-8.

<sup>381</sup> The Logjam timber sale project is not the only sale or appeal where cost benefit issues have been raised or litigated. By reference we incorporate documents from several specific previous instances in which these issues have been raised: (1) the Three Mile timber sale appeal comments of the Sierra Club, the Sitka Conservation Society, and the Natural Resources Defense Council; (2) the Three Mile Timber Sale Project litigation complaint and opening brief documents filed by the Organized Village Of Kake, Southeast Alaska Conservation Council, Natural Resources Defense Council, Sierra Club, The Wilderness Society, and Center For Biological Diversity; and (3) the complaint and the plaintiff's summary judgment and reply briefs in the District Court proceedings for the *NRDC vs. Forest Service* litigation, U.S. Dist Ct., D Alaska, *Case No. J04-010 CV (JKS)*; (3) the numerous arguments made in our administrative appeals of the 2008 TLMP Amendment, particularly pages 41 – 56 of The Wilderness Society's appeal.

spend administering the project with the prospective returns to the agency. We recognize that the Forest Service is not required to make money through the project, but it must provide enough information to disclose to the public a comparison of “estimated Forest Service expenditures with estimated financial revenues.”<sup>382</sup> This process enables the decision maker and the public to gain some understanding of “the future financial position of the program if the project is implemented.”<sup>383</sup>

This comparison of public costs and returns, called a Financial Efficiency Analysis, or a Cost Benefit Analysis, is required by the Forest Service Handbook and by NEPA.<sup>384</sup> Administrative costs comprise part of the project’s economic impacts to the human environment.

The Logjam FEIS economic efficiency analysis does not contain an accurate and complete discussion or estimation of the public costs incurred by the Forest Service in administering this project. The average administrative cost figures that are supplied in that declaration are out of date, misleading, and inaccurate. Supervisor Cole’s cost number of \$101.00 per mbf is an estimate that has been in use since the 1990’s.<sup>385</sup> Supervisor Cole was specific in declaring that the \$101.00 per mbf “figures do not purport to state the administrative costs of any particular sale”. The document also reports that this administrative cost estimate figure has been used on numerous timber sales. The declaration states, in part, that:

Region 10 continues to use the \$101/mbf figure for its budget requests and our experience is that we do not run of money for the various cost centers preparing and administering our base timber production goals. Informal evaluations after the 1999 Monitoring report have not caused us to change the use of the \$101/mbf figure.

...

5. Those average figures for the four cost centers are \$41/mbf for analysis, \$23/mbf for sale preparation, \$9/mbf for sale administration and \$28/mbf for engineering support, for a total of 101 mbf.

...

7. The budget allocation figures were developed for use in outyear budget planning, but the Tongass National Forest has used the figures in other contexts, including: the 2003 Supplemental EIS for the revised Tongass Land Management Plan, several site-specific timber sale project EISs, briefings, budgetary related requests for information, and development of the yearly Tongass Ten-year Timber Sale Schedule.

...

Region 10 projects for administrative costs for timber sales. The figures do not purport to state the administrative costs of any particular sale.

The \$101.00 per mbf cost figure is misleading and inaccurate, because it underestimates timber sale costs at the individual timber sale project level and also at the

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<sup>382</sup> FSH § 2409.18\_30.

<sup>383</sup> FSH § 2409.18\_30.

<sup>384</sup> See Forest Service Handbook §§ 2409.18\_20 at 5-6, 2409.18\_10 at 10, 2409.18\_30 at 7; 40 C.F.R. § 1508.8(b) (“Effects includes ecological . . . aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.”); see also *Hughes River Watershed Conservancy v. Glickman*, 81 F.3d 437, 446 (4th Cir. 1996) (stating that “NEPA requires agencies to balance a project’s economic benefits against its adverse environmental effects.”).

<sup>385</sup> Plaintiff’s Reply to Federal Defendants’ Opposition Brief on Count IV, Case No. J04-010 CV (JKS)(NRDC v. U.S. Forest Serv.).

forest plan level. The reasons for this are fully elaborated in the appeal filed by SCS et.al of the 2008 Tongass Land Management Plan (TLMP) amendment, attached to this appeal. That appeal, at pages 105-107, explains how:

The [TLMP] DEIS fails to reveal the true cost of the Tongass timber sale program. As a result a true balancing of benefits and costs is not possible. Every year the Forest Service spends millions of dollars planning and offering timber sales on the Tongass National Forest (See SEACC "Taxpayer Losses and Missed Opportunities: How Logging and Road Building in the Tongass National Forest Costs Taxpayers Millions, 2003.) Failing to give an accurate accounting of the costs associated with the timber program prevents the public and the decision maker from assessing the worth of the timber program. When weighing benefits against the impacts to the Federal Treasury, the impacts to the environment and with the loss of benefits that derive from the un-cut forest accurate costs must be revealed. Independent audits have shown the annual losses associated with the Tongass timber program to be staggering, particularly when compared with output. The table below shows recent losses as derived from Forest Service data (See "Tongass Timber Truths" Taxpayer For common Sense 2005 and Excel Spreadsheet "Cut and Sold Graphs and Tables" 2006).

Year	2006	2005	2004	2003	2002	2001
<b>Loss in Million</b> \$	37.7	44.7	47.2	41.5	34.9	35.5
<b>Logged in</b> mmbf	43	50	46	51	34	48

Balancing costs and benefits is a central function of a Forest Plan. Every DEIS alternative has a display of the benefits that are expected to be derived from the level of timber harvest associated with it. Without an accurate corresponding display of costs and harms, informed decision making is not possible. It is also misleading to the reviewing public. When analyzing individual timber sales the Forest Service has been relying on erroneous and misleading information in their cost benefit analysis, specifically a cost per board foot estimate that seriously underestimates the expenditures necessary for carrying out timber sale projects. The Forest Plan Amendment's DEIS repeats the use of this information with the same result, the production of a skewed and faulty analysis of the costs needed to implement the timber sale program. Part of the faulty analysis lies in the fact that many planned timber sale projects are never offered, and many more, if offered, never receive a bid. Yet the cost figures the Forest Service puts forward is a per board foot cost estimate for timber harvest output that does not account for the planning and offering of sales that are never logged. This figure, derived from budget allocations, assumes that everything being planned will be offered and cut. Furthermore, the \$101.00 per mbf figure is based on an... (out dated) estimate that has been in use since the 1990's. (See "Plaintiff's Reply to Federal Defendants' Opposition Brief on Count IV" Case No. J04-010 CV (JKS), NRDC vs. The Forest Service, which we incorporate in full here by reference). As shown by any examination of expenditures in relation to outputs over the last decade, this number wildly under estimates the cost associated with "getting the cut out."

Pages 16 through 18 of the complaint lodged in *NRDC vs. U.S. Forest Service* explains how the cost benefit/economic efficiency analysis is flawed at both the project and forest plan level:

Public Investment

- 82. Each year, the Forest Service spends tens of millions of dollars administering the Tongass timber sale program.
- 83. The Forest Service keeps detailed records of the money it shows as spent each year on the timber sale program. Some of that information is made available to the public as part of the annual monitoring reports.

