Alaska Rainforest Defenders

A regional environmental organization established in 2011 (formerly GSACC)

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19 October 2020

Shane Walker, District Ranger
Attn: South Revilla Integrated Resource Project
USDA Forest Service
Tongass National Forest, Ketchikan Misty Fjords Ranger District
3031 Tongass Avenue
Ketchikan, Alaska 99901

Submitted via: https://cara.ecosystem-management.org/Public/CommentInput?Project=53477, and
Via email to: SM.FS.AtkmComments@usda.gov

Re: South Revilla Integrated Resource Project

Dear Mr. Walker,

These are timely comments of the Alaska Rainforest Defenders ("Defenders") for the South Revilla Integrated Resource Project, comprised of 61 pages. A thumb drive containing 144 exhibits was sent to you by certified mail this afternoon; Exhibit 145 is being sent with the upload of these comments, and a web link to Exhibit 146 is in footnote 196 (p.29).

The project would occur in a 44,000 project area surrounding Carroll Inlet.[1] The acreage includes 8,224 acres likely to be conveyed to and clearcut by an Alaska timber agency, the Alaska Mental Health Trust.[2] The Proposed Action would maximize raw log exports for Alcan/Transpac, a General Partner of a Canadian multinational company which would destroy over 5,000 acres of old growth forest, including the remaining winter deer habitat in the project area, as well as another 1,239 acres of recovering, regenerating second growth forest.[3] The Forest Service would need to construct and/or maintain more than 70 miles of road and other transportation infrastructure at a cost – sure to be borne by taxpayers – of over $12 million.[4] The Proposed Action would also destroy scenic values around Carroll Inlet.[5]

Defenders' members use the Tongass National Forest for recreation, commercial fisheries, subsistence, wildlife viewing, scientific research and other activities. We have a long-standing interest in the ecological integrity of the Alaska Alexander Archipelago and its importance to local and regional economies, both cash and subsistence. In particular, our board members have engaged in considerable advocacy on behalf of iconic Tongass wildlife species, such as the Alexander Archipelago Wolf, Queen Charlotte Goshawk, black and

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[1] DEIS at 1.

[2] *Id.*

[3] *Id.* at 5.

[4] *Id.* at 20.

[5] *Id.*

brown bear, and Sitka black-tailed deer and have a long history of participation in and dependence on southeast Alaska's commercial salmon fisheries.

There have been recent and severe declines in pink salmon harvests in Alaska Department of Fish and Game (ADF&G) regulatory districts in southeast Alaska. These declines make it essential for the Forest Service to consider whether the need to provide aquatic habitat for fishery resources used by hundreds of local fishermen and processors should take priority over a perceived need to provide raw log exports to Alcan/Transpac. The project area already has highly degraded habitat conditions for wildlife and fish, with losses of over two-thirds the interior old-growth forest, a massive old-growth habitat deficit affecting deer, wolves, and other old-growth dependent species, and road densities of up to 2 mis/mi^2 in some Wildlife Analysis that will soon be accessible via a new road connection to Ketchikan.

Defenders supports the no-action alternative, and we discuss our specific concerns in the following sections.

Sincerely,

Rebecca Knight
president

Contents

I. Purpose & Need and socio-economic analysis

A. Purpose and Need

The DEIS says the "intent" of this project is to (1) contribute to jobs and labor income in local and regional communities associated with timber, recreation, tourism and aquatic and terrestrial resource management; (2) sustain and improve aquatic and terrestrial habitat conditions and (3) provide access to forest resources for multiple users.[6] However, the Forest Service's primary intent for this project is to produce a large timber sale, based on a perceived need "to provide a sustainable level of forest products to contribute to the economic sustainability of the region."[7] The Forest Service believes that cutting down old-growth and larger young-growth timber "would maintain the timber industry during the transition to young-growth management and would provide jobs and other economic opportunities.[8]

While the DEIS suggests a broad program that would include non-timber resource uses, it says nothing about how the Forest Service has allocated funding for any activities other than the timber component of the project or for project components that benefit plantation forestry such as thinning. And the Forest Service nationally faces a severe budget crisis, exacerbating what is already a dismal record of providing the special uses administration necessary to authorize even externally funded recreation projects. [9]

The absence of post-NEPA funding for anything other than sale administration means this project is a traditional timber sale. Even if the Forest Service would mitigate some of the harm caused by its past and present mismanagement of southeast Alaska's public lands, the adverse impacts of further federal logging will more than offset any small improvements in fish or wildlife habitat. Industrial activities associated with the removal of remaining old-growth forest and implementation of plantation forestry for recovering second-growth forests will also render the shorelines and interior areas undesirable or even inhospitable for visitors from the region and beyond who come for recreation – particularly sport fishing and hunting.

The other components of the purpose and need are empty promises meant to obscure the agency's true purpose which is overly narrow and solely seeks to provide timber for federally favored corporate welfare recipients i.e. large timber sale purchasers and their foreign manufacturing customers. The misleading purpose and need violate the Administrative Procedure Act (APA) and NEPA. NEPA requires federal agencies to disclose sufficient information as need to ensure "informed decisionmaking and informed public participation."[10] NEPA requires that federal agencies (1) take a hard look at the environmental impacts of proposed projects and (2) ensure the availability of information to the public so as to enable public participation in the decisionmaking process.[11] In particular, NEPA analyses cannot serve this second essential function if they reflect misleading economic assumptions "by skewing the public's evaluation of a project."[12] NEPA thus

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[6] *Id.* at 1.

[7] *Id.* at 5.

[8] *Id.* at 5.

[9] *See* https://www.kcaw.org/2018/02/27/forest-service-fighting-lower-48-wildfires-is-hurting-the-tongass/.

[10] 40 C.F.R. § 1502.1

[11] *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332. 349 (1989)

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

requires that "[a]gencies shall insure the professional integrity … of the discussions and analyses."[13]

The DEIS for this project fails these standards by suggesting the possibility of fixing fish habitat but without providing project funding to achieve any non-timber objectives. Further, the DEIS needed to provide data to support the Forest Service's assumption that clearcutting nearly a hundred million billion board feet will disperse socio-economic benefits to multiple southeast Alaska communities. Other than a few mill workers in Klawock, the DEIS does not identify any actual Alaskans actively employed by federal timber sale purchasers.

B. The Range of Alternatives violates NEPA

The Forest Service needs to develop a broader purpose and need statement that allows for downscaled timber-take alternatives, including alternatives that refrain from extracting old-growth, alternatives that eliminate clearcutting and alternatives that do not require any road construction, temporary or otherwise. All alternatives emphasize exportable timber for Alcan, showing the agency's purpose is overly narrow and unlawfully excludes other alternatives that would respond to other, more important considerations – for example, identified significant issues that include effects on wildlife habitat, and effects of timber take and road construction on watershed condition. Alternatives which continue extensive clearcutting of old-growth forests fail to address other legal obligations to protect clean water, to maintain habitat for sensitive and subsistence species and manage for multiple uses.

NEPA imposes an obligation to "[r]igorously explore and objectively evaluate all reasonable alternatives."[14] An agency must "consider such alternatives to the proposed action as may partially or completely meet the proposal's goal," meaning that it is reasonable to consider alternatives that meet other objectives and attain or prevent the loss of non-timber desired conditions even if they exclude a large exportable old-growth timber supply.[15] The key criterion for determining whether a range of alternatives is reasonable "is whether an EIS's selection and discussion of alternatives fosters informed decisionmaking and informed public participation."[16] Only by studying a reasonable *range* of alternatives can the agency adequately compare the environmental impact of its proposed action, and allow the public to weigh in on alternative courses of action, and determine *whether the federal government has other options that would be less damaging to the natural environment.*[17]

The range of alternatives must be broader than those that all drive at the same result – intensive clearcutting of old-growth forests in areas that cannot withstand further loss of habitat. Intensive old-growth clearcutting alternatives provide no clear basis for choice, fail to sharply define the issues or allow for informed decisionmaking and provide no means for the public to compare and provide comments on alternatives that would allow for the

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[13] 40 C.F.R. § 1502.24.

[14] 40 C.F.R. § 1502.14(a); *see also Barnes v. U.S. Dep't. of Transp.,* 655 F.3d 1124, 1131 (9th Cir. 2011).

[15] *City of New York v. U.S. Dep't of Transp.,* 715 F.2d 732, 742-742 (2nd Cir. 1981).

[16] *See* 40 C.F.R. § 1500.1(b), (c); *Westlands Water Dist. V. U.S. Dep't of Interior,* 376 F.3d 853, 872 (9th Cir. 2004)(citations omitted); *New Mexico ex rel. Richardson,* 565 F.3d 683, 708 (10th Cir. 2009)(citations omitted).

[17] *See* 42 U.S.C. § 4332; *Headwaters, Inc. v. Bureau of Land Mgmt.*, 914 F.2d 1174, 1180 (9th Cir. 1990).

retention of forested habitat essential to maintaining at-risk fish and wildlife populations and reducing significant harm to socio-economic sectors that depend on those resources.

A reasonable range of alternatives must include alternatives that provide for meaningful comparison of courses of action that will generate conservation benefits – particularly when there are significant environmental values that counter the agency's development interests. An agency's NEPA analysis must be informed by the laws driving the action being reviewed.[18] Here, NFMA and its implementing regulations provide the substantive duties with which the agency must comply in amending the Forest Plan. NFMA requires that forest plans provide for multiple uses, including recreation, watersheds, wildlife, and fish.[19] NFMA also sets a hard floor with respect to managing flora and fauna populations: the agency must provide for the "diversity of plant and animal communities."[20] Downscaled logging alternatives would elevate substantive viability considerations and give the agency the opportunity to effectuate NFMA's multiple use mandate.

The DEIS includes 3 action alternatives. Alternative 2 addresses timber supply and economics by maximizing timber volume, providing 70 MMBF old growth and 22 MMBF of second growth from 5115 acres.[21] This alternative would destroy scenic values on 1,762 acres, or 28 percent of the project area, around scenic Saddle Lakes and Carroll Inlet.[22] The Forest Service would construct 14.4 miles of new road, 34 miles of temporary road and do maintenance on over 30 miles of road to access the timber units at a cost of $12.8 million.[23] This alternative would also destroy 402 acres of high value winter deer range (south-facing, low elevation POG) and eliminate wildlife travel corridors.[24] The agency hopes the area would support 16.3 deer per square mile after implementation.[25]

Alternative 3 purports to respond to wildlife habitat needs and excludes uncut travel corridors and some identified winter deer habitat.[26] This alternative reduces some clearcut sizes and reduces old growth take by 705 acres relative to Alternatives 2 and 4, or 13 MMBF, so that Alcan/Transpac would be removing 60 MMBF of old-growth from 4,410 acres with some helicopter logging.[27] This alternative would still entail expensive, extensive road construction, with 13.1 miles of new road, 33.8 miles of maintenance on closed roads and 31.7 miles temporary road at a cost of $10.8 million.[28] This alternative would similarly spoil scenic values on 1,762 acres, or 28 percent of the project area, around scenic Saddle Lakes and Carroll Inlet, and increase clearcut sizes just outside some of the most valuable habitat for all wildlife species - the beach buffer.[29] The retention of a little more winter deer habitat

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[18] *See Or. Nat. Des. Ass'n v. U.S. BLM,* 625 F.3d 1092, 1109 (9th Cir. 2010).

[19] 16 U.S.C. § 1604(e).

[20] *Id.* § 1604(g)(3)(B).

[21] DEIS at 10.

[22] *Id.* at 20.

[23] *Id.*

[24] *Id.*

[25] *Id.*

[26] *Id.*

[27] *Id.* at 21.

[28] *Id.*

[29] *Id.* at 20.

and 38 corridors would enable the agency to retain another .1 deer per square mile of carrying capacity in average winters.[30]

Alternative 4 reduces scenic spoilage by maintaining Forest Plan scenic integrity objectives.[31] The agency would still extract timber from the same 5,115 acres of old-growth forest as Alternative 2, but do more partial cutting and take 68 MMBF.[32] Alternative 4 would have similar road construction costs, with 13.7 miles of new road, 33.4 miles of maintenance on closed roads, and 31.8 miles of temporary road, or a total cost of $11.4 million.[33] The achievement of scenery "savings" sacrifices 402 acres of winter deer habitat and 38 wildlife travel corridors.[34] This alternative still entails significant scenic losses but maintains the ugliness at clearcut sizes long-established under the Forest Plan.

In other words, the main difference between the Proposed Action and other action alternatives is that Alternatives 3 and 4 reduce clearcut sizes for different purposes so that each alternative has roughly 500 fewer acres clearcut than Alternative 2.[35] The reviewing public, knowing that the Forest Service has never selected a no-action alternative for a timber sale, has little comment opportunity except to make the bizarre choice between shrinking clearcut sizes for the sake of saving some scenery or the sake of saving some Sitka black tailed deer, or, more specifically, a portion of one – a tenth of a deer per square mile.

The proposed project-specific Forest Plan amendment to lower scenic integrity objectives will result in both larger and more visible clearcuts.[36] The amendment would create "very low" scenic integrity objectives throughout the project area.[37] This means that scenery for boaters using marine waterways or for drivers using the new Shelter Cove road for recreational purposes will deteriorate from existing conditions that provide scenic values to a landscape that "appear[s] heavily altered."[38] Maximum clearcut sizes could increase tenfold.[39] Both Alternatives 2 and 3 will destroy scenic values in this manner based on an unlawful Forest Plan Amendment – on nearly 2,000 acres. Alternative 4 purports to "protect" scenic values by maintaining existing Forest Plan scenic integrity objectives, but only at the cost of clearcutting more deer habitat. The rationale for spoiling scenery – improved economics – is not a changed condition that warrants a Forest Plan amendment.

The action alternatives take 70, 60 and 68 MMBF of old-growth timber, respectively, and even more similar amounts of second growth. The DEIS admits that all alternatives provide roughly the same amount of timber.[40] Road construction and related costs are nearly identical between alternatives. In other words, the alternatives are all the same, except the agency uses different schemes to justify larger clearcut sizes than are acceptable under either Forest Plan regulations for wildlife viability or scenery. The CEQ's "Forty

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[30] *Id.* at 21.

[31] *Id.* at 22.

[32] *Id.*

[33] *Id.*

[34] *Id.*

[35] *Id.* at 58.

[36] *Id.* at v, 104.

[37] *Id.* at 107.

[38] Forest Plan 4-56-4-60.

[39] *Id.*

[40] *Id.* at 57.

Questions" explains that a range of alternatives should include quantitative differences in how an agency analyzes a proposal:

> For some proposals there may exist a very large or even infinite number of possible reasonable alternatives. For example, a proposal to designate wilderness areas within a National Forest could be said to involve an infinite number of alternatives from 0 to 100 percent of the forest. When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. An appropriate series of alternatives might include dedication of 0, 10, 30, 50, 70, 90 or 100 percent of the Forest to wilderness.[41]

The Ninth Circuit case law mirrors this guidance by identifying a need for alternatives that provide for meaningful quantitative distinctions. In *State of Cal. v. Block,* the Forest Service prepared a programmatic EIS for designating roadless areas and analyzed 8 action alternatives that would allocate roadless acreage between wilderness and non-wilderness designation.[42] The court concluded that the range of alternatives was unreasonable in large part because the Forest Service limited its consideration of the amount of acreage available for Wilderness designation to no more than 33% of the roadless acreage.[43] The court explained that:

> … without any explanation, the Final EIS seriously considered only those alternatives that allocate more acreage to Nonwilderness than to Wilderness. Moreover, with the sole exception of Alternative I, Nonwilderness acreage allocations exceed Wilderness allocations by a substantial margin, ranging from five-to-two for Alternative D, to nineteen-to-one for Alternative E. See Table # 1, supra. While nothing in NEPA prohibits the Forest Service from ultimately implementing a proposal that allocates more acreage to Nonwilderness than to Wilderness, it is troubling that the Forest Service saw fit to consider from the outset only those alternatives leading to that end result.[44]

Similarly, in *Center for Biological Diversity v. Nat. Highway Traffic Safety Admin.,* the 9th Circuit reviewed a range of alternatives that would regulate vehicle emissions through fuel economy standards.[45] The court characterized the alternatives as "hardly different" from the agency's selected alternative and noted that none of the alternatives would achieve anything more than a small decrease (1.8 to 2.6%) from baseline emission levels.[46] The court explained that the agency considered "a very narrow range of alternatives" with a minimal range of impacts.[47] All of the alternatives derived from a single study - NHTSA's cost-benefit analysis.[48] The court faulted NHTSA's for failing to consider more stringent standards that would allow for increased conservation benefits.[49]

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[41] https://ceq.doe.gov/nepa/regs/4011/1-10.HTM (CEQ Forty Most Asked Questions, question 1b).

[42] *State of Cal. v. Block,* 690 F.2d 753, 766 (9th Cir. 1982).

[43] *Id.* at 766-768.

[44] *Id.* at 768.

[45] *Center for Biological Diversity v. Nat. Highway Traffic Safety Admin.,* 538 F.3d 1172, 1218 (9th Cir. 2008).

[46] *Id.*

[47] *Id.* at 1218-1219.

[48] *Id.* at 1218.

[49] *Id.* at 1219.

Also, in *New Mexico ex rel. Richardson,* the state of New Mexico and a coalition of environmental organization challenged a BLM land management plan amendment that would determine which public lands in the planning area would be open to oil and gas leasing.[50] The BLM eliminated alternatives that would have heightened environmental protections relative to the existing plan and considered only two action alternatives despite extensive public comment requesting alternatives that would protect environmentally sensitive areas.[51] The court noted that there were "powerful" environmental values associated with eliminated alternatives that provided for more significant reductions in lands open to development, and concluded that multiple-use principles required the BLM to include a conservation-oriented alternative in its NEPA process.[52] And finally, in *Muckleshoot Indian Tribe v. U.S. Forest Service,* the 9th Circuit held that the Forest Service "failed to consider an adequate range of alternatives where the EIS considered only a no action alternative along with two virtually identical alternatives."[53]

The above discussion shows that a reasonable range of alternatives must include alternatives that provide for meaningful comparison of courses of action that will generate conservation benefits – particularly when there are significant environmental values that counter the agency's development interests. Here, the Forest Service proposes three nearly identical logging alternatives and failed to consider lower volume alternatives despite the massive net public losses and serious risks to multiple use resources caused by any level of additional habitat degradation in the project area.

C. Conclusion: the Forest Service should rescind the DEIS and rescope alternatives

In sum, the purpose and need for this project have an overly narrow focus on providing timber supply for foreign companies and mills. The Forest Service begins with the false assumption that federal timber supply can maintain an industry and that maintaining that industry would somehow benefit the region. The Forest Service should either cease planning on this misguided project, or develop a new purpose and need statement that reflects the broader economic and ecological needs of southeast Alaska residents and wildlife. For example, the Forest Service could develop a comprehensive plan to address water quality issues that employs the region's 21st century workforce replacing red pipes and remediating road conditions that cause excessive sediment input into streams.[54] Further development of this project would require substantially downscaled alternatives that actually respond to the need for scenic values and fish and wildlife habitat in the project area.

III. The Forest Service should abandon this project or substantially downscale the alternatives to reduce taxpayer costs and job transfer to China

The Forest Service fantasizes that clearcutting up to ninety-two million board feet will provide socio-economic benefits. Since the agency's perceived need includes "timber

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[50] *New Mexico ex rel. Richardson,* 565 F.3d at 688-689.

[51] *Id.* at 709.

[52] *Id.* at 710-11.

[53] *Muckleshoot Indian Tribe v. U.S. Forest Service,* 177 F.3d 800, 812-813 (9th Cir. 1999).

[54] We add that the agency's stated reasons for refusing to consider no commercial timber harvest and no new road construction alternatives for this project are nonsensical. As explained in Section III., there are no commercial timber jobs to support in regional communities. And existing roads allow access to over a third of the project area's timber resources, which still would allow for a rather large timber sale.

industry" uses and volume for "local mills," this analysis should include an honest review of actual employment trends, the operational capacity of "local mills" for large timber sales and Alcan/Tranpac's raw log export practices with federal timber. Also, the agency's emphasis on "providing volume in an economically efficient manner" implicates the agency's own [in]efficiencies in managing the timber sale program. The DEIS should provide a clear, complete and candid disclosure of program costs and revenues.

The entire economic analysis violates the Administrative Procedure Act (APA). The APA requires that an agency "examine the relevant data and articulate a satisfactory explanation for its action, including a "rational connection between the facts found and the choice made."[55] An agency action is "arbitrary and capricious if the agency … entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."[56] A primary problem under the APA is that the DEIS imagines a region-wide timber manufacturing industry "need" for timber from the project area.

A. The DEIS fails to confront whether large old-growth timber sales address local needs

The Forest Plan timber "desired conditions" related to the purpose for this project are to continue timber uses by the "timber industry and Alaska residents" and provide volume to "local mills" and "[m]anage the timber resource … in an economically efficient manner."[57] The DEIS identifies a need "to provide a sustainable level of forest products to contribute to the economic sustainability of the region" by maintaining an industry and providing jobs.[58] The DEIS claims that if the Forest Service fails to implement this project, "local mills and regional mills" would have to find 92 MMBF of timber supply elsewhere, and, if unable to do so, these "local mills" may close and the local community economies may be impacted."[59]

NEPA requires federal agencies to disclose sufficient information as needed to ensure "informed decisionmaking and informed public participation."[60] NEPA requires that federal agencies (1) take a hard look at the environmental impacts of proposed projects and (2) ensure the availability of information to the public so as to enable public participation in the decisionmaking process.[61] In particular, NEPA analyses cannot serve this second essential function if they reflect misleading economic assumptions "by skewing the public's evaluation of a project."[62] NEPA thus requires that "[a]gencies shall insure the professional integrity … of the discussions and analyses."[63]

The federal fantasy of large numbers of local mills and workers clamoring for millions of board feet of timber from the project area does not reflect the small number of actual Alaskan businesses and workers complicit in federal forest liquidation – or worse, the number of seafood products and visitor products providers who will suffer harm from further

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[55] *Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Ins. Co.,* 463 U.S. 29, 43 (1983)

[56] *Id.*

[57] 2016 Tongass National Forest Land and Resource Management Plan at 2-5.

[58] DEIS at 5.

[59] *Id.*, Executive Summary at iii.

[60] 40 C.F.R. § 1502.1

[61] *Robertson v. Methow Valley Citizens Council,* 490 U.S. 332. 349 (1989)

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

[63] 40 C.F.R. § 1502.24.

ecological degradation. The DEIS needs to seek out actual data on the small number of workers in federal timber and re-evaluate whether these old-growth timber sales contribute to the economic sustainability of the region or provide jobs and opportunities for southeast Alaska residents.

1. The DEIS needs to evaluate whether large old-growth timber sales meet the need to contribute to regional economic sustainability

The Forest Service's myopic focus on supplying timber for Alcan/Transpac at a massive public cost fails to recognize the region's market-based transition away from federal timber dependency and toward a more diversified and sustainable economy. The DEIS identifies "many" mills operating throughout the region as well as the two large timber sale purchasers, Viking Lumber of Klawock, and the multinational corporation Alcan/Transpac which does not have a mill but, according to the DEIS, supplies local mills.[64] Alcan/Transpac, currently holds 56 percent of sold and uncut Tongass timber and Viking Lumber currently holds 28 percent of sold and uncut Tongass timber.[65]

The DEIS includes an entire page identifying roughly 50 2018 southeast Alaska wood products business licenses scattered throughout the region, without linking any of these small businesses (most of whom do not purchase timber) to this project.[66] The Forest Service goes so far as to suggest that communities of Prince of Wales, Ketchikan, Kake, Petersburg and Wrangell are threatened with economic harm if this timber sale does not occur.[67] There are millions of board feet of federal timber available for sale adjacent to these communities.[68] The DEIS claims there are "sawmills" in the project area that will go out of business unless that agency proceeds this sale – but in fact no sawmills exist in the project area.[69] The DEIS also claims that Viking Lumber in Klawock would partially shut down unless it can purchase timber from the Ketchikan area.[70]

The sudden discovery of a massive regional small mill industry dependent on timber from Ketchikan is implausible. Regionwide, the timber industry has no role in nearly all southeast Alaska communities and the habitat damage it causes reduces economic outputs from their primary business sectors. Only two of the 24 smaller rural communities have any timber activity at all, while the rest depend primarily on fishing and tourism.[71] The amended Forest Plan FEIS addresses the needs of those two communities (both on Prince of Wales) and any other real or fictional small mills separately with an old-growth set-aside for the cottage industry.[72] Larger communities such as Petersburg, Wrangell and Ketchikan have

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[64] *Id.* at 50.

[65] Alaska Roadless Rulemaking DEIS at 3-36.

[66] DEIS at 51, Table 12.

[67] *Id.* at 57.

[68] *Id.* at 61.

[69] *Id.* at 60.

[70] *Id.* at 55.

[71] 2016 LRMP FEIS at 3-547-3-689.

[72] *Id.* at 3-152.

fully transitioned toward economies based on tourism and fishing.[73] Only Klawock has any timber industry activity because of the presence of Viking.[74]

The planning record for the 2016 LRMP Amendment showed a broad decline in the U.S. share of the global timber economy, particularly for southeast Alaska timber.[75] Indeed, bid values for this project are negative for all alternatives, ranging between -$83.49 (alt. 4) and -$96.87 (alt. 3) at "high market" scenarios – i.e. some local processing and -$37.87 to $51.01 at a low market scenario.[76]

The timber industry in southeast Alaska has become very small during the 21st century. The Forest Service's own mill capacity reports indicate that there were twenty-two sawmills active in 2000 most of which have closed.[77] Currently there are seven active sawmills in Southeast Alaska and two that remain installed but were idle in 2018.[78] Only one of those mills, Viking Lumber Company, produces more than 700 MBF and four of the mills produce between 1.5 and 31 MBF.[79] Two of the small mills are in Petersburg, two in Thorne Bay and two in Hoonah.[80] The Forest Service's own reports show that there is only one timber sale purchaser in Southeast Alaska capable of purchasing anything over 10 MMBF from any location other than Prince of Wales Island.[81]

The DEIS ignores actual regional employment data and asserts this project will produce "Alaska" and "local jobs" related to logging and sawmilling.[82] The DEIS projects that the project will generate jobs based on two scenarios: (1) at low market conditions, Alcan would export all hemlock and yellow cedar, and manufacture spruce and all western redcedar and (2) at high market conditions, there would be Alaska manufacturing of larger spruce and hemlock.[83] Under either scenario, the Forest Service believes the project could generate between roughly 290 and 350 jobs depending on the alternative and market scenario.[84] Nowhere does the DEIS provide any data showing that Alcan/Transpac actually provides timber for processing by Alaska workers.

Sawmill employment has consistently declined after the agency's 2007 transition to its raw log export model.[85] The DEIS estimates total Tongass sawmill employment at 37

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[73] *Id.* at 3-613, 3-639, 3-684-685.

[74] *Id.* at 3-558, 3-617.

[75] *See* 2016 LRMP FEIS PR Folder 763_02_000084 (Niemi 2016, Socioeconomic Comments on Timber Demand at 12.

[76] DEIS at 28.

[77] Exh. 76 (Parrent, Grewe & Daniels 2019).

[78] *Id.*

[79] *Id.* Table 5.

[80] *Id.,* Table 4.

[81] *See* Exh. 68 (2019 Volume Under Contract report).

[82] DEIS at 55-56.

[83] *Id.* at 29.

[84] *Id.*

[85] Exh. 76 (Parrent, Grewe & Daniels 2019).

workers in 2017 and 2018, with all but one employed at Viking Lumber.[86] The total number of workers over the last two years – 62, is at an all-time low.[87]

Even with increased flexibility to ship raw log exports, annual federal timber sale purchases decline each year.[88] Over the past decade, market factors have caused timber employment to decrease by nearly 90%.[89] Timber worker earnings are less than 1% of total employment related earnings in the region; federal timber generated a fraction of a percent (0.2%) of regional employment in 2013 and workers are leaving the timber economy every year.[90] Workers from areas other than southeast Alaska comprise a significant proportion of this natural resource-based work force.[91] Forest Service employees from Prince of Wales Island know that most of regional loggers are from Washington state, and that the Forest Supervisor's office engages in "creative writing" in its attempts to describe a local workforce.[92]

There is no existing logging company in nearby Ketchikan, requiring timber sale purchasers to import workers from elsewhere.[93] Further, there appears to be little workforce interested in or available for the 20th century kind of jobs the Forest Service envisions as the future for the region. The Southeast Conference reports a "graying" of the regional timber workforce and states that the "workforce is aging/in decline while the new workforce does not have the same work ethic or interest in physical work."[94] Also "[l]ogging has become a socially unacceptably business to be in."[95]

In sum, the NEPA analysis needs to confront significant economic issues and changing workforce needs in order to assess whether this project – aimed as it is primarily at providing a timber supply for Alcan/Transpac, its General Partner in Vancouver, B.C., and mills in China – would meet the local employment and economic viability need stated in the DEIS.

2. The DEIS must discuss actual socioeconomic changes in the region

Broader regional economic trends show that (the 2020 pandemic aside) commercial fishing, the visitor industry and the maritime sector are the "bright points in our economy."[96] These sectors have contributed to an overall regional growth in employment, population and wages following a market-based recovery from past dependence on the timber industry.[97] Employment, total income, per capita income and per-capita business earnings have increased in the region since 2000.[98] The regional arts sector is nearly twice the size of the

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[86] DEIS at 50; *Cf.* Exh. 76 (Parrent, Grewe & Daniels 2019).

[87] DEIS at 50, Table 11.

[88] https://www.fs.fed.us/forestmanagement/products/cut-sold/index.shtml

[89] *See* Exhs. 73, 74, 75 (Southeast Conference publications prepared by Rain Coast Data).

[90] 2016 LRMP FEIS at 3-480, Table 3.22-2 (53,145 total jobs); *id.* at 3-485, Table 3.22-4 (federal timber provided 123 jobs)

[91] *Id.* at 3-483.

[92] Exh. 97 (Kelly 2018).

[93] Exh. 15 (Nichols 2017).

[94] *See e.g.* Exhs. 73, 74, 75 (Southeast Conference publications prepared by Rain Coast Data).

[95] *Id.*

[96] *See e.g.* Exhs. 73, 74, 75 (Southeast Conference publications prepared by Rain Coast Data).

[97] *Id.*

[98] 2016 LRMP FEIS at 3-442, Table 3-279.

timber industry, which is so small that it fails to qualify as a relevant economic sector in the region.[99] 21st century economic activity in Alaska relies on ecosystem values, particularly values associated with fish, wildlife, and scenery. In 2011, wildlife hunting and viewing generated 2,463 jobs in southeast Alaska, $138 million in labor income and $360 million in total economic output.[100] The DEIS did not discuss these trends in any meaningful way. Any further NEPA analysis for this project should include an analysis that looks at local socio-economic conditions, including the role of the fisheries and visitor economies in Ketchikan.

B. The Forest Service needs to confront the implications of relying on market demand from China

This project purports to provide employment opportunities for southeast Alaska residents in the timber "industry." The 2016 LRMP timber goals and objectives require the Forest Service to provide for a timber processing industry. The plan goal for timber directs the Forest Service to "[m]anage the timber resource for *production of saw timber and other wood products* from lands suitable for timber production."[101] The amended objective similarly directs the Forest Service to supply volume to "local mills."[102] Bid values for this project are negative for all alternatives, ranging between -$83.49 (alt. 4) and -$96.87 (alt. 3) at "high market" scenarios – i.e. some local processing and -$37.87 to $51.01 at a low market scenario with little local processing.[103] Notably, at these values, even raw log exporters believe the project is a money-loser, and industry groups believe the project wastes time by "analyzing and marking harvest units that have no hope of being financially viable."[104]

In 2007, the Regional Forester developed a limited interstate shipment policy, and expanded it in 2009 to allow timber sale purchasers to export 50 percent of total Sitka spruce and western hemlock sawlog volume.[105] The export policy further reduces the return to the local economy from the public spending on the timber program, by diminishing local utilization of timber and local manufacturing employment. The 2016 LRMP FEIS shows that the Forest Service intends to authorize the export of roughly two-thirds of the timber removed from federal forests as raw logs.[106] Because the Forest Service's justification for this project relies primarily on local economic benefits, raw log exports and interstate shipments are the important issue with regard to the economic analysis for this project. The DEIS needed to assess the legal, environmental and employment consequences of the policy.

A major legal concern is that this is an unlawful policy that arbitrarily conflicts with the purpose of the Organic Administration Act and the Forest Service's local processing regulations for Alaska. The regulations provide five factors for the Regional Forester to consider in determining whether or not to approve exports. The Limited Export Policy is an unreasonable interpretation of the regulation and in fact expressly undermines the regulatory policy. In fact, as shown by the Forest Service's own mill utilization reports, the

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[99] Exh. 100 (Rain Coast Data 2014); Exhs. 73, 74, 75.

[100] Exh. 77 at 24 (EcoNorthwest 2014).

[101] 2016 LRMP at 2-5.

[102] *Id.*

[103] DEIS at 28.

[104] Exh. 6 (KRBD 9.9.20).

[105] 2016 LRMP FEIS, Appx. H at H-4-5.