84. The Forest Service reported that in FY 1999 it spent \$19,842,546 on "timber management," \$7,685,131 on "timber road construction," more than \$5 million on "general administration," and more than \$3 million on "ecosystem planning, inventorying, and monitoring."
85. The Forest Service reported that in FY 2000 it spent \$14,524,473 on "timber management," more than \$3 million each on "road construction" and "road maintenance, nearly \$4 million on "general administration," and more than \$1 million on "ecosystem planning, inventorying, and monitoring."
86. The Forest Service reported that in FY 2001 it spent \$21,192,221 on "timber management," more than \$13 million on "roads" and more than \$2 million on "ecosystem planning, inventorying, and monitoring."
87. The Forest Service reported that in FY 2002 it spent \$17,923,470 on "timber management," more than \$15 million on "roads" and more than \$3 million on "ecosystem planning, inventorying, and monitoring."
88. In FY 1999, income to the Forest Service for timber sold from the Tongass totaled approximately \$5,456,000. In FY 2000, income from timber sold from the Tongass totaled approximately \$5,582,000. That number declined to approximately \$1,855,000 in FY 2001 and approximately \$1,242,000 in FY 2002. In FY 2003, income to the Forest Service for timber sold from the Tongass totaled approximately \$1,464,000.
89. These costs, and the associated losses, were not discussed during the NEPA process for the timber sales challenged in this complaint.
90. In the Sea Level, Chasina, Crane and Rowan Mountain, and Finger Mountain EISs, the Forest Service did not disclose the costs it would incur in preparing and administering the sale.
91. In the FEISs in which the Forest Service does undertake an evaluation of the "public investment" necessary to administer the sale, the analysis is incomplete and misleading, and does not accurately reflect the actual cost.
92. The FEISs do not present the costs borne by the Forest Service in a way that allows the public or the decision maker to understand the total expense that would be borne by the Forest Service for each alternative. Nor do they show those costs in conjunction with the predicted revenues. That failure prevents the public and the decision maker from determining that the alternatives will result in significant losses for the Forest Service and taxpayers."

In his declaration Forrest Cole maintains that the monitoring reports on timber sale costs did not change the use of the Region 10 figure. Since the drafting of the above complaint, all of the new timber sale projects that have been put through the NEPA process have used the same Region 10 figure for their economic efficiency analysis and therefore have not given an accurate cost benefit analysis as required by NEPA and Forest Service directions. These sales include this project. This violates NEPA because it does not provide the public and the decision makers with the best available data and the data provided presented an inaccurate cost benefit/economic efficiency analysis.

Consequently, the Logjam FEIS and ROD do not comply with the Forest Service Handbook or NEPA's requirements to include the economic effects and impacts to the human environment in its cost benefit analysis. This failure is egregious given the central role played by economics in the decision making process for this project.

**b. The Forest Service Needs to Disclose and Account for the Public Road Subsidy**

The most egregious public subsidy that the FEIS failed to disclose was the cost of road construction. In our comments on the DEIS, we pointed out that it was necessary for the Forest Service to include the estimated cost of building, reconstructing and maintaining

roads for the selected alternative as an administrative cost rather than a logging cost.<sup>386</sup> But the FEIS disclosed neither the cost of this significant public subsidy nor the timber economics section disclose the pervasiveness of the practice. Instead, the figure used in the estimate of costs and revenues only accounts for engineering support and not road construction.<sup>387</sup> As a result, the figures for public administrative costs and for logging costs provided in the FEIS are misleading.<sup>388</sup>

These costs are significant and must be included to fully inform a decision to proceed with this project. With estimated road constructions costs of \$39 per MBF, the Forest Service has underestimated public costs by nearly \$3 million, resulting in a public project cost of well over \$9 million instead of the \$6.5 million disclosed in the FEIS (based on the erroneous \$101/mbf figure).<sup>389</sup> The FEIS should have also disclosed that the public is likely to bear the increased haul costs of nearly \$1 million associated with the mitigation of acid rock drainage.<sup>390</sup> These costs are misplaced in the financial efficiency analysis for the timber purchaser rather than properly categorized as costs borne by the public.

In our comments on the DEIS, we provided information from actual road contracts and bid notices demonstrating that a large portion of the total Tongass timber subsidy comes from taxpayer funded road construction.<sup>391</sup> The table we provided in the DEIS comments showed that the public paid nearly \$13 million to provide pre-roading for ten timber projects between 2003 and 2006.<sup>392</sup> We incorporate that table by reference and reinsert portions of it here to illustrate the recent road subsidies provided to the likely purchaser of this project, Viking Lumber:

<b>Sale Name</b>	<b>Date of Sale</b>	<b>Purchaser</b>	<b>Road Cost</b>	<b>Sale Cost</b>	<b>Loss to Taxpayer</b>
Summore Change	1/22/03	Viking	\$2,539,000	\$443,524	\$2,095,476
Fusion	5/26/04	Viking	\$1,405,853	\$277,772	\$1,128,081
Kogish-Shinaku	1/14/05	Viking	\$875,923	\$96,001	\$779,922
Finger	9/3/04	Viking	\$680,991	\$67,561	\$613,430

<sup>386</sup> Greenpeace et al., 2008. Comments on the Logjam DEIS at 51.

<sup>387</sup> Tilley, J., 2009. Logjam FEIS Timber Economics Report: Issue 3. Thorne Bay Ranger District, Prince of Wales Island, Alaska at Tables 5, 7.

<sup>388</sup> Logjam FEIS at 3-80; 3-85.

<sup>389</sup> Logjam FEIS at 3-85.

<sup>390</sup> *Id.* at 3-81.

<sup>391</sup> Greenpeace et al., 2008. Comments on the Logjam DEIS at 51.

<sup>392</sup> *Id.* at 52.

Point					
Luc Lac II	9/1/05	Viking	\$224,627	\$121,817	\$102,810
Lindenberg	12/21/05	Viking	\$391,000	\$231,295	\$159,705

The above table provides a fairly comprehensive list of sales purchased by Viking Lumber in recent years and demonstrates a substantial public subsidy for this business. We are not aware of any recent project other than a small sale that did not or will not entail pre-roading. Other projects include extensive publicly funded roadwork done on old logging roads under maintenance contracts for the purpose of facilitating planned timber projects at public expense. In many cases, the preparatory roadwork violates NEPA by committing resources to a timber sale project prior to the final decision stage for the timber sale.<sup>393</sup> It is almost certain that a public works, pre-roading contract will be put out for bid. As noted explicitly in our comments on the DEIS, almost all the large timber sales over the last 6 years have received pre-roading subsidies.

But the FEIS characterizes the road costs for this project as part of the total logging costs which means that the analysis assumes that the successful bidder will pay for all of the road costs. As noted above, however, is not only uncertain, it is highly unlikely. By deleting the parts of the road costs that can be subsidized, the logging costs go down but the public costs go up. Subsidizing road construction to make timber sales positive and more profitable for the industry has been the Forest Service's usual practice for the last 6 years. In the 2008 TLMP FEIS, the Forest Service deferred analysis of pre-roading costs to the project level but the Logjam FEIS did not include the requisite analysis despite our request for clarification.<sup>394</sup>

The response to our concern was as follows:

Pre-roading is a process whereby roads are constructed into a NEPA-cleared project area prior to and separate from a timber sale or other resource activity. The intent of pre-roading is to develop or expand the transportation network without requiring one resource to carry the entire burden of road construction costs. Pre-roading is an administrative decision that requires funding from Congress.<sup>395</sup>

NEPA requires that the Forest Service respond to comments in specific ways, including making factual corrections or supplementing or modifying analyses.<sup>396</sup> If the Forest Service does not make a corrective response, it must at least “explain why the comments do not warrant further agency response, citing the sources, authorities or reasons which support the agency’s position.”<sup>397</sup>

The Logjam FEIS fails this standard. There is no support for the proposition that the Forest Service does not know at this time whether it will use public works funds for timber extraction-related road construction. Public works road contracting for timber projects is de facto agency procedure. The FEIS acknowledges this fact: “[a]ll costs associated with road construction and reconstruction necessary for the timber sale ... are the responsibility

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<sup>393</sup> These projects have included the Kuiu, Overlook, Logjam, Francis Cove, Rockfish, S.W. Neets and Baht timber sales.