[106] 2016 LRMP FEIS at 3-492-3-493, Tables 3.22-8, 3.22-9

export policy has caused the precise result that the regulation sought to prohibit – exports of jobs along with raw logs. The 2016 LRMP FEIS showed a clear decline in actual "industry"/mill employment relative to federal timber removals over time, with pre-export policy federal timber (2002 – 2007) supporting a third more processing jobs per MMBF.[107]

The DEIS provides a Figure 14 showing that between 2016 and 2019, between a third to more than half of federal timber is raw log exports.[108] This table is not helpful in terms of assessing the eventual destination of South Revilla timber, however, because most of the "milled"/canted volume it shows is Prince of Wales Island timber milled in Klawock. Indeed, the DEIS makes clear that milling in Klawock is a near impossibility due to transportation costs.[109] In 2016, the Forest Service recognized that towing logs from North Kuiu Island to Klawock – a much shorter distance – was economically infeasible, even for 100% export.[110]

As shown in the Forest Service's 2016 market demand study, Viking Lumber monopolizes the small amount of federal timber utilized for mill production:

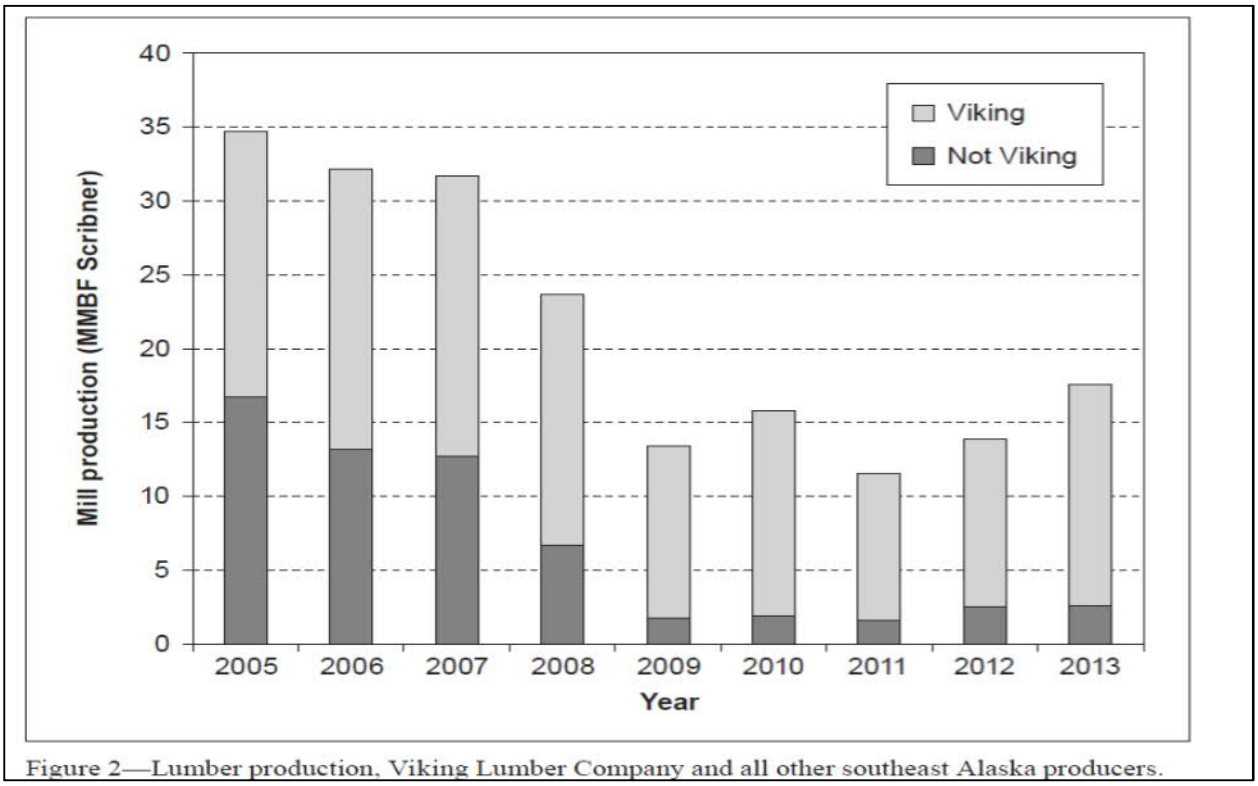

Figure 2—Lumber production, Viking Lumber Company and all other southeast Alaska producers.

The DEIS needs to identify the destination of <u>*Alcan/Tranpac's timber*</u> with actual data to support its assumptions.

In 2016, the Forest Service determined that the North Kuiu timber sale appraised at a *deficit* of $2.1 - $2.3 million if appraised for 50% round-log export from Klawock and 50% manufacturing there; however, when appraised for 100% export from Klawock (i.e., avoiding in-Alaska manufacturing) the sale appraised at $244,481 ($10.62/MBF). When appraised for

[107] *Id.* at 3-486-3-488, Tables 3.22-4, 3.22-5, 3.22-6.

[108] DEIS at 55.

[109] *Id.* at 53, 55.

[110] Exh. 10 (Enriquez 2016).

100% export from Kake, adjacent to the sale, the value was $450,293 ($19.55/MBF). The goal of the 100% export appraisal was to meet FY 2016 timber targets by getting a positive appraisal value to allow the sale to be offered. This caused the Petersburg District Ranger to request designation of Kake as an export site/appraisal point for future projects in the area as well.[111] The Forest Service is even more desperate now to meet timber targets.[112]

Given the Petersburg Ranger District's recent decision to authorize 100% raw log export from federal lands on Kuiu Island and the Forest's longstanding practice of doing so elsewhere, it seems possible that even the current general export policy (allowing 50% export) functions as a floor rather than a limit.

The destination for timber sold from this project – *likely all of it, given the project's location remote from Alaskan mills* – is China, and the Forest Service must disclose data and acknowledge the actual disposition of timber from this project, and analyze the potential for 100% export based on past practices, in a revised DEIS. The job transfer to foreign timber processors is critical to evaluating the relationship between this project and stated regional economic purposes, but the DEIS has ignored this. According to long-time Republican campaign consultant Ed Rollins, the Forest Service's own reports indicate that "China is the largest consumer of Tongass raw log exports, and drives the market demands for the production in Southeast Alaska."[113] Rollins found that Chinese domination of federal timber "does nothing to bolster the U.S. economy" and that "at the simplest level, American taxpayers are paying for the economic benefits of China."[114] Thus, there is a significant concern that the Tongass National Forest timber sale problem will enable China to "further destroy the old growth forest and world-class salmon habitat of the Tongass, which when protected generates incredible revenue for the state of Alaska."[115]

C. *The DEIS needs to disclose large taxpayer losses caused by the Tongass timber sale program*

The Forest Plan "desired conditions" related to the timber sale program ask the agency to "[m]anage the timber resource … in an economically efficient manner."[116] The agency believes supplying between 79 and 92 MMBF will "better maintain flexibility and stability in the timber sale program."[117] The Forest Service has disclosed average timber project costs of $56/MBF for sale planning, $22/MBF for engineering support and $37/MBF for sale administration.[118] This project's estimated total planning cost of $5.1 million is considered "sunk" since funds are already allocated or spent.[119] Total disclosed sale administration costs on Table 16 (not including engineering support), are $8.5 million, $7.3 million and $8.2

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[111] *Id.*

[112] Exh. 134 (Stewart 2017)

[113] Exh. 65 (Rollins, E. 7.15.2020) Rollins, E. 2020. Maintain Roadless Rule to protect America against China ravaging Tongass National Forest. In: Washington Times, Wednesday, July 15, 2020.

[114] *Id.*

[115] *Id.*

[116] 2016 Tongass National Forest Land and Resource Management Plan at 2-5.

[117] DEIS, ES at iv.

[118] *Id.* at 56.

[119] *Id.*

million by alternative.[120] The DEIS does not project that the Forest Service will realize any revenue from these expenditures.

The DEIS failed to disclose significant costs caused by this project. NEPA's hard look requirement mandates that a cost-benefit analysis be reasonable.[121] This means that the analysis must "*fully and accurately*" disclose the costs.[122] There must be sufficient information to "balance a project's economic benefits against its adverse effects."[123] The DEIS thus needed to provide the information the public needs to evaluate this project with respect to timber sale program costs.[124] Such an analysis would respond to the increasing national concern, particularly from national conservatives, regarding the "Chinese government's economic gain at the expense of American interests."[125]

The Tongass National Forest has a long history of fleecing taxpayers. In 2001, when the Forest Service promulgated the Roadless Rule, the Region 10 (Alaska) timber sale program was one of the two worst performing ones among all Forest Service regions nationally, by generating the largest losses per thousand board feet sold, and ten times the taxpayer loss of all other Forest Service Regions combined.[126] This poor performance primarily reflected higher administrative costs and higher road construction costs.[127] According to a September 2020 report by Taxpayers for Common Sense, Tongass timber sales "consistently generated less revenue than the USFS spends to administer them, resulting in large net losses to U.S. taxpayers.[128] In 2019, the USFS lost $16.1 million. Since 1980 it has lost $1.7 billion, or $44 million per year on average. And the Tongass could lose nearly $190 million over the next five years from planned sales.[129] Over the last five years, the average timber sale revenue has dropped to $590,000 per year.[130] Taxpayers for Common Sense currently estimates that the Forest Service's proposed action for this project will cost taxpayers $58 million, based on average losses of $635,000 per million board feet sold.[131]

The road construction costs of this project are staggering and range between $9.6 million and $10.4 million for between 44.5 and 48.4 miles of temporary and new national

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[120] *Id.* at 57.

[121] 36 C.F.R. § 219.12(g); 40 C.F.R. §§ 1502.14, 1502.16; 40 C.F.R. § 1502.24; *Natural Resources Defense Council,* 421 F.3d at 811-12.

[122] *Sierra Club v. Sigler*, 695 F.2d 957, 975-76 (1983).

[123] *Hughes River Watershed Conservancy*, 81 F.3d at 446.

[124] *Columbia Basin Land Protection Ass'n,* 643 F.2d at 594.

[125] Exh. 64 (Hayworth, Hon. Rep. J.D. (R-Ariz), 8.24.2020)

[126] Roadless Area Conservation Rule FEIS at 3-298, Table 3-57 (Region 3 and Region 10 generated taxpayer losses of $178 and $179 per thousand board feet, respectively, 22 times as much the only other region that operated timber sales at a deficit).

[127] *Id.* at 3-303.

[128] Exh. 66. Taxpayers for Common Sense. 2020. Cutting Our Losses after 40 Years of Money-Losing Timber Sales in the Tongass.

[129] *Id.*

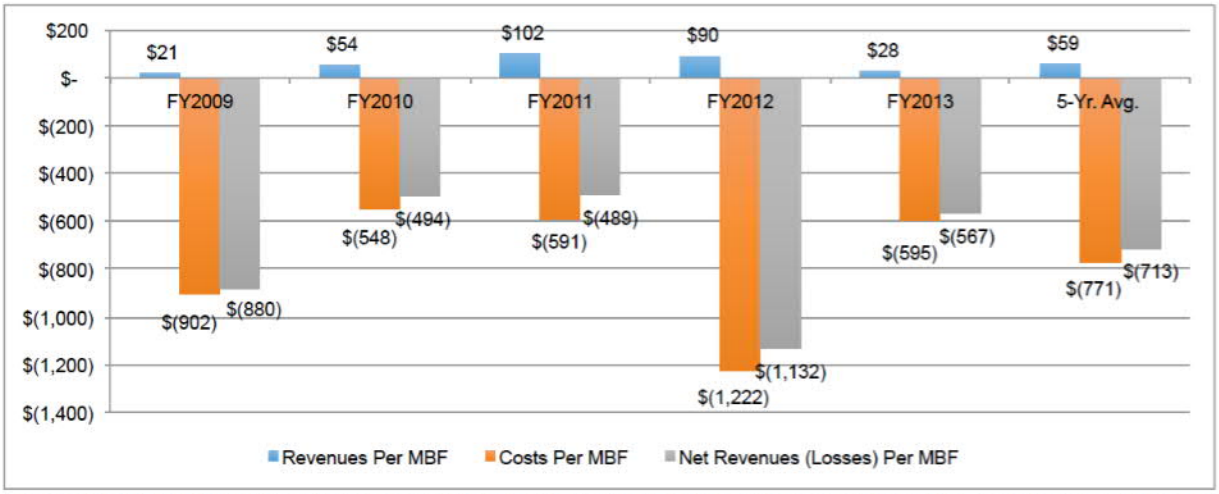
[130] *Id.*

[131] Exh. 67. Taxpayer for Common Sense. 2020. Forest Service moves forward with money-losing timber sale in Alaska.

forest system road.[132] Total transportation costs, including road construction, maintenance, log transfer facility, and road storage are $11,740,448 (alt. 4); $11,587,558 (alt. 3) & $12,390,979 (Alt. 2.)[133] Once the pulp mill era ended, the Forest Service began to expend increasing amounts of public funds – typically over $20 million annually from 2003-2007 – building roads for timber sale purchasers.[134]

The cost disclosures in the DEIS fail to show that taxpayers absorb much of the cost of timber road construction. Taxpayers for Common Sense's table (below) shows that the Tongass National Forest spent $632 million from 1999-2018 on timber sale preparation, reforestation *and timber roads*.[135] When adding in road construction and maintenance costs, the Tongass National Forest's taxpayer losses rose to $33.8 million a year.[136] Based on these data, the taxpayer losses were $612,000 per million board feet of timber sold over two decades.[137] Headwaters Economics utilizes similar timber budget cost categories and identified an even higher average taxpayer cost of $771,000 per million board feet sold between 2009 and 2013.[138]

Tongass National Forest Timber Sale Revenues and Costs, FY2009 to FY2013 and 5-Yr. Avg.



Source: Costs are from the budget table in this report; revenues and cut volume are from U.S. Forest Service Cut and Sold reports.

[132] DEIS at 28.

[133] *Id.* at 29.

[134] Exh. 7 (Mehrkens 2012).

[135] Exh. 11 (Taxpayers for Common Sense 2019).

[136] *Id.*

[137] *Id.*

[138] Exh. 8 (Headwaters Economics 2014).

TAXPAYERS for COMMON SENSE

Twenty Years of Timber Losses in the Tongass National Forest 5

Tongass Timber Program: Receipts, Expenses, Losses (FY1999-2018)

($ in millions)

FISCAL YEAR	TIMBER VOLUME SOLD (MBF)	TIMBER RECEIPTS	TIMBER EXPENSES	NET RECEIPTS	TIMBER RECEIPTS: ($2018)	TIMBER EXPENSES ($2018)	NET RECEIPTS ($2018)
2018	9,211	$0.4	$18.1	**-$17.7**	$0.42	$19.07	**-$17.65**
2017	20,808	$1.0	$17.8	**-$16.7**	$1.04	$18.20	**-$17.16**
2016	13,535	$0.5	$18.5	**-$18.1**	$0.47	$19.40	**-$18.92**
2015	22,625	$0.3	$19.7	**-$19.5**	$0.29	$20.91	**-$20.62**
2014	105,523	$0.6	$22.4	**-$21.8**	$0.6	$23.8	**-$23.1**
2013	15,866	$0.6	$19.7	**-$19.1**	$0.6	$21.2	**-$20.6**
2012	52,483	$1.9	$21.5	**-$19.6**	$2.0	$23.5	**-$21.5**
2011	44,190	$3.3	$18.0	**-$14.8**	$3.7	$20.1	**-$16.5**
2010	45,632	$1.9	$22.3	**-$20.4**	$2.2	$25.7	**-$23.5**
2009	22,670	$0.6	$26.4	**-$25.7**	$0.7	$30.8	**-$30.1**
2008	5,351	$0.4	$23.5	**-$23.1**	$0.5	$27.4	**-$27.0**
2007	30,392	$0.3	$25.1	**-$24.8**	$0.3	$30.4	**-$30.1**
2006	85,007	$0.8	$27.9	**-$27.1**	$1.0	$34.8	**-$33.8**
2005	65,075	$0.4	$34.4	**-$34.0**	$0.5	$44.2	**-$43.7**
2004	87,072	**-$4.3**	$36.9	**-$41.2**	**-$5.7**	$49.1	**-$54.8**
2003	36,489	$2.0	$31.0	**-$29.0**	$2.7	$42.3	**-$39.6**
2002	24,372	$1.3	$33.4	**-$32.2**	$1.8	$46.7	**-$44.9**
2001	49,592	$1.8	$35.0	**-$33.2**	$2.6	$49.6	**-$47.1**
2000	170,329	$6.9	$23.8	**-$16.9**	$10.0	$34.7	**-$24.7**
1999	61,426	$5.3	$33.8	**-$28.5**	$8.0	$51.0	**-$42.9**
2009-2018 TOTAL	**362,544**	**$11.0**	**$204.4**	**-$193.4**	**$12.1**	**$221.8**	**-$209.7**
1999-2018 TOTAL	**977,649**	**$25.9**	**$509.4**	**-$483.5**	**$33.8**	**$632.0**	**-$598.2**

Taxpayers for Common Sense has found that total taxpayer costs have declined over the past decade – *but largely because of declines in the amounts of timber cut.*[139] However, the public cost per MBF offered for sale is still on the rise.[140] In other words, the higher volume alternatives have greater adverse cost consequences.[141]

Additionally, timber agency reports indicate that the Forest Service is considering subsidizing timber sale purchasers for costs associated with Chinese tariffs.[142]

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[139] Exh. 11 (Taxpayers for Common Sense 2019).

[140] *Id.*

[141] *Id.*

[142] Exh. 98 (DOF 2018 annual report).

The Forest Service should substantially downscale the timber volume in all alternative to meet its economic efficiency goals.

D. The DEIS needs to consider deferring timber take on federal lands given large volumes of timber from other agencies

Defenders requests that a revised DEIS re-evaluate whether the Alaska Mental Health Trust ("AMHT") and/or other timber agencies that operate in Southeast Alaska can supply raw log exports to China, enabling the Forest Service to scrap this export project. These other sales, being pursued by the Forest Service's partner timber agencies, reduce the demand for federal timber and otherwise independently meet the Forest Service's apparent objectives for regional timber demand, employment of non-resident loggers, and export of processing jobs to Chinese mills.

Federal timber supplied slightly less than half of the timber take from southeast Alaska forests from 2002 – 2014.[143] The 2016 Forest Plan Amendment FEIS projected a proportional increase in non-federal timber take such that non-federal logging will comprise roughly two-thirds of the projected total take over the next fifteen years.[144] This change reflects a substantial timber supply coming from the state of Alaska, Sealaska corporation and AMHT.[145] For example, Appendix C to the Prince of Wales Landscape Level Analysis FEIS identified 98.6 MMBF in planned State of Alaska timber sales.[146] AMHT now has 101 MMBF available from 4,695 acres, and has another 12,350 acres pending the finalization of its land exchange with the Tongass National Forest, which will amount to nearly 300 MMBF based on the volume available from its existing lands.[147] The University of Alaska likely will be sacrificing another 100 MMBF of timber to the cause.[148] And there may be another 750 MMBF available from Sealaska corporate lands over the next 15 years.[149] These potential timber removals – well over a billion board feet – merit detailed consideration in a revised South Revilla DEIS, as potential replacements for federal timber in international raw log export markets.

The Forest Service has 58.4 MMBF of old-growth timber ready for sale from the Wrangell and Petersburg Districts.[150] That plus on-going timber sale on Gravina Island and the in-process 8,000-acre land exchange to AMHT on south Revillagigedo Island will old-growth and second growth timber available for Alcan/Transpac's export business[151] – all of it timber extraction over which the public has little or no power.

E. The DEIS fabricates a role for the South Revilla project

The DEIS *fabricates* a South-Revilla-project-dependent industry of "50 sawmills and timber purchasers," displayed in Table 12 (p.51) throughout southeastern Alaska from Kethikan to Haines. The project's IDT has done this to justify this project, but this fabrication

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[143] 2016 LRMP FEIS at 3-486.

[144] *Id.* at 3-493.

[145] *See id.*; FEIS Vol. II, Appx. C at C-11-15

[146] Prince of Wales Landscape Level Analysis FEIS, Appx. C.

[147] *Id.*

[148] *Id.*

[149] *Id.*

[150] DEIS at 61.

[151] *Id.*

unravels as fantasy when the information the DEIS presents is inspected. This is a key point, because understanding the DEIS' claim provides a reality that undercuts the premise of this project, other than for timber export.

The table below reorganizes DEIS Table 12, ordering the 50 timber industry businesses according to their locations, and also including the Forest Service's basic available information on their activity or non-activity. Forest Service information we have compiled shows below in green and blue highlighting the businesses that actively process or trade in Tongass timber; these amount to only 20 of the 50 that the DEIS table claims. Except for the two large businesses – Viking and Alcan – 18 of those 20 have a very small timber demand, not explored by the DEIS. The majority of the businesses in the table – the ones with a yellow highlight or white background – are inactive or rely on non-Tongass timber.

ACTIVE & INACTIVE FOREST PRODUCTS COMPANIES			
PRINCE OF WALES AREA		**CENTRAL SE ALASKA**	
Coffman Cove	Fair & Square Milling (Don Nicholson)	**Wrangell**	Mike Allen Enterprizes
Craig	Alaska Musicwood Industries, LLC (John Helliwell)	**Petersburg**	Andrew Cowan
	Alaska Specialty Wood (Brent Cole)		Falls Creek Forest Prod.
	Jerry Baker		Jerod Cook
	Shortcut Timber Salvage (Robert Patten)		Seakwood.com
	St. Nick Forest Products		Spruce Point Mill
	Wesley Johnson		The Mill
	William Kaufman		The Woodshed
	Windy Point Sawmill & Bobcat Service (Fred Ensign)	**NORTHERN SE ALASKA**	
Edna Bay	Crew Lumber	**Port Alexander**	Cedar Street Enterprises
Klawock	Joe Sieling	**Kake**	Kevin Merry
	Viking Lumber Co.		Luther J. Coby
Naukauti	Alaska Milling & Fabrication (David Lapeyrouse)	**Tenakee Springs**	Sterling C Chew
	William Musser		Tenakee Logging Co.
Thorne Bay	Cornerstone Excavation Services LLC (Tim Lindseth)	**Hoonah**	D and L Woodworks
	Ernie Eads		Dan Fanning
	James Stevens		Icy Straits Lumber
	JK Forest Products LLC (J. Kohn)	**Gustavus**	Glacier Bay Woodcraft
	JRS Custom Lumber (James Stevens)	**Haines**	Chilkat Valley Sawmill
	James Harrison		Dark Horse Lumber
	K & D Lumber (Keith Landers)		Mud Bay Lumber, LLC
	Peavey Log (Dan Peavey)		Dan Fanning
	Pitch Enterprises (Cary Pitcher)	**Yakutat**	Yakutat Supply
	Ralph Dean Blankenship		
	Spencer Pitcher		
	Thuja Plicata Lumber (Ernie Eads)		
	Western Gold Cedar Products (James Harrison)		
KETCHIKAN AREA			**Color Codes**
Ketchikan	Alcan Timber Inc. (NO MILL)	(from Parrent 2019)	**Active**
	Cutting Edge Wood Products	(from Parrent 2019)	**Idle**
	Dale R. Bakula Construction		**Active** (CY19 VUC Rept.)

Moreover, apart from timber exporter Alcan, only the two other timber businesses in Ketchikan – businesses whose nature the DEIS fails to characterize – are reasonably close to

the project area. The DEIS' assumption and implication *is ludicrous and misleading* that mills as far away as Wrangell, Petersburg, Port Alexander, Kake, Tenakee, Hoonah, Gustavus, Haines and Yakutat could economically use a significant volume[152] of timber from South Revilla – if any volume from there at all. The DEIS fails to make the case for utilization by those far away mills or manufacturers, and it similarly fails for closer ones on Prince of Wales Island, for which the water transport distance is likely cost prohibitive. There are only 12 purchasers of Tongass timber on Prince of Wales, and several of those are only micro-sale purchasers. Further NEPA analysis is necessary to drill down into what likely purchasers besides Alcan and (possibly) Viking actually exist – the IDT should have made direct contact with the few likely forest products businesses do determine actual facts and potentials (based on likely, specific transport costs) rather than making specious claims. This necessitates a revised DEIS. Additionally, data showing the actual destinations and volumes of timber purchased by Alcan/Transpac needs to be disclosed. Estimates from independent reviews of the Forest Service's timber sale program identify potential taxpayer losses of up to $58 million caused by this project.

F. Conclusion

The Forest Service should cut those losses to the $5 million in already sunk costs and (by rights) abandon this project or (at a minimum) proceed with greatly downscaled alternatives that involve no new road construction.

IV. The wildlife habitat impacts are unacceptable

Remaining old-growth habitat for wildlife in the project's area Wildlife Analysis Areas (WAAs) is at a precariously low level. Alternatives 2 and 4 would eliminate wildlife travel corridors "in at least" 38 areas and eliminate 21.8 percent of existing identified deer winter range on south facing slopes only.[153] In general, the cumulative loss of key habitat features for deer, wolves, black bear, marten and forest bird Management Indicator Species ("MIS") in particular is alarming. Between this project and even more intensive clearcutting on Alaska Mental Health Trust forestland, it is hard to see how the Forest Service will meet requirements to provide "an abundance and distribution" of sufficient habitat to maintain well-distributed, viable populations of existing native species in the planning area.[154] In Forest Service lands in VCUS 7460, 7470 and 7530, there has been a 46 percent loss of low elevation (≤800') high volume productive old-growth and *a loss of two-thirds* of interior forest old-growth.[155] Serious questions arise from proposed action and alternatives and the insufficient information and analysis in the DEIS, concerning numerous TLMP goals and objectives for wildlife, which range from maintaining sufficient habitat capability needed to provide opportunities for hunting, trapping and wildlife viewing, preventing species from being listed as sensitive due to degraded habitat conditions, etc.

We request that a revised DEIS provide comprehensive analysis of project impacts on project area management indicator species (MIS) and sensitive species and consider measures that will mitigate adverse impacts (such as increased buffers for multiple wildlife

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[152] We understand that some red cedar from southern Southeast has been used by manufacturers in region's north to make hot tubs, but the DEIS provides no information about this and we have no details.

[153] *Id.* at 30.

[154] Forest Plan at 4-85.

[155] Exh. 5, Table 4 (Reeck 2014).

species, increased forest structure retention requirements and effective road closures, etc.). The revised DEIS should document surveys for wildlife species present in the project area and discuss their locations and preferred habitat uses and do more than a quantitative assessment of productive old growth losses at various scales. Within the project area there are multiple wildlife species such as endemic mammals, vulnerable interior forest birds, potentially irreplaceable denning and nesting habitats and other features that require a comprehensive survey effort.

A. The DEIS should develop a substantially downscaled alternative to respond to local deer subsistence needs and lack of winter habitat.

We have significant concerns about the lack of high value winter deer range remaining in the project area. Many of the cutting units will likely abut past clearcuts where canopy closures are now or will soon be occurring. The area is already heavily fragmented and contains large portions of what is currently, or soon to be, unsuitable deer habitat due to canopy closure in the extensive created openings and second-growth stands.

Local deer abundance reached a low point in 2008 after several severe winters but local biologists anticipate some recovery following a series of mild winters beginning in 2013.[156] However, pellet counts and light forage activity suggest populations are below management objectives and carrying capacity in the project area and the larger Unit 1A.[157] Revilla is by far the most important island in Unit 1A for Ketchikan, Saxman and Metlakatla hunters, supporting roughly ¾ of the hunters in any given year and supplying between 60 and 80 percent of the harvested deer.[158]

In the Alaska National Interest Lands Conservation Act (ANILCA), Congress announced the following policy: "[c]onsistent with sound management principles, and the conservation of healthy populations of fish and wildlife, the utilization of public lands in Alaska is to cause the least adverse impact possible on rural residents who depend on subsistence uses of the lands."[159] Congress intended for federal agencies to incorporate a factor of safety into resource management decisions:

> The committee intends the phrase "the conservation of healthy populations of fish and wildlife" to mean the maintenance of fish and wildlife resources and their habitats in a condition which assures stable and continuing natural populations and species mix of plants and animals in relation to their ecosystems, including recognition that rural residents engaged in subsistence uses may be a natural part of that ecosystem; minimize the likelihood of irreversible or long-term effects of such populations and species; and ensures maximum practicable diversity of options for the future. The greater the ignorance of resource parameters, particularly of the ability of a population or species to respond to changes in its ecosystem, the greater the safety factor must be.[160]

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[156] Exh. 35. Dorendorf, R. 2020. Deer management report and plan, Game Management Unit 1A: Report period 1 July 2011-30 Juen 2016, and plan period 1 July-30 June 2021. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&P-2020-24, Juneau.

[157] *Id.*; DEIS at 73.

[158] Exh. 35. Dorendorf, R. 2020

[159] 16 U.S.C. § 3112(1).

[160] Senate Committee on Energy and Natural Resources, Alaska National Interest Lands Conservation Act, S.Rep. No. 413, 96th Cong., 1st Sess. 233 (1979), reprinted in 1979 U.S.C.C.A.N. 5070, 5177.

The Forest Service has failed to meet this standard for decades by disproportionately removing deer winter range. Most of the logging in southeast Alaska occurred in areas favored by deer. The DEIS recognizes "a significant possibility of a significant restriction on subsistence uses on deer due to changes in abundance and competition."[161] The DEIS admits that additional liquidation of deer winter habitat and loss of elevational connectivity would have immediate adverse impacts to deer, causing a decline in the deer population that would intensify later in time as the canopy closes.[162] Worse-than-average winter weather and wolves can cause further fluctuations.[163] The DEIS predicts the deer population will decline.[164] All action alternatives, and particularly Alternatives 2 and 4 will reduce high volume and large tree productive old-growth on south facing slopes alone to unacceptable levels; other cumulative losses include low elevation, higher volume stands, particularly in WAAs 406 (40%) and 407 (63%).[165] All alternatives increase fragmentation, particularly at lower elevation, causing population declines and reducing population resiliency.[166] These disclosures alone warrant downscaled alternatives to provide for rural subsistence uses.

Experimental Forest Service efforts to create canopy openings in second-growth forests will not replace winter habitat.[167] ADF&G acknowledges that:

> *We should better inform the public regarding the effects of logging on deer populations, so that they are aware of tradeoffs between timber harvest and wildlife.* We anticipate that logging related reductions in important winter habitat will reduce deer carrying capacity for decades to come. The long term consequences of habitat loss include loss of hunting opportunity and the inability to provide for subsistence needs of rural residents.[168]

Given the habitat deficit in the project area and its classification as an "intermediate snow area,"[169] the Forest Service should cease planning on this project, and otherwise, consider specific and more protectives measures than in the past to address key winter habitat needs for deer:

> For ungulates at temperate and higher latitudes, winter is often the limiting season for survival, when cold temperatures and snowfall restrict the availability of forage and increase costs of movement. In addition, vulnerability of ungulates to predators can be higher in snow-covered landscapes because of reduced nutritional condition and increased cost of movements for prey relative to predators. Subsequently, habitat selection of ungulates in winter can be strongly shaped by the

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[161] DEIS at v.

[162] *Id.* at v, 73.

[163] *Id.* at 73.

[164] *Id.* at v.

[165] *Id.* at 74.

[166] *Id.*

[167] Exh. 99. Bethune, S. 2015. Unit 2 deer at 4-5. Chapter 4, pages 4-1 through 4-15. [*In*] P. Harper and L. A. McCarthy, editors. Deer management report of survey and inventory activities 1 July 2012-30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-3, Juneau (emphasis added).

[168] *Id.*

[169] DEIS at 73.

> landscapes of energetic costs and risk of death. *As snow depth increases, values of habitat to wildlife may be completely reversed from low-snow conditions.* As habitat types with abundant forage but little canopy cover to intercept snow become unusable, habitats with adequate forage and good canopy cover become preferred.[170]

As Person and Brinkman, explain, even if climate change results in milder winters, precipitation and extreme storm probabilities may increase, increasing risks of deep snow events that can substantially reduce deer numbers to low levels for extended periods of time.[171] Because Revilla deer are susceptible to both wolves and occasional severe winter die-offs, the DEIS needed to consider alternatives that retain existing winter range, including north-facing slopes, and areas of lower quality habitats that provide some features for deer.

The Forest Service wrongly assumes that only south-facing slopes provide winter deer habitat. The Forest Service needs to protect remaining deer habitat of any value. It should identify *north-facing* deer winter habitat as deep snow habitat. North-facing habitat is important because many deer do not have access to south-facing habitat, such as those deer inhabiting north-facing watersheds, and deer inhabiting north facing habitat are most affected by snow and most dependent on deep snow habitat.[172] Research by deer experts Schoen and Kirchhoff showed that in southern parts of Southeast Alaska, elevation and overstory characteristics are more important to deer than whether a stand is on a south- or north-facing slope.[173] Table 22 in the DEIS likely underestimates the acreage loss of deep-snow habitat in project area WAAs from past logging, and the methodology used here could result in clearcutting hundreds of acres of north facing deep snow habitat that now have heightened importance because of the high loss of better winter habitat.[174] All remaining deer winter habitat on federal land in the project area is critically important, regardless of its quality, given past losses and future losses that can be anticipated on non-federal lands in the area.

The DEIS also needs to distinguish between different forest stand qualities as deer habitat. As explained in wildlife expert Matt Kirchhoff's comments on the recent Prince of Wales Island timber project, the failure to identify habitat qualities for deer and separately consider actual deep snow habitat is a major flaw. The DEIS should assess the cumulative change in deep-snow habitat values for deer based on SD67 stands below 800 feet in elevation, not just HPOG which does not provide the same snow interception and forage habitat features as an SD67 stands.

The revised DEIS should also be clear about how it considers and quantifies cumulative effects. Alcan/Transpac recently clearcut about 3,276 acres of Alaska Mental Health Trust (AMHT) forestland and built over 25 miles of road, mostly in low elevation areas, reducing habitat for deer adjacent to the project area.[175] The DEIS notes that upcoming logging by AMHT on its pending land exchange will worsen ongoing declines in habitat

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[170] *Id.* (emphasis added)(internal citations omitted).

[171] Exh. 92 at 149 (Person and Brinkman 2013).

[172] Exh. 17 (Kirchhoff 2018).

[173] Exh. 5 (Reeck 2014).

[174] *See id.,* Table 15 (identifying higher levels of historic and deep snow habitat than considered in the DEIS).

[175] *Id.*

capability.[176] How much? The revised DEIS should explicitly factor these future habitat changes into the cumulative effects analysis for deer. Also, both the Alaska Mental Health Exchange Act and the pending Alaska Roadless Rulemaking (obliterating protection of roadless areas) will affect the corridor analysis because the corridors rely on or transit the Carroll and North Revilla inventoried roadless areas. How will the planned exemption and exchange affect access patterns for deer – or other wildlife – particularly in the Carroll IRA?