<sup>394</sup> 2008 TLMP Amendment FEIS at H-106.

<sup>395</sup> Logjam FEIS, Appx. B at B-66.

<sup>396</sup> 40 C.F.R. § 1503.4.

<sup>397</sup> 40 C.F.R. § 1503.4.

of the purchaser, *or, as in the past have been funded by money appropriated especially for this purpose by Congress.*<sup>398</sup> In addition to the sales listed in the table above and in the more complete table in our comments, there have been recent instances of pre-roading for timber projects. The Forest Service has expended \$1,154,054 on pre-roading for the Skipping Cow project and \$2,581,130 on pre-roading for another project that has not even received a bid.<sup>399</sup> The response failed to provide even one single example to support the proposition that road costs associated with this project will be borne by the timber sale purchaser.

The costs of road building for this project should have been included in the cost benefit/economic efficiency analysis. By failing to accurately assign road costs to the entity actually making the expenditure, the FEIS was misleading, inaccurate and further failed to provide a corrective or supplemental response to our comments. The 2008 TLMP Amendment deferred analysis to the project level and that analysis was not presented in the project-level FEIS. There errors violated NEPA.<sup>400</sup>

### c. Conclusions

This project cannot proceed pursuant to a cost analysis that compounds the inflated market scenarios by grossly underestimating the public cost associated with the timber sales program and this project in particular. Appellants consider the analysis provided in the FEIS to be extremely misleading as to a significant issue, violating NEPA.

#### *2. Failure to Adequately Assess Eco-system Benefits*

In our appeal of the TLMP and throughout our comments on the DEIS, we have urged the Forest Service to evaluate how implementation of this project will impose real costs, monetary and otherwise, on other forest values. The Forest Service's national website identifies ecosystem services as an important issue:

When our forests are undervalued, they are increasingly susceptible to development pressures and conversion. Recognizing forest ecosystems as natural assets with economic and social value can help promote conservation and more responsible decision making.<sup>401</sup>

When a cost-benefit analysis is relevant to choices between environmentally different alternatives, NEPA requires the agency to also discuss "the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities."<sup>402</sup> This directive implements NEPA's requirement to "identify and develop methods and procedures ... which will ensure that unquantified environmental amenities and values [are] given appropriate consideration in decision-making along with economic and technical considerations."<sup>403</sup> The Forest Service need not necessarily monetize all these benefits, but must include them where relevant and important to a decision.<sup>404</sup>

NFMA and its planning regulations similarly require appropriate consideration of non-market goods and services when evaluating alternatives. 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

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<sup>398</sup> Logjam FEIS, Appx. B at B-69.

<sup>399</sup> Mark Rorick e-mail.

<sup>400</sup> 40 C.F.R. § 1502.24; 40 C.F.R. § 1503.4.

<sup>401</sup> See <http://www.fs.fed.us>.

<sup>402</sup> 40 C.F.R. § 1502.23.

<sup>403</sup> 42 U.S.C. § 4332(2)(B).

<sup>404</sup> 40 C.F.R. § 1502.23.

forests] consistent with the requirements of ecological sustainability.”<sup>405</sup> Internal Forest Service regulations direct the completion of an economic efficiency analysis when “substantial non-market costs ... are anticipated as a result of the project.”<sup>406</sup>

We maintain that a more dedicated effort to quantify ecosystem benefits was necessary. But an even bigger problem was that this FEIS did not make any effort to weigh these values at all or disclose real costs to fish, wildlife and recreational opportunities. The cost of producing a good or service is not simply a matter of the priced inputs into NEAT\_R. Rather, we explained that if environmental or other resource costs are not factored in to the economic analysis, monetized or not, the financial efficiency analysis misrepresents the true value of resources used to produce the timber and consequently both the public and the decisionmaker lack significant information.

The FEIS simply failed to consider the costs to other resources and resource values and provided the illusion that it would be an economic loss if this project never happened:

No harvest would occur in the project area. There would be no additional contribution to the local or regional Southeast Alaska economy, and there would be no additional support to the local or regional forest products industry employment from this project area timber-related employment.<sup>407</sup>

This was misleading and failed to account for the tangible economic and ecological benefits of the no-action alternative – more salmon would spawn, more deer winter range would be preserved and more visitors would be likely to return for remote recreation experiences unspoiled by disturbances associated with logging.

## **E. Conclusions**

The timber economics section and explanation in Appendix A grossly mislead the public and the decisionmaker as to the purported need for this sale, the purported benefits of this project and fail to disclose the inadequacies of the Forest Service’s methodology or consider updated information such as the rapidly increasing decline of timber markets and the repeal of the deficit appraisal prohibition. These failures require a reversal of the ROD and withdrawal of the FEIS. When information is so incomplete or misleading so as to preclude an informed decision, revision is necessary to rectify the deficiencies.<sup>408</sup>

## **VI. Soils**

### **A. Helicopter Logging - The FEIS Failed to Discuss the Risks**

This section pertains to risk disclosures and helicopter logging. The Forest Plan removed slope gradients of 72% or more from the timber base because of high risks but leaves an exception for approval of steeper slope logging on a case-by-case basis.<sup>409</sup> This project authorizes timber extraction on 119.5 acres where slopes exceed the Forest Plan’s 72% threshold.<sup>410</sup> The FEIS asserts that partial cutting in helicopter units will minimize risks to slope stability.<sup>411</sup>

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<sup>405</sup> 36 C.F.R. § 219.21.

<sup>406</sup> FSH 2409.18.

<sup>407</sup> Logjam FEIS at 3-86.

<sup>408</sup> See, e.g. *Animal Def. Council v. Hodel* 840 F.2d 1432, 1439 (9<sup>th</sup> Cir. 1988).

<sup>409</sup> 2008 TLMP at 4-65.

<sup>410</sup> Logjam FEIS at 3-115.

<sup>411</sup> *Id.*

NEPA requires that an EIS discuss uncertainties pertaining to the environmental risks of a proposed action.<sup>412</sup> There has been considerable landslide research done in recent years that is specific to helicopter logging and which has updated the studies the FEIS relied upon. This includes research and assessment by former Forest Service scientist Doug Swanston.<sup>413</sup> The findings indicate that selective helicopter harvesting may reduce the number and severity of landslides but do not eliminate those risks as suggested in the FEIS. Further, Swanston indicates that effectiveness of identifying high risk areas is dubious and that even 25% helicopter harvests increased the potential for landslide initiation:

Apparently, Alcan Forest Products hopes that helicopter logging and selective harvest techniques will assure stability by localized cutting at stable sites, reduction in site disturbance and maintenance of a viable root anchoring and reinforcing network across the slope. The controlling variables are the total area maintained in forest cover, the selective techniques used, (e.g. group selection or single tree selection), the percentage of timber removed, the cleanliness of the yarding operation and the ability of the person or persons marking trees, laying out units or performing the logging to recognize and avoid areas of potential instability. There is very little quantitative information to demonstrate the real value of this approach. The in-exact nature of these variables and their application virtually assures that even low levels of helicopter logging and selective harvest could mis-identify sites and cause losses of the anchoring and reinforcing effect of root systems associated with a loss of stability. A recent comparison of landslide rates following helicopter and conventional, cable-based clear-cut logging in the Southwest Coastal Mountains of British Columbia indicate that total landslide rates are not significantly different following helicopter and conventional logging, although there is a slight decrease in rates for helicopter logging due to elimination of road construction. (Robers, Ward and Rollerson, 2004). No matter what technique is used, helicopter logging and selective harvest are unlikely to assure complete stability and retention of viable root-anchoring system across the slope, particularly if groups are single trees are selected in areas of critical gradient or ground water concentration where landslides commonly initiate. Recent data from Portage Bay indicate significant increases in maximum soil saturation following 100%, 75% and 25% helicopter harvest (Johnson, A.C., Edwards, R.T. and Erhardt R. 2006).

The paragraph continues on to explain that the maximum soil saturation increases landslide risks.<sup>414</sup> The study also indicates that risk increases with elevation and nearly all of the roadless units – helicopter and clearcut – are well above 500 feet.<sup>415</sup> The EPA also weighed in on the risk of steep slope logging and agreed with Swanston's point that it was difficult to assess soil stability risks. The EPA has explicitly recommended that the Forest Service "[p]rohibit harvest from slopes greater than 72%, even if an on-site slope stability analysis has been conducted."<sup>416</sup>

The FEIS asserts that two-aged prescriptions eliminate the need for windfirming treatments.<sup>417</sup> But Swanston says that selective logging opens up non wind-firm cut boundaries, timber blocks and single trees to blowdown, increasing landslide risks.<sup>418</sup> Windthrow risks are already moderate or high for all but six of the cutting units.<sup>419</sup> The

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<sup>412</sup> *Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark*, 720 F.2d 1475, 1479 (9<sup>th</sup> Cir. 1983).

<sup>413</sup> Exhibit 51. Swanston, D.N., 2006. Assessment of Landslide Risk to the Urban Corridor Along Mitkof Highway from Planned Logging of Mental Health Trust Lands. June 2006.

<sup>414</sup> Swanston, D.N. 2006.

<sup>415</sup> *Id.*

<sup>416</sup> Navy FEIS, Appx. B. at B-53.

<sup>417</sup> Logjam FEIS at 3-168.

<sup>418</sup> Swanston, D.N. 2006.

<sup>419</sup> Sheets, R.M., 2009. Logjam TS DEIS, Timber and Vegetation Resource Report. Thorne Bay Ranger District, Tongass National Forest. Prince of Wales Island, Alaska.

Forest Service needed to disclose that steep slope logging of any prescription is high risk, particularly given the sensitive condition of project area watersheds. The failure to discuss these risks violated NEPA.<sup>420</sup>

## VII. Fisheries

We have included our discussion of the fisheries section in section III of this appeal (Significant Issue 1: Aquatic Habitat) because the Forest Service should have incorporated the analysis of fisheries impacts into the analysis of aquatic habitat for the sake of clarity.

## IX. Silviculture

In this section we first explain that the Forest Supervisor failed to provide adequate reasons to justify the clearcut prescriptions. We proceed to discuss cedar decline as the Forest Service needs to begin to consider cedar decline as a significant issue in planning timber projects and this project particularly illustrates the inability of timber sales planners to incorporate the work of research scientists into project planning.

### A. *The Justifications for Clearcutting are Inadequate*

The selected alternative prescribes clearcutting for 2,263 acres.<sup>421</sup> In our comments on the DEIS, we noted a preference for light touch partial cuts but expressed concerns about the analysis of partial cut prescriptions and risks associated with the 25% and 50% removal levels.<sup>422</sup>

NFMA provides that “the harvesting system to be used [cannot be] selected primarily because it will give the greatest dollar return or the greatest unit output of timber.”<sup>423</sup> This provision imposes substantial restrictions on clearcutting. The Forest Service may only clearcut an area when “it is determined that it is the optimum method” to meet the objectives and requirements of the TLMP and where “such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, esthetic resources, and the regeneration of the timber resource.”<sup>424</sup>

This means that clearcutting must be used “only in exceptional circumstances” and when these exceptional circumstances exist, the Forest Service must “proceed cautiously” and “only after a close examination of the effects that [clearcutting] will have on other forest resources.”<sup>425</sup> The justification provided for clearcut prescriptions in the project area was “to preclude or minimize the occurrence of potentially adverse impacts from hemlock dwarf mistletoe or other insect or disease infestations, logging damage and windthrow.”<sup>426</sup> This FEIS failed to adequately consider the effects of clearcutting on other forest resources or provide a reasonable justification for clearcutting.

Critics of clearcutting have identified a laundry list of concerns, including: (1) creation of young-growth forests that are poor habitat for wildlife and understory plant species; (2) reduction of plant biodiversity; (3) diminishment of old growth stand structural

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<sup>420</sup> 40 C.F.R. § 1502.22.

<sup>421</sup> Logjam FEIS at 3-164.

<sup>422</sup> Greenpeace et al comments at 49; SCS Comments at Section VIII.D.

<sup>423</sup> 16 U.S.C. § 1604(g)(3)(E)(iv).

<sup>424</sup> 16 U.S.C. § 1604(g)(3)(F)(i), (v).

<sup>425</sup> *Sierra Club v. Thomas*, 105 F.3d 248, 251 (6<sup>th</sup> Cir. 1998); *Ohio Forestry Ass’n v. Sierra Club*, 523 U.S. 726 (1998).

<sup>426</sup> Logjam FEIS at 3-162.

components; (4) reduction of slope stability, increased landslide activity, accelerated erosion and accelerated sediment production all leading to degraded fish habitat.<sup>427</sup>

Windthrow risks do not justify the choice to clearcut the proposed scale of acreage in light of the impacts to other forest resources. If anything, clearcutting increases risks to remaining old-growth forests and patches from blowdown. Further, because hemlock and spruce stands are more susceptible to windthrow, this factor does not justify clearcutting units with a high cedar composition.<sup>428</sup> Materials in the TLMP planning record indicate that surveys of project area timber sale units provide ample evidence of windthrow around clearcuts:

We saw many examples of continuing blowdown along the margins of clearcuts. The forest exposed along the edge of a new cut contains many trees that have not been “trained” by wind-stress from early growth stages to endure occasional very strong gusts. Tall, valuable trees are often lost in this manner.<sup>429</sup>

The unit cards for this project verify the concern that implementation of project area clearcuts will exacerbate rather than ameliorate blowdown risks.

The windthrow rationale is also particularly disturbing in light of both the realized and projected climate change impacts. The Forest Service needs to acknowledge that increased wind disturbances require appropriate management now rather than adaptive management later. It is clear that climate change is affecting the intensity of storms in this area:

In the mid 1970s temperatures in Alaska coastal stations increased abruptly to the highest level of the 20<sup>th</sup> century; even the low period in the temperature cycle that followed was markedly warmer than any similar period in the instrument-based record. Storm frequency and intensity increased at the same time as the recent rise in temperature. The number of days with gale force winds in coastal locations more than doubled in the late 1970s compared to the previous two decades.<sup>430</sup>

The climate change experts cautioned that “[t]he dramatic increase in gale wind in coastal Alaska since the 1970s suggests that the risk of windthrow of trees will be much greater.”<sup>431</sup> The models used to assess windthrow risks are older and there is no indication of whether the documented increase in storm intensity or projected increased risks has resulted in an adjustment to the model.<sup>432</sup> The FEIS also does not disclose the known increase in storm intensity or the cumulative impacts of logging and increased storm intensity.