B. Impacts to Alexander Archipelago Wolves

The Forest Plan also instructs the agency to "[p]rovide, where possible, sufficient deer habitat capability to first maintain sustainable wolf populations, and then to consider meeting estimated human deer harvest demands." Projected project area deer densities of 11 and 9 deer/mi² in WAAs 406 and 407 fall well below Forest Plan guidelines.[177] The combined habitat losses from this project and future cuts on Alaska Mental Health Trust forestland in the area will result (even considering unroaded areas) in insufficient habitat to maintain wolf populations, let alone hunting opportunities. There are also increased risks to project area wolves associated with construction of the Shelter Cove Road.

The combination of lower deer populations and heavily roaded areas accessible from population centers can increase the risk of unsustainable harvests of wolves or even pack depletion. The DEIS failed to provide sufficient site-specific discussion of baseline information about project area wolves, adverse impacts to them and their prey. The DEIS failed to meet the Forest Service's analytical responsibilities under NEPA and to satisfy the wildlife viability provisions under NFMA and the Forest Plan.

There are two wolf packs – the East Chuck pack and the Carroll Inlet pack that inhabit the project area.[178] The DEIS assessed impacts based solely on quantifications of future deer densities and road densities.[179] It ignores the important habitat feature of den buffers entirely, fails to consider changing access patterns, and appears to grossly underestimate the road densities used to evaluate impacts.

A revised DEIS is needed to do a more thorough job of evaluating road density issues. Road density increases contribute to wolf population declines by causing increased trapping and hunting rates. Studies on Prince of Wales Island found that when *total* road density surpassed .49 mi/mi², mortality from trapping and hunting increased sharply. It doubled at .66 mi/mi², tripled at 1.19 mi/mi² and quadrupled at 1.63 mi/mi².[180] This kind of study has not been performed for Revilla Island, but with Ketchikan now being connected to the project area, similar to the POW situation, this is the best available science. Moreover, as shown by Person & Brinkman (2013)[181] and Person & Russell (2008),[182] it is total road density that is the important metric for wolf population sustainability, not open road density;[183] and it is the

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[176] DEIS at 74.

[177] DEIS at 77.

[178] Exh. 2 (Smith 1987).

[179] DEIS at 77-78.

[180] Exh. 70 (CBD et al. 2020).

[181] Exh. 92.

[182] Exh. 145 (not on thumb drive; emailed with these comments)

[183] The land area of concern is size of a typical wolf pack home range (about 100 sq-miles), which WAAs approximate. A better estimation can be done in GIS with a 100 mi² moving window (see one of the David Person declarations concerning the Big Thorne project).

total road density all the lands in a WAA regardless of land ownership that matters (i.e. the cumulative effects).

For the existing condition for total road density on all land ownerships in WAAs 406 and 407, the South Revilla DEIS greatly under-reports road densities, in comparison to the densities given in the Saddles Lakes project's DEIS and FEIS of about six years ago. *See the table below.* This cannot be, so there is definitely an error in the EIS for one or the other of these projects. The South Revilla DEIS does not note, much less explain, the substantial discrepancy.

Total Road Density, on all land ownerships (mi/mi^2)		
	Saddle Lakes EISs	**South Revilla DEIS**
WAA 406	1.5 (FEIS Table 44)	0.8 (Table 25)
WAA 407	2.0 (FEIS Table 44)	1.3 (Table 25)
WAA 406 & 407 combined	1.7 (DEIS Table 19)	?

A revised South Revilla DEIS is needed to resolve the discrepancy and to also include an estimate of the change in road density that will result from logging by the Alaska Mental Health Trust on the lands it is about to receive in the project area, from the Tongass National Forest. The adjustment for anticipatable road building on AMHT's new land should be projected onto cumulative effects for all of the action alternatives.

The DEIS fails to further evaluate road density concerns based on the assumption that there is no mortality risk for the project area.[184] Road density was less an issue in the past due to the lack of a road connection to a community (Ketchikan).[185] The DEIS thus wrongly ignored intensification of cumulative road density impacts that will result from the construction of the nearly completed Shelter Cove Road, which will connect the community of Ketchikan to both WAA 406 and WAA 407. According to previous Forest Service analyses:

> This connection could increase hunting and/or trapping pressure for deer and wolves and cause a shift from boat based to vehicle access. While wolf mortality has not been identified as a concern in the past, completion of the Ketchikan to Shelter Cove Road could lead to mortality concerns in the future. Using the regression information from Person (2006), the probability of an overkill (i.e., unsustainable harvest) of wolves would increase from 13 percent to 40 percent with the completion of the Ketchikan to Shelter Cove Road.[186]

Roads constructed under this project will add to the concern about the Shelter Cove Road because they will provide expanded easy access within the project area by hunters and trappers from a large, outdoors-oriented urban area.[187] Changing access patterns will present other impacts. Because deer hunters frequently shoot wolves opportunistically,

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[184] DEIS at 77.

[185] Exh. 5 (Reeck 2014).

[186] *Id.*

[187] Exh. 5 (Reeck 2014).

wolves avoid high quality deer habitat during fall deer hunting season where there are high road densities.[188]

Also, because "[w]olf populations are closely tied to populations of deer," declines in deer populations will cause declines in wolf populations.[189] The DEIS measures impacts to wolves in part based on cumulative loss of deep snow habitat on all lands, which would exceed 60 percent in WAA 407 under all action alternatives and reach nearly 45 percent in WAA 406 under the proposed action.[190] The loss of deep snow habitat is actually even higher because the Forest Service's methodology improperly excludes north-facing slopes. Even with this flawed habitat methodology, the DEIS reports (actually under-reports) that cumulative actions have already reduced deer densities by a third and nearly a half in two project area WAAs.[191] The methodology used in 2014 reported an even higher cumulative deer density reduction, 63 percent, in WAA 407.[192] The DEIS admits the project will reduce habitat capability for deer for over a century and a half, with modelled deer densities below Forest Plan guideline and unable to sustain both wolves and hunter demand. Past changes have likely already affected predator/prey equilibriums.

With both deer densities and road densities failing to meet applicable thresholds for wolf viability, the Forest Service should assess this projects addition to cumulative unsustainable harvest mortality risk. The upcoming changes to public access to the project area heighten the need to more thoroughly assess, with a revised DEIS, the risks of unsustainable mortality to wolf packs and islands wolf population more generally, as done partially in previous Forest Service analyses for the project area.

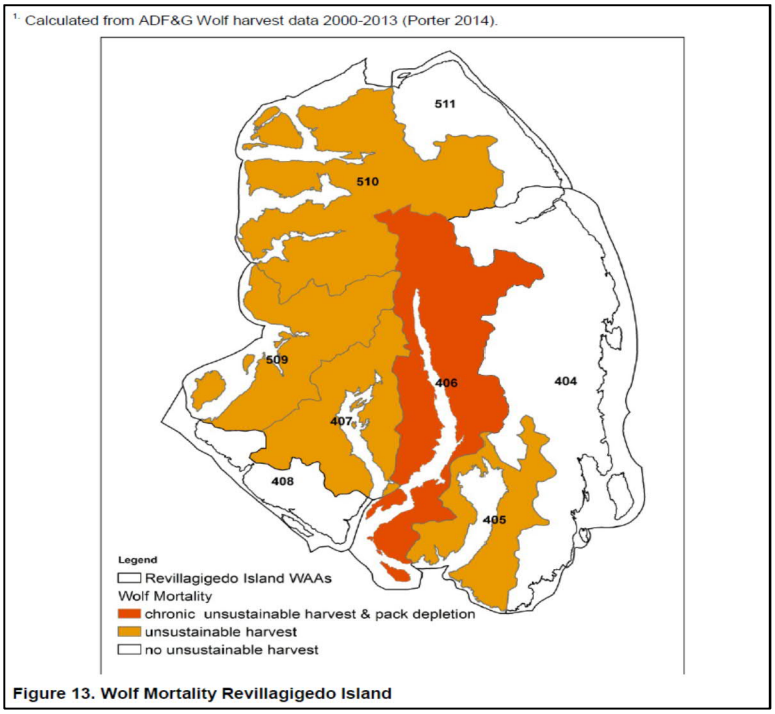

Figure 13. Wolf Mortality Revillagigedo Island

A revised DEIS also needs to re-evaluate effects conclusions reached by the present DEIS, now that the wolf population in Unit 2 (the Prince of Wales area) is once again of uncertain status after the recent take of 165 wolves out of an estimated population of 170 there.[193] Unit 2 wolves previously represented an estimated 37 percent of Southeast

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[188] Exh. 70 (CBD et al. 2020).

[189] Exh. 95. Declaration of Dr. Dave Person ¶23.

[190] DEIS at 75.

[191] *Id.*

[192] Exh. 5. Wolf harvests increased 2008-2011 to double that of prior three years & more than long-term take; 79% trapped, 21% shot.

[193] Exh. 1 (DWC 3.5.20)

Alaska's wolf population, before recent declines.[194] Only 4 of 19 WAAs in the Revilla/Cleveland Peninsula biogeographic province meet the Forest Plan's 18 deer/mi^2 standard.[195] Wolves in Unit 1A (including the project area) and Units 2 and 3 suffer from inbreeding depression, according to a recent genetic study of southeastern Alaska wolves.[196]

Because of the above concerns, the Forest Service should develop a more realistic model to examine the impacts of further logging and roadbuilding rather than rely on a model which "hinges on the very inadequate definition of deep-snow habitat."[197] A revised DEIS needs to consider mitigation measures for wolves which include reducing rather than maximizing road density, avoiding any further cumulative reductions in deer density, and providing large enough roadless areas with deer habitat so that there are functional refugia for wolves, who will have no other security as access increases and future competition with hunters intensifies.[198] The DEIS needs to consider heightened protective measures for deer, including protection of all winter deer habitat, facing any direction, protection of SD-67 large tree forests where available, and lower quality habitats because of the modern-day deficit of larger tree stands.

Finally, the DEIS also needs to review scientific materials indicating inadequacies with the Forest Plan den buffers which are essential to population viability and reproductive success but currently far too small to encompass areas needed for breeding and rearing pups. Reportedly, successful breeding has recently occurred in the project area. Current and recent research indicates that the need for better protections around wolf dens, including, among other things, a large radius around the den that excludes all development activities and includes roadless deer habitat.[199]

C. *The DEIS fails to adequate evaluate impacts to Forest Plan Management Indicator Species*

The Forest Plan requires the agency to "[u]se Forest Plan management indicator species to evaluate the potential effects of proposed management activities affecting wildlife habitat" and "[p]rovide the abundance and distribution of habitat necessary to maintain viable populations of existing native … species well-distributed in the planning area."[200] The DEIS does not evaluate key MIS species, and provides inadequate assessments of impacts to the few species analyzed. A revised DEIS is necessary to remedy this.

1. *The DEIS unlawfully fails to consider impacts to resident forest bird MIS*

The DEIS provides a section entitled "Migratory Birds" stating that none of the alternatives will impact migratory bird populations.[201] It broadly identifies 150 avian species, some of which are resident, some of which breed in the area, and 16 species of conservation

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[194] Exh. 70 (CBD et al 2020).

[195] Exh. 5 (Reeck 2014).

[196] Exh. 146 (Zarn 2019). This paper is not on the thumb drive and is too large to upload on the comments webpage. It is available at: https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=12574&context=etd

[197] *See, e.g.* Exh. 17 (Kirchhoff 2018).

[198] *Id.*

[199] Exh. 136 (DNR, 2020).

[200] Forest Plan at 4-85.

[201] DEIS at 86.

concern known to associate with southeast Alaska forests.[202] The DEIS notes that some species may nest in Southeast Alaska forest and experience impacts from logging which it measures in term of changes to productive old-growth habitat.[203] It concludes that there may be some direct effects in terms of nest abandonment caused by disturbances, and that cumulative reductions in productive old-growth of up to 33 percent from historic levels have removed suitable habitat for "forest related migratory birds."[204]

By not analyzing at the species level, the DEIS thus ignores two resident MIS species that use interior forest and large-tree old-growth habitat. Brown creepers are actually not a migratory bird, but rather a year round resident of Southeast Alaska. They are a Tongass National Forest MIS because of their association with interior forest habitat and particularly their foraging on live, large diameter old-growth trees.[205] Interior forest is a unique habitat, distant from openings such as clearcuts or natural openings, and this habitat decreases in proportion to fragmentation.[206]

The brown creeper is a habitat specialist, and its abundance declines as interior forest conditions decrease and edge forest conditions increase.[207] In project area VCUs, Interior forest habitat has decreased by 52 percent (VCU 7470), 68 percent (VCU 7530) and 72 percent (VCU 7460).[208] There is significant uncertainty about the extent of logging-caused brown creeper population declines, but – based on observations of the absence or reduced numbers – studies suggest the declines may be substantial in logged habitats. The species' sensitivity to fragmentation is so significant that partial cuts do not reduce adverse impacts in a meaningful way.[209] Southeast Alaska-specific studies suggest complete abandonment of some areas and "substantial gaps in distribution both at the VCU and larger WAA scale."[210]

Hairy woodpeckers are another permanent resident MIS rather than a migratory bird and are known to inhabit the project area. The species is an MIS in part because of its role in forest ecosystems as a primary excavator for other cavity dependent wildlife species. The species generally associates with high-volume old-growth habitat in patches larger than 500 acres.[211] Clearcutting has immediate and long-term or permanent effects on hairy woodpeckers by removing the ecological structure of old growth forests, causing population declines.[212]

For both species, there will be little habitat remaining after this project except in old-growth reserves or non-development LUDs.

Alternative 5 for the Saddle Lakes Project, which would have taken 33 MMBF of old-growth from this project area, would have caused permanent habitat loss for brown creepers, created gaps in distribution, reduced the population and probably confined them to non-

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[202] *Id.*

[203] *Id.*

[204] *Id.* at 87.

[205] Exh. 5 (Reeck, 2014).

[206] *Id.*

[207] *Id.*

[208] *Id.*

[209] *Id.*

[210] *Id.*

[211] *Id.*

[212] *Id.*

development LUDs.[213] As shown in the following table, cumulative loss of brown creeper

Table 37. Cumulative Change in Brown Creeper/Interior Habitat[1], All Ownerships

Area	Historic	Acres (% reduction from *historic*)					
		Existing \ Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
VCU 7460	10,983	3,050	2,704	2,940	2,661	2,651	2,691
		(-72.2%)	(-75.4%)	(-73.2%)	(-75.8%)	(-75.9%)	(-75.5%)
VCU 7470	6,363	3,070	2,820	2,897	2,799	2,656	2,811
		(-51.8%)	(-55.7%)	(-54.5%)	(-56.0%)	(-58.3%)	(-55.8%)
VCU 7530	8,248	2,623	2,601	2,605	2,604	2,601	2,602
		(-68.2%)	(-68.5%)	(-68.4%)	(-68.4%)	(-68.5%)	(-68.5%)
WAA 406	30,321	14,193	13,824	14,063	13,783	13,771	13,811
		(-53.2%)	(-54.4%)	(-53.6%)	(-54.5%)	(-54.6%)	(-54.5%)
WAA 407	13,949	7,440	7,190	7,267	7,168	7,025	7,180
		(-46.7%)	(-48.5%)	(-47.9%)	(-48.6%)	(-49.6%)	(-48.5%)
WAAs 406/407	44,270	21,633	21,014	21,329	20,951	20,796	20,991
		(-51.1%)	(-52.3%)	(-51.8%)	(-52.7%)	(-53.0%)	(-52.6%)

1. Interior habitat based upon vegetative & climatic edge effect distances for Southeast AK (Concannon *MS thesis* 1995)
Source: GIS, SaddleWildlfieSummariesByAlt0618.xlsx.

habitat in the project area is substantial:[214]

The cumulative effects on hairy woodpeckers are also substantial because 38 to 51 percent of the historical habitat in VCUs 7460, 7470 and 7530 would be lost from taking large diameter, high-POG habitat and there would be a massive decline in large patches ≥500 acres.[215]

Table 41. Change in Hairy Woodpecker Habitat Patch Size, All Ownerships WAA 406/407

	historic	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt 5	Alt 6
# of patches ≥500 acres	13	19	19	19	19	19	19
Total acres in patches ≥500 acres	87,956	63,812	62,006	63,028	61,812	61,432	62,074
% Reduction in acres		(-27.5%)	(-29.5%)	(-28.3%)	(-29.7%)	(-30.2%)	(-29.4%)
Average size of patches ≥500 acres	6,766	3.359	3,263	3,317	3,253	3,233	3,267
% Reduction average patch size		(-50.4%)	(-51.8%)	(-51.0%)	(-51.9%)	(-52.2%)	(-51.7%)

[213] *Id.*

[214] *Id.*

[215] *Id.*

A revised DEIS should measure impacts to brown creeper using changes to interior old-growth habitat as a metric.[216] Logging, including partial cut logging, fragments brown creeper habitat by (1) reducing available nesting and foraging habitat; (2) increasing fragmentation and (3) decreasing reproductive success – indeed, brown creepers are one of two forest species that do not breed in fragmented landscapes.[217] A revised DEIS should also display habitat loss for hairy woodpeckers in terms of high volume productive old-growth and a patch size.