Further, using dwarf mistletoe as an excuse to proceed with clearcutting is not an “exceptional circumstance” that justifies the decision to proceed with clearcutting instead of light-touch partial harvest. Dwarf mistletoe is native to and an important ecological component of the Tongass that plays a role in nutrient cycling, influences stand structure, and provides nest sites and food sources for wildlife. Further, “[s]ubstantial reductions to

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<sup>427</sup> McClellan et al, 200. Alternatives to Clearcutting in the Old Growth Forests of Southeast Alaska: Study Plan and Establishment Report. Gen. Tech. Rpt. PNW-GTR-494. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 40 p.

<sup>428</sup> Sheets, R.M., 2009. Logjam TS DEIS, Timber and Vegetation Resource Report. Thorne Bay Ranger District, Tongass National Forest. Prince of Wales Island, Alaska at 12

<sup>429</sup> Carstensen, R. & B. Christensen, 2005 at 53.

<sup>430</sup> Weller and Anderson, 1998 at 27, 36 (explaining that the cause of more damaging winds is related to the warmer sea surface).

<sup>431</sup> Weller and Anderson, 1998 at 38-39.

<sup>432</sup> Logjam FEIS at 3-157.

timber are only associated with very high disease levels.”<sup>433</sup> The silviculturists report indicates that there are very few cutting units where dwarf mistletoe is a significant damaging agent.<sup>434</sup> It also indicates that dwarf mistletoe is primarily a problem for hemlock and a low risk in units with a heavy cedar component.<sup>435</sup>

If anything, the presence of dwarf mistletoe warrants partial cut prescriptions because there is no clear evidence that dwarf mistletoe is a significant problem in partially cut stands. Recent research shows that “partial cutting resulted in maintaining mistletoe levels at generally undamaging levels” and that “most young trees in [in partial cut stands] infected with mistletoe were advanced regeneration established before logging.”<sup>436</sup>

The primary reason the dwarf mistletoe is a problem for the Forest Service is not that it harms trees, but that it produces low quality timber and slows growth rates.<sup>437</sup> This is simply an economic justification disguised as a forest health issue and cannot justify the decision to proceed with clearcutting.

Finally, as discussed in more detail in the following section pertaining to red and yellow cedar, regeneration considerations do not support the clearcutting prescription.

In sum, the FEIS and ROD failed to establish a reasonable justification for proceeding with clearcutting and failed to adequately examine impacts to other forest resources in order to better inform the decision. The main reason that clearcuts were prescribed was solely to “give the greatest dollar return on the greatest unit output of timber” and violated NFMA.

## **B. Yellow and Red Cedar**

In our comments on the DEIS we addressed a number of concerns regarding yellow and red cedar. We requested that the FEIS address the high-grading of these species, requested a detailed consideration of yellow cedar decline and climate change, and noted that poor regeneration in logged areas was also a concern.<sup>438</sup> We recognize that the Forest Service is making efforts in the project area to address concerns with regeneration and that agency scientists are actively engaged in research on these topics. For these reasons, we are disappointed that the analysis in the FEIS and decision to proceed with so many units targeting cedar failed to take these issues into account.

The large volume of cedar take authorized by this decision and the location of the proposed extraction poses significant risks – especially to yellow cedar. An EIS needs to candidly disclose risks posed by a proposed action and inform the decision maker and the public of “the full range of responsible opinion.”<sup>439</sup> There are numerous uncertainties regarding climate change impacts to forest resources and the ability of cedar in particular to regenerate in the project area. The Forest Service need not address every uncertainty, but must at a minimum “acknowledge and respond to comments by outside parties that raise significant scientific uncertainties and reasonably support that such uncertainties exist.”<sup>440</sup>

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<sup>433</sup> Sheets, R.M., 2009. Logjam TS DEIS, Timber and Vegetation Resource Report. Thorne Bay Ranger District, Tongass National Forest. Prince of Wales Island, Alaska at 10.

<sup>434</sup> *Id.* at 6-8.

<sup>435</sup> *Id.* at 10.

<sup>436</sup> Carstensen, R. & B. Christensen, 2005 (available in TLMP planning record).

<sup>437</sup> See, e.g. Navy FEIS, Appx. B at B-111-113.

<sup>438</sup> Greenpeace et al, 2008. Comments on the Logjam DEIS at 49.

<sup>439</sup> *Seattle Audubon Society v. Moseley*, 798 F.Supp. 1473, 1479 (W.D. Wash. 1992).

<sup>440</sup> *Lands Council v. McNair*, 537 F.3d 981, 1001 (9<sup>th</sup> Cir. 2008).

The uncertainties about cedar regeneration and decline were not adequately addressed in the FEIS. As discussed below, there was little reference to important recent studies about cedar decline and no discussion of how these studies identified serious concerns pertaining to the cumulative impacts of continued cedar harvests in the project area in a rapidly changing climate. In short, this FEIS failed to meet NEPA's mandate to insure that information provide "[a]ccurate scientific analysis" or be of "high quality" or identify areas of significant uncertainty.<sup>441</sup>

### 1. Failure to Adequately Analyze Cedar Decline and Climate Change

In our comments on the DEIS we requested that the Forest Service accord special consideration to yellow-cedar decline.<sup>442</sup> The 2008 TLMP Amendment FEIS acknowledges that it is "one of the most widespread and important forest problems on the Tongass."<sup>443</sup> There are 38,500 acres of yellow cedar decline in the Thorne Bay Ranger District – an increase of 4,000 acres from the 2004 survey.<sup>444</sup>

The Forest Service should have discussed yellow-cedar decline more thoroughly and provided information from its most recent research. The FEIS notes that the decline occurs in open canopies with moist soils.<sup>445</sup> Recent research indicates that root freezing is the primary injury mechanism and the cause is exposure because of a reduced snow pack at low elevations caused by a warming climate.<sup>446</sup> The FEIS briefly discusses the pending development strategy for yellow cedar conservation but fails to explain how the extensive yellow cedar take from the project area fits into that strategy and ultimately defers responsibility to the 2008 TLMP ROD's statement that the "best course of action in light of uncertain but anticipated change will be done through maintaining mostly intact ecosystems."<sup>447</sup>

Because of the forest-wide significance of this issue and because of the extent of cedar decline in the project area, the Forest Service needed to take the most recent studies into account. The FEIS asserts that many of the cutting units occur in areas of adequate soil drainage where cedar decline is less likely to occur.<sup>448</sup> The FEIS should have disclosed that ongoing science pertaining to cedar conservation recommends that yellow cedar harvest be shifted to dead yellow-cedar forests.<sup>449</sup> This project, conversely, targets healthy yellow cedar forests.

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<sup>441</sup> 40 C.F.R. § 1500.1(b); 40 C.F.R. § 1500.2,9(a); *Izaak Walton League of America v. Marsh*, 655 F.2d 346, 377 (D.C. Cir. 1981).

<sup>442</sup> Greenpeace et al Comments on the Logjam DEIS at 49; SCS comments at Section VIII.

<sup>443</sup> 2008 TLMP Amendment FEIS at 3-120.

<sup>444</sup> Logjam FEIS at 3-158.

<sup>445</sup> *Id.*

<sup>446</sup> Hennon, P.E., D.V. D'Amore, D.T. Wittwer & J.P. Caouette, 2007. Yellow Cedar Decline: Conserving a Climate Sensitive Tree Species as Alaska Warms. Published in Deal, R.L., tech. ed. 2008. Integrated Restoration of forested ecosystems to achieve multiresource benefits: proceedings of the 2007 national silviculture workshop. Gen. Tech. Rep. PNW-GTR-733. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 306 p. at 239.

<sup>447</sup> Logjam FEIS at 3-159.

<sup>448</sup> Logjam FEIS, Appx. B at B-59.