2. Black bear populations are also likely declining, warranting additional protective measures

Black bears are an umbrella species with large area requirements and varied habitat uses. The health of black bear populations can be an indicator of overall ecosystem integrity. They are a Management Indicator Species (MIS) because of their importance for hunting and for recreation and tourism. The project area Wildlife Analysis Areas (WAA) 406 is important for both guided hunting and wildlife viewing. In general, we are concerned about the project's impacts to black bear viability because of cumulative habitat loss and particularly denning and riparian habitat. Once canopy closure occurs, black bears will lose habitat diversity and denning structures. Pending construction of the Shelter Cove Road will make them increasingly vulnerable to taking because of easier access to logging roads. A revised DEIS is needed to do a better job of explaining how the Forest Service will address these habitat issues and other impacts of human caused disturbances to bears.

The agency's responsibility to maintain foraging, denning and other habitat needs for bear populations in the project area is of considerable socio-economic significance. Alaska's wildlife has tremendous economic value for both passive and consumptive uses, and inventoried roadless areas must remain intact to prevent further losses of this asset. Bears are a top species for wildlife viewing visitors in Alaska and generate millions of dollars in regional economic impacts. In 2011, wildlife hunting and viewing in general generated 2,463 jobs in southeast Alaska, $138 million in labor income and $360 million in total economic output.[218] More recent studies show that bear viewing generates massive economic impacts in southcentral Alaska and British Columbia's.[219] Visitors to Alaska and coastal rainforests in British Columbia identify bear viewing opportunities as a primary reason for their visits.[220]

This DEIS admits that the timber project will worsen already weakened habitat conditions for black bears but unlawfully fails to provide adequate site-specific information, disclose cumulative threats to species viability or disclose measures to mitigate past and planned habitat degradation, particularly in WAA 407 where there has already been significant loss of foraging habitat near class I streams and massive loss of denning habitat.[221] This approach does not adequately discuss impacts to project area black bears or explain how the agency will maintain species viability in the project area, violating NEPA and

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[216] Roads should be considered as equivalent to clearcuts because they also create edge effects.

[217] *Id.*

[218] Exh. 77 EcoNorthwest 2014.

[219] Exh. 93. Young, T.B. & J.M. Little. 2019. The economic contribution of bear viewing in south central Alaska. University of Alaska Fairbanks. Exh. 94. Center for Responsible Travel. 2014. Economic impact of bear viewing and bear hunting in the Great Bear Rainforest of British Columbia. Washington, D.C.

[220] *Id.;* Exh. 77 EcoNorthwest 2014.

[221] DEIS at 85.

NFMA. ADF&G expects bear numbers to decline further within the project area and larger island, and placed limits on hunting in Game Management Unit 1A due to conservation concerns for the species.[222]

The DEIS identifies cumulative 25 percent reductions in denning habitat across the project area and discloses that action alternatives would add another 3 percent reduction in denning habitat from existing conditions, including the loss of thermally advantageous dens.[223] The DEIS does not explain how the Forest Service will maintain adequate denning habitat. Scientists have also found that a reduction in *suitable* den sites can lead to decreased black bear populations.[224] The DEIS does not disclose or consider, for example, the extent to which the Forest Service plans to place cutting units in the vicinity of current or suspected dens, which may provide features unavailable elsewhere in the landscape. Many of the units overlap with the prior Saddle Lakes Timber Sale units, where the agency proposed clearcut units that contained dens.[225]

The availability of spawning salmon is essential to maintaining bear populations. But Forest Service riparian buffers only protect the first 100 feet adjacent to the stream, rather than the adjacent habitat heavily utilized by foraging bears.[226] The DEIS failed to consider, for example, whether it is appropriate to rely on 100 foot buffers on class I streams to reduce impacts to black bears using high value habitats like low-elevation, old-growth with abundant, productive salmon streams. The Forest Service should consider significantly larger riparian buffers on all streams to provide additional protections to project area black bears. Black bears utilize specific Class I streams known for foraging in the project area so that the agency could and should, at a minimum, identify high-use areas.[227]

The DEIS identifies a cumulative 21 percent reduction in foraging habitat along streams which would reduce bear populations.[228] The Forest Service should review its calculations by WAA; previous analyses showed that cumulative reductions from 1954 to 2013 of 20 percent in WAA 406, over 40 percent in WAA 407, and 28 percent for both.[229]

Please address the following issues with regard to the viability of the black bear MIS and include site-specific analyses of impacts to black bears by alternative:

1. Further NEPA analysis should consider specific riparian habitat needs and discuss site-specific mitigation measures: The extensive rate of past clearcutting in the vicinity of project area anadromous streams reduced the very most essential habitat feature – foraging habitat along salmon streams – by 42 percent and likely caused significant reductions in riparian bear habitat and population declines.[230] This loss of riparian habitat has disproportionate and non-linear displacement effects on female

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[222] *Id.* at 83, 85.

[223] *Id.* at 84.

[224] Exh. 132 Davis, H, A.N. Hamilton, A.S. Harestead & R.D. Weir. 2012. Longevity and Reuse of Black Bear Dens in Managed Forests of Coastal British Columbia. In: Journal of Wildlife Management 76(3):523-527.

[225] Exh. 5 (Reeck, 2014).

[226] *Id.*

[227] *Id.*

[228] DEIS at 83.

[229] Exh. 5 (Reeck 2014, Table 25).

[230] Exh. 5 (Reeck 2014).

bears and the DEIS should review scientific studies which explain effects particular to female bears. The DEIS should then clarify whether black bear foraging areas will receive additional protections, such as 500 foot riparian buffers to meet foraging needs.

Black bears repeatedly use specific habitats, and even small stream reaches may be important, thus triggering a need to identify high use riparian areas.[231] In general, 100 foot buffers are inadequate to meet bear foraging needs. Studies of brown bear riparian habitat utilization found that: (1) 500 foot riparian buffers should be applied "universally to all salmon streams"; (2) a 1,000 foot buffer would provide for 73% of female bear riparian habitat use in lightly altered landscapes and (3) 1,000 foot buffers are appropriate in areas where management objectives include healthy, abundant bear populations for hunting and viewing.

For the above reasons and due to the significant cumulative impact on bear foraging habitat, we reiterate our request that you consider expanding riparian bear buffers and evaluate this measure as a mitigating measure in a revised DEIS.

2. Cumulative Effects – incomplete analysis: The cumulative effects analysis of impacts to denning habitat excluded the Alaska Mental Health Trust's (AMHT's) recent Leask Lakes harvest (done by Alcan) and failed to incorporate potential habitat loss association with logging on AMHT's new land acquisition in the area, particularly riparian areas that support ursine fisheries. Further NEPA analysis should factor in this acreage loss. Also, the Ketchikan to Shelter Cove Road will change hunter access and increase hunting pressure within the Saddle Lakes Area. Project related roads would provide easier walk-in access to areas previously not hunted. WAAs 406 and 407 are already currently most heavily hunted areas black bear through Game Management Unit 1A.[232] The DEIS *should investigate any significant new population vulnerabilities, such as declining pink salmon returns*, and how those declines interact with cumulatively lost foraging habitat to create additional threats to project area bears.

   Finally, AMHT clearcuts will occur without numerous habitat protections, including portions of old-growth reserves, inventoried roadless areas, beach buffers and riparian buffers, creating a much more significant habitat loss than clearcutting on 8,224 acres of federal timber land. The DEIS needs to discuss and explore these changes in greater detail. Black bear populations respond negatively to high road density and need habitat that provides remoteness from human activity.[233] The DEIS thus also needs to discuss the cumulative effects caused by the Alaska Roadless Rulemaking process.

3. Old-Growth Forest Dependency: The DEIS should include information about black bear utilization of and impacts to large tree old-growth forest, which is the most used habitat type by all bears in all seasons. Wildlife managers are increasingly associated black bear habitat with large-tree old-growth and expect population declines to correlate with reductions in this specific type of habitat.

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[231] Exh. 5 (Reeck 2014).

[232] Exh. 4 (Dorendorf, R. 2020. Black bear management report and plan, Game Management Unit 1A. Alaska Department of Fish and Game, Species Management Report and Plan ADF&G/DWC/SMR&)-2020-27, Juneau.

[233] Roadless Area Conservation Rule FEIS at 3-144, 148-149.

4. Denning habitat requires further analysis: The DEIS identifies significant impacts to denning habitat in terms of direct habitat loss. Clearcutting confirmed den sites will force bears to find alternative sites. The analysis needs to disclose that black bears in southeast Alaska select for specific denning habitats, meaning that further NEPA analysis should consider site-specific features, and avoid clearcutting in areas that provide suitable denning habitat. There is considerable re-use of existing den sites, which may indicate in part a lack of adequate alternative sites. In light of the likely importance of adequate den sites to black bear survivability and reproductive success, further analysis and consideration of mitigation measures are needed.
5. Habitat capability model: Please use the interagency habitat capability model in further analyses in order to systematically assess project impacts to black bears.
6. Road density impacts: The DEIS does not adequately address road density impacts to bears, particularly how the Shelter Cove Road will change wildlife use patterns. Additional NEPA analysis should be provided.

3. The project threatens marten viability to a greater extent than disclosed in the DEIS

The marten is an MIS because of susceptibility to forest fragmentation.[234] The Forest Plan directs the agency to "provide and conserve habitat to assist in maintaining long-term sustainable marten populations." The DEIS projects a 60 percent reduction in marten deep snow habitat, causing projection that "populations could be reduced" and expects all alternatives to cause population declines.[235] The habitat reduction caused by project alternatives is substantial; the Forest Service's 2014 analysis for marten identified a 41.1% reduction in winter habitat from 1954.[236] Previous analyses have suggested that the additional clearcuts could reduce populations by a third or nearly a half and create localized gaps in marten distribution. It is hard to understand how this level of habitat loss could support a "viable population."

Studies have shown direct relationships between fragmentation and carrying capacity, with a maximum tolerance for 30 percent of the landscape is clearcut.[237] Marten increase home range sizes as areas cut, and then once home range becomes to large, they become locally extinct. Importantly, it is possible for the Forest Service to reduce habitat capability to the point where reproductively successful marten populations no longer exist. For the previous project in this same area, the Forest Service was able to estimate 30 – 45 percent reductions in marten populations and identify specific travel corridors needed by marten.[238] The DEIS identifies only one VCU reaching the Forest Plan 30 percent maximum clearcut tolerance threshold for "increased risk of not maintaining marten populations." Defenders suspects that this is an error based on the improper exclusion of 3,276 acres recently clearcut at Leask Lakes by Alcan/Transpac for the Alaska Mental Health Trust.

A revised DEIS needs to include a full discussion of habitat features important to marten viability – matrix land retention requirements, trapping refugia and patch sizes and prey availability. Without this information, it is impossible to evaluate project-level impacts. We request that further analysis address the following concerns:

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[234] DEIS at 78.

[235] *Id.*

[236] Exh. 5 (Reeck 2014, Table ES-1).

[237] *Id.*

[238] *Id.*

1. Road density risks need further analysis: The DEIS discusses road density, but fails to identify relevant thresholds or to what extent cumulative road density increases and new access patterns associated with pending construction of the Shelter Cove Road would result in the entire population being vulnerable to overharvest. Notably, the Sea Level FEIS concluded that "marten habitat capability in the Shelter Cove area could be reduced by 90%" by the construction of the Shelter Cove road. Further NEPA analysis should provide a more detailed assessment of road density risks, particularly the potential for local extirpations.

2. Further NEPA analysis should include use of the habitat capability model: The TLMP specifically recommends using a habitat capability model for MIS in order to systematically assess project impacts. The analysis of potential impacts to marten is limited to winter habitat models which have severe limitations because predator avoidance, prey availability and other factors cumulatively impact marten viability. Alternatives 2, 3, and 4 would reduce marten deep-snow habitat by approximately 30-60% which by itself threatens the species' vulnerability to local extirpation. Given this amount of habitat loss, the DEIS needs to use a model that comprehensively evaluates population viability.

   The need for an interagency model is particularly critical in scientific studies which make clear that marten populations cannot remain viable in landscapes that are 25 – 30% clearcut and marten dependence on forested areas makes them particularly vulnerable to local extinctions. The model, using a road density factor, indicated a 90% habitat capability decline – a number much greater than even the cumulative habitat loss disclosed using the methodology in the DEIS. Because of this finding we reiterate our request to revisit the use of a habitat capability model to analyze project risks to marten.

3. Cumulative effects analysis needs to incorporate AMHT cutting: The cumulative effects analysis improperly excludes the 3,276 acres lost due to the recent Leask Lakes cut and the proposed exchange which could affect over 4,000 acres of marten habitat.

4. A revised DEIS needs to consider forest retention prescriptions for marten: The Forest Service needs to consider additional retention requirements in clearcut units. The project area lies within a high risk province for marten. The cumulative loss of winter habitat, even excluding Alaska Mental Health Trust clearcuts, exceeds most thresholds for marten viability and will create population gaps. When planned logging will threaten viability, partial harvest aimed at maintaining productivity of small mammals, retaining habitat features for dens and nest sites, leaving substantial amounts of vertical structure are key features that must be considered in further NEPA analysis. Given this potential impact, further NEPA analysis needs to demonstrate consideration of mitigation measures such as increased forest structure retention in clearcuts.

5. Trapping Refugia and Prey Availability: Further NEPA analysis should include some additional discussion of trapping refugia and prey availability. The analysis would be improved by expanding upon the discussion about OGRs by reviewing the recommendations of expert scientists from the 2006 Conservation Strategy Review Workshop, and considering responsive measures, such as matrix management and enhanced corridors between OGRs.

D. Sensitive Species: Queen Charlotte Goshawk ("QCG")

The goshawk is a sensitive species, meaning that population viability is a concern and the DEIS needs to show that the project is consistent with TLMP goals for sensitive species - to ensure adequate numbers and distribution of the species and avoid extirpation and/or federal listing. The DEIS failed to provide an adequate analysis of project impacts on the QCG in light of Forest Plan requirements to give "[S]pecial consideration to the possible adverse impacts on habitat of sensitive, threatened and endangered species."

The DEIS provided two conclusions: (1) project area WAAs "would be at increased risk of not supporting goshawks" because past removals have exceeded a 33 percent habitat loss threshold; and (2) project alternatives may adversely impact individuals but was not likely to adversely affect the species.[239] These conclusions likely underestimate the adverse impacts because it is hard to see how QCGs can persist in this landscape, particularly after project implementation. This project will subtantially reduce remaining high volume productive old-growth well beyond the 33 percent habitat loss threshold, with total habitat loss ranging from roughly 50 – 60% under action alternatives.[240] The DEIS notes that changes in prey resources could affect goshawk territory occupancy and breeding success, but suggests that maybe old-growth reserves and other non-development LUDs may offer alternative prey resources.[241] The species itself is highly vulnerable,[242] meaning that further habitat loss in high risk VCU's implicates species viability concerns and we request you revisit the DEIS' conclusions with further NEPA analysis that addresses the following concerns:

1. Surveys: Further NEPA analysis should discuss the value of additional survey efforts. The DEIS provides no information about potential nest locations or other observations of QCG habitat use. The DEIS failed to disclose two QCG sightings in 2012 – at least one of the sightings occurred in area of proposed intensive clearcutting. [PR 740-0032]. The Saddle Lakes FEIS reported two goshawk sightings in 2012 – one near the Shelter Cove LTF and another near North Saddle Lakes.[243] At the agency's public presentation for the project held in Ketchikan, staff reported a nest search in 2018 limited to one specific nest, and goshawk observations in 2019 and 2020.

   These sightings should be discussed in further NEPA analysis along with an evaluation of project design, QCG habitat features in the vicinity of the sightings and ways to modify project design so as to minimize the risks to potential but undiscovered nest areas.

2. Consideration of specific habitat features for QCG: Our scoping comments requested that the analysis should be more than broad measurements of POG reductions. We reiterate the request for a habitat quality analysis that takes into account all available information on differential utilization of various forest types and structures. The analysis in the DEIS consists largely of ranking alternatives by acreage loss. Given the known presence of QCGs in the project area, and inability to locate nests, further NEPA analysis should include a review of the scientific literature relevant to the size

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[239] DEIS at 80-82.

[240] *Id.* at 81-82.

[241] *Id.* at 81. The DEIS identifies one nest in the project area that may have been used the previous decade, and was checked once in 2018, with no activity.

[242] *See* Exh. 3 (Smith 2012).

[243] Saddle Lakes Timber Sale FEIS at 3-170.

and characteristics of the concepts underlying the most contemporary approach to sustaining viable populations of QCGs: (1) nest area; (2) post-fledgling and (3) foraging area.

3. Fully identify risks of continued and serious population decline associated with further loss of habitat: Further NEPA analysis should fully acknowledge the considerable uncertainty about QCG populations and trends in Alexander Archipelago island ecosystems. It is clear that population declines are more significant in more heavily logged areas in Southeast Alaska. Population levels are unknown and the region may support just a few to several hundred breeding pairs. QCGs rely almost entirely on old-growth forests, and because of the low population levels, cannot sustain low survival or reduced reproductive rates for long without entailing significant viability risks.