<sup>449</sup> Hennon, P.E., D.V. D'Amore, D.T. Wittwer & J.P. Caouette, 2007. Yellow Cedar Decline: Conserving a Climate Sensitive Tree Species as Alaska Warms. Published in Deal, R.L., tech. ed. 2008. Integrated Restoration of forested ecosystems to achieve multiresource benefits: proceedings of the 2007 national silviculture workshop. Gen. Tech. Rep. PNW-GTR-733. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 306 p. at 239.

Further, the FEIS ignores the cumulative impacts of logging and cedar decline and simply says that yellow cedar decline will lead to diminished populations, “particularly considering the poor regeneration of the species.”<sup>450</sup> The FEIS also needed to evaluate the cumulative impacts of logging and climate change because logging can exacerbate cedar decline by creating canopy gaps. Cumulative impacts are:

The incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.<sup>451</sup>

The Forest Service should have reviewed the more recent information provided by its scientists explaining that canopy gaps create greater soil and air temperature fluctuations. This exacerbates the freeze/thaw cycle responsible for cedar decline:

Air and soil temperatures respond primarily to exposure. Open canopies provide inlets for solar radiation that warm vegetation and the soil surface and also allow more rapid loss of energy at night. Dense forest canopies intercept solar radiation by shading during warm periods and insulate the loss of energy during cold periods, thus creating buffered, less extreme temperature conditions. Soils located under open canopies warm more quickly in spring than the soils under dense canopies, as expressed by the rapid accumulation of soil degree days in the open canopy forest zones. The surface of these soils is also exposed to slightly colder night temperatures due to less insulation from the canopy.<sup>452</sup>

The cumulative impacts of a project that proposes to increase anthropogenic canopy gap formations and the updated research correlating cedar decline with climate change and projecting continued loss of suitable cedar habitat are far from remote and speculative. The EIS needed to address these significant risks and thus violated NEPA.<sup>453</sup>

## 2. *Failure to Adequately Discuss Regeneration*

In our comments we pointed out that poor regeneration of yellow cedar was one of our several major concerns. The 2008 TLMP amendment requires the Forest Service to monitor forest health and evaluate silvicultural prescriptions in light of future stand diversity, particularly overstory species such as yellow cedar.<sup>454</sup>

The FEIS states that under two-aged management, “natural regeneration would occur in the harvested stands in satisfactory amounts” but may limit regeneration of cedars.<sup>455</sup> For clearcuts, “the resulting tree regeneration is expected to be vigorous and representative of the approximate species mix of the former stand.”<sup>456</sup> The FEIS then indicates that measures designed to ensure cedar regeneration can be implemented at a later time without disclosing the uncertainty surrounding these mitigation measures.<sup>457</sup>

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<sup>450</sup> Logjam FEIS at 3-158.

<sup>451</sup> 40 C.F.R. § 1508.25(c)(3).

<sup>452</sup> D’Amore, D.V. & P.E. Hennon, 2006. Evaluation of soil saturation, soil chemistry and early spring and soil and air temperatures as risk factors in yellow cedar decline. USDA Forest Service, Pacific Northwest Research Station, Juneau, AK.

<sup>453</sup> See e.g. *Friends of the Earth v. Hall*, 693 F.Supp. 904, 926 (W.D. Wash. 1988)(explaining in detail the relationship between NEPA’s requirements and risks when there is considerable scientific research undermining assumptions made in an EIS).

<sup>454</sup> 2008 TLMP Amendment at 4-70-4-71; 4-14.

<sup>455</sup> Logjam FEIS at 3-166.

<sup>456</sup> *Id.*

<sup>457</sup> *Id.*, Appx. B at B-59.

The Forest Service's leading experts on cedar decline, however, have identified barriers to regeneration and indicate that further research is necessary.<sup>458</sup> They report that "[r]eproduction capacity is low, leading to poor natural regeneration in some areas" and "[y]ellow cedar does not regenerate as prolifically as other species in the region."<sup>459</sup> The experts indicate that the success of natural regeneration through leave trees, as suggested in the FEIS, is experimental and warrants further research.<sup>460</sup>

In fact, the FEIS clearly discloses that post-harvest species composition in regenerated stands demonstrates a species conversion to 88% hemlock, 7% spruce, 2% yellow cedar and 3% red cedar.<sup>461</sup> The cedar percentages dropped to .4% yellow cedar and 3.1% red cedar in a review of 2,396 acres of pre-commercially thinned stands that the Forest Service deems to be "the most reliable data available to determine the expected species composition of the future stand."<sup>462</sup> NEPA required the Forest Service to explain the inconsistency between its regeneration assumptions stated in the effects section with the very different results indicated by its own data.

Further, the Forest Service has identified deer browse as an impediment to cedar regeneration.<sup>463</sup> Recent deer-exclusion studies indicate that deer prefer cedar and can drastically impede red-cedar regeneration:

The likelihood that young, year-round palatable red cedars can escape deer browsing in an understory already severely depleted in resources for deer is understandably very limited. Our results indicate that any effort to restore red cedar generation in old-growth forest patches will need to achieve a significant reduction in deer abundance and maintain this reduction over a long period of time.<sup>464</sup>

The Logjam FEIS did respond to this concern, but only in the context of two-aged management.<sup>465</sup> The analysis of this issue was incomplete because the Forest Service omitted a discussion of the impacts of browse in the clearcut units that comprise the majority of the prescriptions.

The experts also indicate that the Forest Service needs to consider climate change impacts in managing yellow cedar:

It will not be sufficient to manage yellow-cedar where it is currently healthy because this approach would not account for climate warming. Managing this long-lived tree species requires predictive models that reveal where the decline problem is expected to occur in the next few centuries. Scenarios indicate that the climate may shift faster than vegetation is able to respond.<sup>466</sup>

The experts have made preliminary recommendations pertaining to managing for cedar that should have been included in the FEIS to inform the decisionmaker and public about approaches to managing this species. The recommendations include the development of an

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<sup>458</sup> Yellow Cedar Regeneration at <http://www.fs.fed.us/r10/spf/fhp/cedar/regen.html>.

<sup>459</sup> Hennon, P.E., et al, 2007.

<sup>460</sup> *Id.*; Yellow Cedar Regeneration at <http://www.fs.fed.us/r10/spf/fhp/cedar/regen.html>.

<sup>461</sup> Logjam FEIS at 3-160.

<sup>462</sup> *Id.*

<sup>463</sup> *See, e.g.* Yellow Cedar Regeneration at <http://www.fs.fed.us/r10/spf/fhp/cedar/regen.html>.

<sup>464</sup> Stroh, N., C. Baltzinger & J. Martin, 2007. Deer prevent western red cedar (*Thuja plicata*) regeneration in old-growth forest of Haida Bwain: Is there a potential for recovery? *Forest Ecology and Management* 255 (2008) 3873-3979.

<sup>465</sup> Logjam FEIS, Appx. B at B-59.

<sup>466</sup> Hennon, P.E., et al, 2007(citing Hamman and Wang (2006)).

active program “[t]o help compensate for losses due to cedar decline and commercial logging in other sites.”<sup>467</sup>

Chief Forester Abigail Kimbell issued a directive requiring that the effects of climate change be considered in project-level analysis and provided one example that is very pertinent here – the “effects of expected shifts in rainfall and temperature patterns on seed stock selection for reforestation after timber harvest.”<sup>468</sup>

The failure to explain to consider the updated research and explain the inconsistencies between the conclusions and the statements in the FEIS violated NEPA by undermining the scientific integrity of the FEIS and depriving the public and the decisionmaker “of the full range of responsible opinion on environmental effects.”<sup>469</sup> The assumptions made about cedar regeneration needed to consider the Forest Service’s own regeneration data, updated scientific research, and disclose that regeneration efforts are experimental and uncertain.<sup>470</sup>

### 3. *The EIS Fails to Adequately Consider the Cumulative Effects of Forest-wide and Project Level Cedar and Large-Tree Old-Growth Highgrading*

In *NRDC v. U.S. Forest Service*, the court noted the disproportionate harvest of high-volume old-growth and required the Forest Service to produce a cumulative effects analysis in its programmatic EIS.<sup>471</sup> The court pointed out several flaws that included: (1) the EIS failed to disclose the effect of continued highgrading across the forest and (2) the EIS needed to discuss whether or how to lessen the cumulative impact of the practice; (3) the EIS failed to assess potential impacts of reasonably foreseeable future high-grading.<sup>472</sup>

This EIS needed to address those concerns as it continues to remove disproportionate amounts of high volume old growth in a biogeographic province where a third of the high-volume POG and nearly a third of the large-tree POG have been removed over the last half-century.<sup>473</sup> Private landowners have removed three-quarters of the high-volume POG and 88% of the large-tree POG.<sup>474</sup> This province also once contained nearly half of the karst POG acreage within the Tongass National Forest and half of that has been removed from the province.<sup>475</sup> All of the future harvest on the Tongass will occur in this and three other southern Tongass biogeographic provinces.<sup>476</sup>

In the project area, the breakdown by volume class is roughly 25% low volume, 39% medium volume and 46% high volume strata.<sup>477</sup> The 10,297 acres previously harvested in the project area consisted of roughly two-thirds high volume strata and one-third medium volume strata and there was no previous harvest of low volume strata.<sup>478</sup> But neither the FEIS, unit cards, silviculture report nor the biodiversity report provide any indication of

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<sup>467</sup> Hennon, P.E., et al, 2007.

<sup>468</sup> Kimbell, A. 2009. Climate Change Considerations in Project Level NEPA Analysis. January 13, 2009.

<sup>469</sup> 40 C.F.R. § 1502.24; 40 C.F.R. § 1500.1(b); *Seattle Audubon Society v. Moseley*, 798 F.Supp. 1473, 1497 (W.D. Wash. 1992).

<sup>470</sup> See, e.g. *Friends of the Earth v. Hall*, 693 F.Supp. 904.

<sup>471</sup> *NRDC v. U.S. Forest Service*, 421 F.3d 797, 815 (9<sup>th</sup> Cir. 2005).

<sup>472</sup> *Id.*

<sup>473</sup> TLMP FEIS at 3-162.

<sup>474</sup> *Id.*

<sup>475</sup> *Id.*

<sup>476</sup> *Id.* at 3-257; see also Dillman, M., 2009. Logjam Timber Sale FEIS Biodiversity Resource Report.

<sup>477</sup> Sheets, R.M., 2009. Logjam TS DEIS, Timber and Vegetation Resource Report. Thorne Bay Ranger District, Tongass National Forest. Prince of Wales Island, Alaska.

<sup>478</sup> *Id.*

project level removals by volume strata. The failure to provide and discuss this information implicates a key concern of the Ninth Circuit and repeats the analytical failure that led to the invalidation of the 1997 TLMP FEIS.

The failure to address high-grading was also particularly disturbing in light of yellow-cedar decline and a biome-wide removal of red cedar that has resulted in the Tongass acting as a refugia for this species. In our DEIS comments, we pointed out how the Sierra Club has documented a forest-wide pattern of disproportionate harvests of red and yellow cedar and added that the most recent cut and sold reports indicated a continuing trend.<sup>479</sup> A 1998 review of commercial timberlands on the Tongass indicated a forest-wide composition of 7% red and yellow cedar and a subsequent inventory increased the ration to 9.7% yellow cedar and 5.9% red cedar in terms of net growing stock on timberland.<sup>480</sup> Both calculations failed to consider non-suitable lands so there is no species composition inventory that reflects the total land base.

Forest Service economic research makes clear that continuing this trend is necessary in order to provide economic timber sales.<sup>481</sup> Cut and sold reports verify that cedar generates nearly half the sales volume even though these trees comprise at most 15.6% of the suitable timber land base.<sup>482</sup> Nearly all of the timber extraction occurs in the southern Tongass where cedar is more prevalent.<sup>483</sup>

The tree species composition in project areas designated for timber production is 53% hemlock, 13% Sitka spruce, 11% yellow-cedar and 23% western red cedar.<sup>484</sup> The planning record draft response to our comments acknowledges that “western red cedar is being over harvested in all alternatives.”<sup>485</sup> Yellow cedar extraction occurs at the 17% rate.

The Forest Service has not analyzed the cumulative effects of cedar high-grading adequately at the programmatic level. Further, because of cedar decline, NEPA’s requirements also mandated that the Forest Service to analyze cedar high-grading at a smaller scale, including biogeographic province and project area scales.<sup>486</sup> Either way, the cumulative effects analysis failed to consider this important issue at an appropriate scale, warranting a rescission of the FEIS and ROD.

As a final matter, NFMA’s viability and diversity provisions required the Forest Service to address how it will maintain this valuable and rare component of the forest mix in light of the cumulative impacts of high-grading both cedar species, cedar decline and climate change and regeneration concerns.<sup>487</sup> The response to our comment indicates that the diversity provisions are procedural in nature based on a ruling in an administrative appeal

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<sup>479</sup> Greenpeace et al comments at 49; SCS comments at Section VIII.

<sup>480</sup> Morse, K.S., 1998. Evaluating the Demand for Tongass Timber Using Adaptive Management to Implement Sec. 101 of the 1990 Tongass Timber Reform Act. USDA Forest Service, Alaska Region 10: September, 1998. Van Hees, W.V.S., 1998. Chatham, Stikine, and Ketchikan POG species composition inventories. Pacific Northwest Research Station: 1998; Willson, B. 2002.

<sup>481</sup> Housley, R. 2007.

<sup>482</sup> Cut and sold reports., 2001-2007 (showing that red and yellow cedar generated nearly \$3.3 million of the Forest Service’s sales revenue while hemlock and spruce generated \$3.75 million in sales).

<sup>483</sup> See e.g. Housley, 2007; Cut and Sold reports 2003 – 2007 (showing that 187 MMBF of the 221 MMBF sold from 2003 – 2007 came from southern Tongass ranger districts).

<sup>484</sup> Sheets, R.M., 2009. Logjam TS DEIS, Timber and Vegetation Resource Report. Thorne Bay Ranger District, Tongass National Forest. Prince of Wales Island, Alaska.

<sup>485</sup> Silviculture Response to comments at \_\_

<sup>486</sup> See *Pac. Coast Fed’n of Fishermen’s Ass’ns, Inc. v. Nat’l Marine Fisheries Serv.*, 265 F.3d 1028, 1037-38 (9<sup>th</sup> Cir. 2001).

<sup>487</sup> 36 C.F.R. § 219.27(g).

determining that the “Forest Service is not obligated to maintain ‘any specified level of abundance or distribution of particular plant or animal communities.’”<sup>488</sup>

We disagree with such a crabbed interpretation and point out that the Ninth Circuit implied that there is a limit without expressly ruling on the issue: “the cumulative impacts on wildlife viability by non-federal entities, as well as by the Forest Service to the extent permissible under NFMA, ought to be considered.”<sup>489</sup> The Ninth Circuit has also referred to the diversity provisions as “substantive requirements.”<sup>490</sup> Furthermore, the absence of any consideration of the effects of continued cedar high-grading also constitutes a failure of process at both the programmatic and project levels. Based on the results of regeneration surveys, this project will convert substantial acreage from cedar forests to low-value hemlock forests and the environmental and economic impacts needed to be disclosed and discussed pursuant to NEPA.