4. Cumulative effects: Intensive clearcutting of private lands in Alexander Archipelago island ecosystems has created large amounts of low quality habitat, or non-habitat, for QCGs, contributing to at least local declines. Further NEPA analysis should consider the Forest Service's 1996 Conservation Assessment and risk assessments and identify risk thresholds for project area VCUs in light of the cumulative effects of this project and recent and future AMHT cutting and other private harvests. The cumulative effects analysis should further consider habitat loss in other ranger districts in the Craig, Ketchikan-Misty Fjords, Petersburg, Thorne Bay and Wrangell Ranger Districts when revisiting the adverse impacts determination.

5. Uncertainty about the TLMP Conservation Strategy: Further NEPA analysis should discuss the findings provided in Winston Smith's 2013 "Spatially Explicit Analysis" of QCG habitat needs, which identifies significant uncertainties regarding whether TLMP conservation measures provide the habitat features needed to sustain well-distributed QCG populations in the project area and across the southern half of the Alexander Archipelago. Smith's analysis indicates that risks to QCGs under the TLMP are likely even greater than anticipated under the 1996 risk assessments, which assumed that the reserve system would in part mitigate habitat loss. Dr. Smith's analysis indicated that: (1) reserves and other conservation elements "might not mitigate cumulative habitat loss in intensively managed landscapes and (2) TLMP standards and guidelines "are unlikely to meet breeding season habitat objectives for goshawk populations."

6. Buffer analysis: Given the high level of landscape scale habitat degradation, the DEIS should consider mitigation measures that include a scientifically defensible nest buffer. Buffers should be large enough to protect alternative nest sites, and conform to the recommendations of ADF & G, the FWS, and the Pacific Northwest Research Station, which all recommended that, at a minimum, a 500 acre buffer is needed to minimize risks to the species. *See* 2008 TLMP Amendment FEIS, Appx. H at H-A14, H-A17, H-A39.

7. Prey analysis: The DEIS failed to include an analysis of MIS species chosen for their importance as prey species for goshawks and marten such as red squirrels, or other small, often endemic mammals. A revised DEIS should consider impacts to these MIS to inform remaining prey availability across the landscape.

E. The project cannot possibly meet Forest Plan connectivity guidelines

The Forest Plan directs the Forest Service to "[d]esign projects to maintain landscape connectivity."[244] This requires maintaining corridors among large and medium OGRs and other non-development LUDs.[245] Connectivity is already lacking through much of the project area due to the large amount of private land, significant past harvest, particularly of interior forest old-growth, and lack of intact beach fringe. Two of three action alternatives purposefully eliminate key corridors – thus, the project appears almost certain to be inconsistent with the guideline. One core issue is pertains to problems with existing connectivity through state lands and the beach fringe. All action alternatives all implement cutting units adjacent to those areas, thus eliminating access to whatever limited connectivity exists. Also, the cumulative effects of additional logging, particularly on Alaska Mental Health Trust forestland, may further reduce wildlife corridors. Thus, it appears that a substantial amount of units should be dropped to meet the guideline.

F. The Forest Service must analyze the cumulative impacts of alternatives and past and planned logging on wildlife

NEPA requires that agencies consider cumulative actions in determining the scope of environmental impact statements, meaning actions "which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement."[246] As explained by the Supreme Court, under NEPA, "proposals for … actions that will have cumulative or synergistic environmental impact upon a region … pending concurrently before an agency … must be considered together."[247] Alaska Mental Health Trust cuts greatly increase the need for a detailed cumulative effects analysis because the impact of future development may be greater than the impact of the analyzed project itself, making "the potential for … serious cumulative impacts is apparent."[248]

In general, the 9th Circuit has explained that:

> [P]rojects need not be finalized before they are reasonably foreseeable. NEPA requires that an EIS engage in reasonable forecasting. Because speculation is implicit in NEPA, we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as a crystal ball inquiry.[249]

This analysis requires "'some quantified or detailed information; … [g]eneral statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided."[250] Thus,

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[244] 2016 Forest Plan at 4-87.

[245] *Id.*

[246] 40 C.F.R. § 1508.25

[247] *Kleppe v. Sierra Club,* 427 U.S. 390, 410 (1976); *see also Natural Resources Defense Council v. Forest Service,* 421 F.3d 797, 815 (9th Cir. 2005).

[248] *Te-Moak Tribe v. U.S. DOI,* 608 F.3d 592, 605-606 (9th Cir. 2010).

[249] *N. Plains Res. Council, Inc. v. Surface Transp. Bd.,* 668 F.3d 1067 (9th Cir. 2011)(citations and internal quotation marks omitted).

[250] *Klamath-Siskiyou v. BLM,* 387 F.3d 989, 993-94 (9th Cir. 2004).

"[t]he analysis 'must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present and future projects."[251]

The Shelter Cove state road will connect the project area with Ketchikan in 2021 and increase public use of the project area, but the cumulative effects analyses for wildlife generally ignore the consequences of increased access to an area with high road densities.[252] The Forest Service is working on "Phase 2" of the Alaska Mental Health Trust Land Exchange Act of 2017, which would convey 8,224 acres in the project area to AMHT for clearcutting.[253] The DEIS unlawfully does not explore this consequence in any detail, citing "uncertainty as to whether these lands will be conveyed."

The DEIS needs to fully incorporate the ongoing development of the AMHT land exchange and Shelter Cove Road into the analysis. The impacts of the land exchange in particular – right in the middle of the project area – significantly changes the cumulative effects of the project with regard to nearly every resource issue, from wildlife to timber availability and supply to scenery to watersheds to public recreation and subsistence resource access. The 8,170 acre parcel would significantly change landownership patterns in the project area and result in the Alaska Mental Health Trust increasing its share from 8% to 30% of the Saddle Lakes project area acreage which overlaps substantially with this project.[254] We raise the issue particularly in this section because of particular impacts to wildlife – the habitat calculations used to measure cumulative impacts to wildlife, though already severe in terms of habitat loss, are underestimated in light of the additional habitat loss under the proposed exchange. The omission was so substantial as to preclude meaningful analysis, requiring a revised DEIS.[255]

Figure 5. AMHT Leask Lakes Timber Harvest

The amount of old-growth, second growth and non-productive forest lands within the exchange parcel are known. The land exchange may drastically change remaining habitat calculations for wildlife: (1) up to 4,000 acres year round marten habitat (4,000 acres?); (2) a cumulative loss of up to 60 percent of goshawk foraging and nesting habitat in both project area VCUs and (3) 4,000 acres of bear denning habitat, and numerous miles of bear foraging habitat around Class I streams.[256] Indeed, while the analysis of impacts to wildlife ignores potential impacts of logging by the Alaska Mental Health Trust, the aquatic analysis, while deficient, identifies significant cumulative concerns, including changed flow patterns in watersheds that share

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[251] *Id.*

[252] DEIS at 145, Appx. C at 298.

[253] *Id.*

[254] Saddle Lakes FEIS at 289.

[255] 40 C.F.R. § 1502.9

[256] Exh. 135 (GSACC et al. 2015).

boundaries with AMHT cuts and other water quality concerns.[257] These cumulative impacts alone should cause the Forest Service to drop any units hydrologically connected to streams affected by AMHT logging, to preserve fish and ursine fishery access.[258]

It is well known that logging by AMHT near Ketchikan is even more destructive than federal logging, and the 9th Circuit has articulated about when a proposed land exchange is not too speculative to warrant consideration in a cumulative effects analysis. In November 1996 the Forest Service prepared an EIS – the Huckleberry Exchange EIS – that analyzed the impacts of a land exchange between the agency and a private timber operator.[259] The Huckleberry Exchange EIS failed to analyze the cumulative impacts of a future land exchange involving another timber operator based on the assumption that the future exchange was too speculative to require analysis.[260] However, the 9th Circuit disagreed:

> Our review of the record suggests that the Plum Creek transaction was not remote or highly speculative. Rather, it was reasonably foreseeable and it should have been considered in the EIS. A summary of the proposed Plum Creek transaction already had been prepared by the Forest Service by 1995. On June 27, 1996, five months before the Huckleberry EIS was issued, Secretary of Agriculture Dan Glickman formally announced the proposed Plum Creek Exchange to the public. USDA Press Release (June 27, 1996) at 1.
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> Moreover, the record reflects that the Forest Service was all but certain that the National Forest lands in the upper Green River Basin would be included in the Plum Creek exchange. The Huckleberry Exchange EIS was issued in November 1996. In July 1996, the Green River Watershed plan described the Plum Creek exchange, and in January 1997, two months after the Huckleberry Exchange EIS issued, a revised map showing lands to be exchanged in the Plum Creek Exchange was published. The Plum Creek Exchange was not too speculative in November, 1996, to be analyzed in the Huckleberry Exchange EIS.
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> Given the virtual certainty of the transaction and its scope, the Forest Service was required under NEPA to evaluate the cumulative impacts of the Plum Creek transaction. (citations omitted). In the absence of an EIS that takes into consideration the cumulative effects of the planned land sales and resultant environmental impacts, we cannot conclude that the Forest Service took the necessary "hard look" at the cumulative environmental impacts of the Huckleberry Exchange. [261]

There are other serious concerns regarding cumulative effects. The impacts of "succession debt" alone warrant abandoning this project based on the severe long-term impacts associated with additional clearcutting on the island for all wildlife species.[262] As

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[257] DEIS at 192.

[258] *Id.;* specifically, Gunsight Creek, North Saddle Lake, Salt Lagoon, and watershed #s 19010102050901; 19010102050603, 19010102050605, & 19010102050307.

[259] *Muckleshoot Indian Tribe v. U.S. Forest Service,* 177 F.3d 800, 812 (9th Cir. 1999).

[260] *Id.*

[261] *Id.*

[262] 16 U.S.C. § 1604(g)(3)(E)(iv). NFMA's directives on clearcutting mean that it is only acceptable in "exceptional circumstances" or, at a minimum, the Forest Service "must proceed cautiously in implementing an even-aged management alternative and only after a close examination of the effects that such management will have on other forest resources." *Sierra Club v. Thomas,* 105 F.3d 248 (6th Cir. 1997); *Sierra Club v. Espy,* 38 F.3d 792, 799 (5th Cir. 1994).

explained in Person and Brinkman's 2013 study, "Succession Debt and Roads," industrial scale clearcutting:

> … will be paid for by long-term ecological consequences resulting from patterns and processes of forest succession and roads. There may be short-term benefits for some wildlife species, but succession debt implies that those benefits are ephemeral and do not reflect conditions for those species over the long term.[263]

Thus, although deer may benefit from new clearcuts during summer and mild winters, "the long-term prognosis is permanent loss of suitable foraging habitat."[264] The delay of the forest recovery process, the displacement caused by logging activities and the impairment of travel corridors will have significant long-term adverse effects that the DEIS must analyze.

There are four stages of forest succession in previously clearcut southeast Alaska forests: (1) stand initiation (1 – 25 years): (2) stem exclusion (25 – 150 years); (3) understory re-initiation (150 – 250 years); and old-growth forest (>250 years).[265] The recovery of many older second-growth stands in biogeographic provinces with high levels of past old-growth logging would fully pass into the understory re-initiation stage over the next 40 to 50 years. The Forest Service's planned plantation rotation is 100 to 110 years old (or less) – preventing the "development of additional, quality habitat and increasing species extirpation risks across the landscape" over the long-term.[266]

This project will add to the already dangerous level of lands remaining at the stem exclusion stage. Given the scale of private and state logging in the planning area, a revised DEIS is needed to provide a detailed analysis of the risk of creating a long-term habitat deficit:

> In Southeast Alaska there are many specific ecological factors which explain why logging can have such a negative impact on key wildlife species in this region. Most logging has occurred in low-elevation valley bottoms (<1000') which provide critical habitat for wildlife, especially during times of heavy snow cover. Removal of old-growth forest and its replacement by second-growth forest affects winter habitat for deer in two specific ways: loss of snow shedding capability of complex old-growth canopies (effects mobility and foraging efficiency of deer) and loss of a productive understory plan community (provides forage quality and quantity). Although clearcut harvesting does produce an immediate flush of high quality understory biomass, it typically lasts only 10-25 years, and is not available to deer during periods of heavy snow. The greatest impact occurs three or more decades after logging, during the "stem exclusion" phase of forest stand development, when the densely stocked and rapidly growing young conifers shade out most of the important plant species for deer and other wildlife species. The stem exclusion phase lasts for as much as 150-200 years so can create a long-lasting deficit of

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[263] Exh. 92 at 144 (Person & Brinkman 2013).

[264] *Id.* at 147.

[265] Exh. 18 (Alaback 1984).

[266] *See, e.g.* Exh. 29 (Iverson 1997); Exh. 30 (Degayner 1997); Exh. 31 (Iverson 1996a); Exh. 32 (Forest Service 1995); Exh. 33 (Iverson 1996b).

> wildlife habitat for a given watershed or region, unless an *effective* restoration strategy can be developed.[267]

Thus, second-growth logging on top of succession debt clearly is a significant problem when the Forest Service plans, as here, to increase the old-growth habitat deficit. Decline in sustainable predator-prey communities will occur throughout the most productive areas for deer and wolves in Southeast Alaska because those areas are correlated with the most productive forest stands selected for timber harvest.[268] Studies of Alexander Archipelago wolves consistently show a preference for old-growth forest, flat terrain, avoidance of young growth forest and the potential for population level consequences once large amounts of forest enter the stem exclusion stage over the next two decades.[269] Succession debt itself will have severe consequences for deer and wolf habitat, and continued levels of logging, along with high levels of second-growth logging in the long-term will have significantly adverse impacts.[270] As explained in the preceding sections discussing wildlife species, succession debt will affect all of them.

Finally, the pending Alaska Roadless Rulemaking threatens remaining roadless refugia in the project area. The 2000 Roadless Area Conservation FEIS recognized that inventoried roadless areas provide important habitat to species that are sensitive to disturbance, such as black bears or other large mammals that avoid roads.[271] Inventoried roadless areas function as biological strongholds and places of refuge for wide ranging carnivores such as bears.[272] *Inventoried roadless areas are of increasing importance than in the past "due to the cumulative degradation and loss of other habitat in adjacent landscapes."*[273] Inventoried roadless areas also provide habitat for numerous identified sensitive species, other terrestrial mammals, forest birds, whether cavity nesters or predators like the Queen Charlotte Goshawk, and other species, helping to conserve biodiversity. Roads divide large landscapes and isolate populations, significantly reducing biodiversity. A revised DEIS should map and analyze the relationship between the project area and any inventoried roadless areas within or adjacent to the project area.

V. Comments on aquatic habitat: the project presents unacceptable and undisclosed risks to fishery resources

The DEIS recognizes that project area aquatic ecosystems provide fish habitat and contribute to fish production for regional fisheries.[274] The Essential Fish Habitat assessment required under the Magnuson-Stevens Act identifies populations of pink, chum, sockeye and coho using 175 miles of Class I streams in the project area.[275] The description of the affected environment is inadequate – the DEIS refuses to disclose population trends for these species or identify specific habitats, such as the use of lakes by sockeye or small streams by coho. It merely measures impacts to these fish and their habitat through impacts to stream flow

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[267] Exh. 20 (Alaback 2010).
[268] Exh. 95. David Person Declaration on Big Thorne, 2015, at ¶13e].
[269] Exh. 70 (CBD et al. 2020).
[270] *Id.*
[271] Roadless Rule FEIS at 3-144.
[272] *Id.* at 3-125; 3-142.
[273] *Id.* at 3-142.
[274] DEIS at 167.
[275] *Id.* at 195-196.

(cumulative timber take in watersheds), sediment inputs (measured by the number of stream crossings, road density and percent of basin roaded); stream temperature and fish passage.[276]

The project area includes 31 watersheds with 175 miles of class I streams and 204 miles class II streams.[277] Existing habitat concerns for fish include 164 miles of road and 87 stream crossings that introduce deadly sediment into anadromous streams and 32 stream crossing that impede fish passage and block 18.5 miles of class I and II streams, reducing spawning and rearing habitat for fish.[278] All action alternatives would add over 100 new stream crossings including 6 on class I streams 25 on class II streams and roughly 70 to 80 crossing on class III & IV streams that significantly influence downstream sedimentation and water temperature.[279]

Despite this significant past industrial development of project area watersheds, the DEIS asserts that all watersheds are "functioning properly" and concludes that the project would only cause "negligible to minor" effects on Essential Fish Habitat (EFH) based on the belief that sediment input caused by logging and timber road construction would be minor and short in duration.[280] The effects conclusions rely on broad measurements of road density, riparian buffers, and the belief that because salmon are mobile, they can avoid impacts from clearcutting and timber road construction.[281]

These conclusions are wrong and the analysis in the DEIS violates the APA, NEPA, NFMA and the Magnuson-Stevens Act. Defenders has reviewed dozens of scientific studies related to logging and timber road construction impacts to salmon and the effects conclusions in the DEIS ignore ample scientific evidence that landscape scale modifications, such as clearcutting and the project area's system of logging roads, impair and reduce salmon production capacity.[282] This project would further reduce salmon production by building road in fish habitat accompanied by intensive logging of old growth and second growth recovering forests – and do so at a time when the region's salmon production capacity is at risk due to multiple environmental factors.