#### **D. Clearcut Sizes Violate Forest Plan Guidelines**

NFMA regulations establish a 100 acre size limit for clearcut openings and the 2008 TLMP Amendment carves out an exception for when a larger unit “will produce a more desirable contribution of benefits.”<sup>491</sup> The plan requires application of a multi-factor test prior to increasing clearcut size beyond the maximum that includes effect on wildlife and fish habitat and effects on water quality and quantity.<sup>492</sup> The FEIS did not discuss all of the relevant factors used to reach the decision to exceed the size limit for several units, nor did it disclose that placing many of these clearcuts adjacent to previous clearcuts will result in a de facto violation of the 100 acre size limit. The FEIS needed to provide more than a simple statement justifying the exceedance – it needed to analyze and explain the reasons for diverging from Forest Plan provisions.<sup>493</sup> The failure to do so violated NFMA and NEPA.

This project directly authorizes several units that exceed the 100 acre limit.<sup>494</sup> We fail to see how the larger unit can produce a desirable contribution of benefits after considering all the relevant factors. The decision to proceed with the over-sized unit was arbitrary and fails to comply with the Forest Plan.

Also, the unit cards for this project place several new clearcuts adjacent to previous clearcuts that are in or soon will be approaching the stem exclusion stage. This is particularly troubling because it creates “creeping megacuts” where new units abut previous clearcuts and create what is essentially one continuous clearcut that exceeds the 100 acre limit.

If cutting unit density is that high, there is no justification for proceeding with these units in the first place. This implicates the creeping megacut issue and exceeds the 100 acre limit in areas where moderate and high windthrow potentials greatly diminish the effectiveness of buffers between units. The decision to proceed with these units violates the

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<sup>488</sup> Logjam FEIS, Appx. B at B-58. We did not find a copy of this appeal decision in the planning record, and the Forest Service’s nationwide website of appeal decisions only dates back to 2002 and does not include the 1998 decision. The Forest Service should have made enough information available to assess the basis of the appeal decision.

<sup>489</sup> *Natural Resources Defense Council*, 421 F.3d at 816.

<sup>490</sup> *Idaho Sporting Congress v. Rittenhouse*, 305 F.3d 957, 961 (9<sup>th</sup> Cir. 2002).

<sup>491</sup> 2008 TLMP Amendment at 4-72.

<sup>492</sup> *Id.*

<sup>493</sup> See, e.g. *Hells Canyon Preservation Council, Earthworks, and Northwest Environmental Defense Center v. Haynes*, No. CV.05-1057-PK 18-19 (D. Or. 2006).

<sup>494</sup> Logjam FEIS at 3-163.

100 acre limit and the failure to disclose that high windthrow risks will create de facto 100 acre exceedances violates NEPA.

## **X. Climate Change: The Decision to Proceed with this Project Arbitrarily Failed to Consider Climate Change and NEPA Requires Analysis of Projected Climate Change Impacts**

It was arbitrary for the Forest Supervisor to consider climate change unworthy of consideration in the decision to proceed with this project. The Forest Service has recognized that the challenges posed by climate change are “one of the most urgent tasks facing the Forest Service” and “as a science-based organization, [the Forest Service needs] to be aware of this information and to consider it any time we make a decision regarding resource development, technical assistance, business operations or any other aspect of [its] mission.”<sup>495</sup>

NEPA required such a consideration at the project level. The failure to include information that is important, significant or essential renders an EIS inadequate.<sup>496</sup> Further, when an EIS addresses incomplete information or scientific uncertainties, it must: (1) disclose the relevance of the incomplete information; (2) provide a summary of existing credible scientific evidence relevant to possible impacts and (3) provide an evaluation of impacts based on generally accepted approaches or research methods.<sup>497</sup>

The Logjam FEIS raises uncertainties about climate change and concludes that because forest management effects are likely to be small, “information on climate change ... would not be essential to a reasoned choice among alternatives for the Logjam FEIS.”<sup>498</sup> Throughout this appeal we have discussed a number of climate change impacts implicated in this project – stream temperature exceedances, inputs into wildlife viability risk analyses, yellow cedar decline and others. The complete omission of project level impacts on the carbon cycle was particularly disturbing because there is ample science to demonstrate the significance of carbon losses through logging and carbon sequestration for projects that occur at a smaller scale than the Logjam Project.<sup>499</sup> The Forest Service needed to consider this project in the context of a rapidly changing environment but instead failed to even acknowledge these changes.

We incorporate by reference here points made in our 2008 TLMP appeal – particularly that this FEIS and the TLMP it tiers to are misleading in characterizing climate change projections as too uncertain to warrant an active management response at the programmatic or project level. As we have repeatedly pointed out, the projections have identified high degrees of certainty, there have been no credible studies to refute these projections, and recent events have been consistent with the projections – including the unusually warm and dry periods of weather occurring in 2004 and recurring during this appeal period. It is unreasonable for the Forest Plan and project-level NEPA documentation

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<sup>495</sup> Kimbell, A.R. 2008. USDA Forest Service Chief letter to Forest Service National Leadership Team. February 15, 2008.

<sup>496</sup> 40 C.F.R. § 1500.1.

<sup>497</sup> 40 C.F.R. § 1502.22(b).

<sup>498</sup> Logjam FEIS at 3-173.

<sup>499</sup> Exhibit 53. Center for Biological Diversity, 2008. Comments on Timber Harvesting Plan: Swamped.

to rely to this extent on uncertainty. There are numerous scientifically credible views pertaining to climate change impacts on the Tongass.<sup>500</sup>

The failure to adequately consider climate change in the TLMP FEIS and in this project FEIS tainted the decision to proceed with this project. Notably, more than 140 scientists disagree with the Forest Service's assessment of climate change at the forest and project level:

The importance of maintaining large terrestrial carbon stores, particularly in forests, is swiftly being recognized as a critical element in addressing climate change. To avoid climate catastrophe we must reverse global deforestation which contributes 20 percent of the world's climate pollution and impoverishes the land of critical refugia for the world's already threatened biodiversity.

Scientific research has amply documented the greater health and resiliency of intact forest ecosystems versus those disturbed by roads and logging. Less disturbed forests are less susceptible to tree diseases, insect attacks, and invasions from non-native species, and less likely to have suffered the adverse effects of fire suppression. These healthier ecosystems are in turn more able to withstand the effects of global climate change and act as refugia for sensitive wildlife and plant species, many of which are vulnerable to extirpation in more developed areas.<sup>501</sup>

Again, Appellants strongly disagree that climate change was not relevant to this decision. The Forest Supervisor's decision to proceed with this project without considering the cumulative impacts of this project and climate change was unreasonable and violated NEPA.

## **XI. Request For Relief**

For the above reasons, we request that you reverse the Forest Supervisor's decision to proceed with the Logjam Timber Sale and cancel the project in its entirety.

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<sup>500</sup> See, e.g. Kelly, B.P., T. Ainsworth, D.A. Boyce, E. Hood, P. Murphy & J. Powell, 2007. Climate Change: Predicted Impacts on Juneau. Report to Mayor Bruce Botelho and the City and Borough of Juneau Assembly, April 2007. Document is included in the 2008 TLMP Amendment Planning Record.

<sup>501</sup> Exhibit 45. Lovejoy, T. et al. 2009. Letter to President Barack Obama Re: the Roadless Area Conservation Rule.

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