There is new information showing significant resource declines, with habitat degradation and a rapidly changing climate as potential causal factors. The agency needs to promptly arrest declines in habitat conditions in areas previously logged or available for logging, initiate appropriate habitat restoration, and prevent any further habitat degradation, whether for remaining intact habitat or for the highly productive, recovering watersheds that occur throughout the project area.

There is uncertainty about the effects of past and present Tongass National Forest management on specific salmon populations. Most past industrial logging on the island occurred disproportionately in the highest quality salmon habitat, leaving a legacy of watersheds deficient in many key habitat features. Fluctuations in marine survival and

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[276] *Id.* at 162.

[277] *Id.* at 164.

[278] *Id.*

[279] *Id.* at 187 (the number of crossing are from the DEIS; obviously, by omission, the Forest Service's watershed analyst does not believe that class III and IV streams are relevant to downstream impacts).

[280] *Id.* at 168, 195.

[281] *Id.* at 167, 179, 196.

[282] *See e.g.* Exh. 124 (Rhodes 2013); Exh. 133 (Frissell 2019) and reference lists attached to both sets of comments.

weather cycles, variation in region-wide commercial harvests, and other factors have made it difficult if not impossible to detect specific population declines in heavily logged and roaded individual watersheds. Alaska fishery scientists believe there has been an undocumented but significant loss of productivity from watersheds degraded by past logging.[283]

A. Introduction: the importance of "forest fish"

The Tongass National Forest is a major producer of "forest fish" and a massive contributor to the number and value of salmon caught in Southeast Alaska's commercial fisheries, producing 75 percent of the salmon caught in the region each year.[284] According to Forest Service researchers, findings in their 2019 report quantifying Tongass National Forest salmon production and value "emphasize the importance of Alaska's forest rivers and lakes for sustaining Pacific salmon" and associated commercial fisheries that are "significant contributors to community well-being and the regional economy."[285]

Forests are vital to salmon productivity in aquatic ecosystems by controlling sediment inputs and regulating stream temperatures. The productivity of marine habitat is variable and cyclical, increasing the importance of freshwater habitat and forests in maintaining salmon populations during times of unfavorable ocean conditions. The most prevalent species in island ecosystems managed by the Forest Service are pink and coho salmon. The Tongass National Forest produces 95% or more of southeast Alaska's pink salmon harvest, roughly two-thirds of the coho harvest and in some years as much as half of the sockeye harvest. The $60 million in annual ex-vessel value (the amount paid to fishermen before processing and marketing generate additional value throughout the national economy) of these "forest fish" is a massive, market-based contributor to the regional economy.

Southeast Alaska's commercial seafood harvesting and processing industry is one of the region's two largest private sector economies and depends on ecosystem services provided by the Tongass National Forest. Seven of the top 100 fishing ports by value in the entire country are in southeast Alaska. Salmon is the most important species to these fisheries in terms of volume and value and supports 1 in 10 jobs in the region. Over 1,800 gillnet, seine and troll salmon permit holders typically participate in the fisheries each year. Area 1 is Ketchikan's regulatory fishing district and project area watersheds have the capacity to be major producers of pink salmon – but recent productivity has shown alarming declines.[286]

Despite the importance of these fisheries, the DEIS ignored the current status of island fish populations and the relevance of salmon production trends across southeast Alaska. Until very recently, the Tongass National Forest produced average harvests of 37 million pink salmon and 1.8 million coho.[287] But 2016 was the first of a series of recent even-year pink salmon fishery disaster for southeast Alaska. Coho harvests began to decline significantly in 2018. It seems impossible that anyone residing in Southeast Alaska would be unaware of these changes, but nowhere in the baseline description of the affected environment or anywhere in the DEIS does the Forest Service disclose that it will be implementing this project concurrently with a salmon crisis.

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[283] *See, e.g.* Exh. 122 (Bryant & Everest 1998).

[284] Exh. 69. Johnson, A.C., J.R. Bellmore, S. Haught, and R. Medel. 2019. Quantifying the monetary value of Alaskan National Forests to commercial Pacific salmon fisheries. North American Journal of Fisheries Management. https://www.fs.fed.us/pnw/pubs/journals/pnw_2019_johnson002.pdf.

[285] *Id.*

[286] *See, e.g.* Exhs. 101-117 (ADF&G announcements, reports, and weekly harvest data).

[287] Exh. 69 (Johnson et al 2019).

Commercial fishing regulatory districts in southern southeast Alaska, especially Area 2 adjacent to Prince of Wales Island and Area 1 near Ketchikan, provide the majority of the pink salmon harvest during the even year cycle – as much as ninety percent of the harvest.[288] Significant restrictions in northern southeast Alaska have heightened the importance of returns to southern southeast Alaska pink salmon producing watersheds.[289] It is alarming that southern southeast Alaska pink salmon returns have started to fail during even years and become weaker during the odd year cycles due to unknown causes.[290] ADF&G closed the 2020 season early based on a historically low harvest and below average escapements.[291] The coho season was roughly half the 20 year average and the lowest on record over the past three decades.[292]

The Forest Service's 1995 Anadromous Fish Habitat Assessment made numerous findings and recommendations related to reducing the impacts of industrial clearcut logging on salmon habitat in southeast Alaska. The Assessment explained that:

> The cumulative effects of frequent disturbances in the Pacific Northwest have been shown to substantially reduce the quality of freshwater fish habitats resulting in negative consequences for species, stocks, and populations of fish that depend on them, even if coniferous cover is left in buffer strips along the fish-bearing streams. Fish-bearing streams represent only a small portion of stream mileage in any watershed. Because recovery of fish habitat from the effects of extensive logging in a watershed may take a century or more, recovery may never be complete if forests are clearcut harvested and watersheds are disturbed extensively on rotation cycles of about 100 years. Few refuges remain in a watershed that fish can use during such widespread, intense, and recurrent disturbances.
>
> …Should freshwater habitats be degraded for long periods, *salmon and steelhead stocks will eventually be confronted simultaneously with low marine productivity and degraded freshwater habitat. The likely result of such double jeopardy could be high, long-term risk of extinction*.[293]

Given current trends in pink and coho salmon production, the Tongass National Forest timber sale program and particularly this project present the "double jeopardy" situation described above. As explained below in Section VI., the cumulative effects of climate change and habitat degradation increase these risks and warrant disclosure and analysis.[294] Scientific studies have found strong negative correlations between logging road density,

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[288] Exh. 39 (ADF&G 2017).

[289] Exh. 41 (NOAA 2018); Exh. 42 (Viechnicki 2017a).

[290] Exh. 37 (Fishermen's News Online 2017); Exh. 40 (Viechnicki 2017).

[291] Exh. 49 (ADF&G, August 18, 2020); Exh. 63 (KFSK 8.30.20).

[292] Exh. 62 (ADF&G 9.15.20).

[293] Exh. 48. U.S. Forest Service. 1995. Report to Congress: Anadromous fish habitat assessment. Pacific Northwest Research Station, Alaska Region. R10-MB-279.

[294] Exh. 43 (Bryant 2008).

timber extraction and salmon productivity.[295] For example, NMFS has found that logging has:

> ... degraded coho salmon habitat through removal and disturbance of natural vegetation, disturbance and compaction of soils, construction of roads and installation of culverts. Timber harvest activities can result in sediment delivered to streams through mass wasting and surface erosion that can elevate the level of fine sediments in spawning gravels and fill the substrate interstices inhabited by invertebrates. The most pervasive cumulative effect of past forest practices on habitats for anadromous salmonids has been an overall reduction of habitat complexity from loss of multiple habitat components. Habitat complexity has declined principally because of reduced size and frequency of pools due to filling with sediment and loss of LWD (large woody debris).... As previously mentioned, sedimentation of stream beds has been implicated as a principal cause of declining salmonid populations throughout their range .... Several studies have indicate that, in [southern Oregon/northern California], catastrophic erosion and subsequent stream sedimentation [from major floods] resulted from areas which had been clearcut or which had roads constructed on unstable soils.[296]

Given these findings and recent declines in fishery outputs, the DEIS needs to evaluate losses associated with lost fishing revenues caused by logging and road construction. Habitat loss has a substantial impact on the commercial fisheries. It is possible to estimate the loss of salmon related economic values caused by logging and related road construction.[297] Canadian researchers in 2003 developed habitat values (which the authors described as conservative estimates) that ranged from $.026 to $1.40 per acre of watershed, or $1,491 to $7,914 per mile of spawning stream (converted to 2003 U.S. dollars – or roughly $10,000 per mile of spawning stream today).[298] A 1988 study identified significant economic losses to salmon fisheries caused by logging and road construction on just 21% of the Siuslaw National Forest.[299] Another study found that "if habitat improvements resulting from salmon-related logging restrictions generated one additional fish for the recreational fishery per year per acre for the foreseeable future, the asset value of

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[295] *See e.g.* Exh. 124 (Rhodes 2013); Exh. 133 (Frissell 2019) and reference lists attached to both sets of comments.

[296] Endangered and Threatened Species: Threatened status for Southern Oregon/Northern California Evolutionarily Significant Unit (ESU) of coho salmon. 62 Fed. Reg. 24588 at 24593 and 24599. May 6, 1997.

[297] Exh. 47, Foley, et al. 2012. A review of bioeconomic modelling of habitat-fisheries interactions. In: International Journal of Ecology, Vol. 2012. Doi:10.1155/2012/861635; Exh. 46, Knowler, D. et al. 2001. Valuing the quality of freshwater salmon habitat – a pilot project. Simon Fraser University. Burnaby, B.C.: January 2001; Exh. 45, Knowler, D.J., B.W. MacGregor, M.J. Bradford, and R.M. Peterman. 2003. Valuing freshwater salmon habitat on the west coast of Canada. In: Journal of Environmental Management, 69: 261-273 (Nov. 2003). Available at: www.sciencedirect.com/science/article/pii/S0301479703001543.

[298] Exh. 45 (Knowler et al. 2003).

[299] Loomis, J.B. 1988. The bioeconomic effects of timber harvesting on recreational and commercial salmon and steelhead fishing: a case study of the Siuslaw National Forest. In: Marine Resource Economics, Vol. 5; 43-60 (1988). This article can be reviewed in its entirety (but not downloaded) at www.jstor.org/stable/42871964?seq+2#page_scan_tab_contents. We request that the Forest Service obtain this study and include it in the planning record.

the habitat would be about $2,800 per acre" or seven times the forgone timber asset value of the land.[300]

In other words, this project will significantly sacrifice annually renewable economic outputs in order to supply Chinese mills. The DEIS needs to assess the significant positive economic impacts of the no-action alternative in terms of reducing risks of further declines in fishery outputs and disclose the significant risks that further aquatic degradation presents to fishery resources, particularly in combination with climate change.

B. Develop a watershed alternative with meaningful protective measures for fish habitat

If the Forest Service proceeds with this project a revised DEIS should include an alternative that is much more protective of fish habitat by, among other things, placing 300 foot no-cut buffers adjacent to all project area waterbodies and constructing no new roads. 500-foot no-cut buffers on Class I streams would have added value for ursine fisheries.

Tongass Land and Resource Management Plan desired conditions and standards for fish instruct the agency to maintain "habitat … to ensure sustainable fish and wildlife and their uses" and "sustain the diversity and production of fish …." Aquatic habitat quality should be "good to excellent" so "[f]ish thrive in the Forest's lakes and streams due to good water quality and other habitat features, *and provide world-class fisheries*." The agency should, among other things, prevent adverse effects to rearing and spawning habitat.

The DEIS failed to show how the Forest Service would address these desired conditions and standards for a aquatic habitat in the project area. A revised DEIS should address salmon habitat concerns in a significant way by including: (1) a full watershed analysis on a large scale so that the analysis encompasses road-stream connectivity across the affected landscape; (2) a prohibition on temporary or NFS road construction or reconstruction within 300 feet of any waterbody, including Class IV streams; (3) 300 foot riparian no-cut buffers on both sides of all streams, including Class IV streams and (4) funded mitigation aimed at fixing barrier culverts. These measures respond to recent reviews of Tongass timber analyses by expert fishery scientists who are highly critical of the agency's assumptions and Forest Plan standards. We have provided reference materials showing the inadequacies of the Forest Service's riparian standards and Best Management Practices that support these requests in Exhibit 87, Salmon Science Reference List.

1. Full watershed condition analyses are needed at multiple scales

The Forest Service should engage independent fisheries research scientists to inventory project area watersheds and road systems and identify risks to salmon. Road systems cross multiple watersheds making it necessary to assess impacts and conditions on a larger scale. There is a need to understand existing watershed/fish habitat conditions such as summer stream temperatures, identify areas in need of immediate restrictions on timber extraction, cumulative sediment sources and other factors that are beyond the capacity of timber sale planners. At the October 13 meeting in Ketchikan to discuss this project, Forest Service planners explained that they did not do a salmon habitat assessment, but simply believed there would be no adverse impacts to salmon. Non-agency analysis or at a minimum peer review will be necessary to understand project area watershed conditions. Urgent concerns that warrant a watershed analysis range from assessing summer stream

[300] Exh. 44 ECONorthwest. 1999. Salmon, timber and the economy. Numbers in 1999 dollars.

temperatures to evaluating road-stream connectivity to assessing potential future cumulative impacts caused by logging on Alaska Mental Health Trust lands.[301]

Forest Plan Guideline F directs the agency to "maintain or restore optimum water temperatures for salmonids …." Summer stream temperatures on known fish-bearing streams should be between "50 & 68 degrees Fahrenheit or at natural levels." Summer stream temperatures throughout Alaska and in the Tongass National Forest have recently and significantly exceeded levels deemed safe for fish. But the Tongass National Forest does not collect stream temperature data as part of project-level analyses, and wrongly relies on narrow riparian buffers to regulate stream temperatures.

Timber projects significantly elevate stream temperature, even in systems with riparian buffers. Shade removal on unbuffered, Class IV streams is also a major factor. Watershed analyses are necessary to assess factors that cumulatively affect water temperatures, whether cumulative loss of riparian shading or microclimate regulation due to roads, landing and logging. Loss of temperature regulation services caused by logging and road construction can be irreversible. Thus elevated water temperatures of just a half degree Fahrenheit are a significant concern in a changing climate because they cause serious and chronic negatively impacts on all forest fish, including direct habitat loss, thermal passage barriers, reduced egg survival and increased susceptibility to disease. The DEIS relies solely on 100-foot buffers in identifying "negligible" effects to stream temperature, despite several independent reviews of Tongass timber sales and numerous scientific studies showing the inadequacy of buffers in maintaining sufficiently cool stream temperatures.[302] As explained below in Section VI., there is an urgent need to better understand riparian shading and climate change.

2. Forest fish need wider riparian buffers for sediment control

The DEIS relies on riparian harvest buffers on Class I and II (and some) Class III streams to "avoid direct impacts to stream habitat" so that there would only be "minor to negligible" effects from sediment "mostly limited to road-stream crossings."[303] These findings are inconsistent with the scientific literature relevant to logging and timber road construction impacts on water quality. There is a significant concern about the effectiveness of Best Management Practices (BMPs) in mitigating harms to fish habitat, particularly compared to limiting or avoiding activities that damage aquatic habitat in the first place. Effective mitigation strategies are those that prohibit logging and road construction activities in a riparian no-cut buffer with sufficient width to prevent or reduce transmitting upslope impacts to streams. The Tongass National Forest relies largely on riparian buffers to meet planning objectives to protect aquatic habitats and their water quality and manage them for short- and long-term biodiversity and productivity, including fish production. The problem is that Tongass National Forest no cut buffers only extend to 100 feet of either side of Class I streams and Class II streams that flow directly into a Class I stream, with some discretionary buffers on Class III streams. These buffer requirements exclude smaller streams that influence downstream water quality and are not wide enough to reduce upslope impacts, to maintain riparian functions or prevent further degradation of aquatic habitat conditions.

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[301] DEIS at 179 (the DEIS did not assess planned timber take on non-NFS lands in the cumulative effects analysis).

[302] Exh. 124 (Rhodes 2013); Exh. 133 (Frissell 2019); Exh. 140 (Siegel & Crozier 2019).

[303] DEIS at 188.

Forest planners in the lower 48 recognized that water quality in streams that support Pacific Northwest salmon depended on the integrity of surrounding upland and riparian areas. Measures to conserve the species included extended riparian habitat conservation areas to 300 feet for fish-bearing streams, and 150 feet for permanent non-fish bearing streams and around ponds, wetlands and other waterbodies greater than one acre. The wider, no-cut buffers respond in part to studies showing that the wider buffers were the most effective way to limit impacts from upslope logging disturbances.

Wider buffers are also necessary because roads contribute sediment to streams at multiple points whenever they are relatively close to streams, particularly in areas with high levels of precipitation. Studies from the Pacific Northwest found that roads within 300 feet of streams cause significant increases in sediment delivery to downstream fish habitats. Road construction and use outside of the Tongass National Forest's narrower 100-foot buffers immediately elevates erosion and sediment delivery and can cause elevated sediment delivery relative to undisturbed areas for decades. This is a major problem because roads are the single largest source of fine sediment which is the most harmful to salmon. Another significant problem is that roads pierce buffers at stream crossings, significantly weakening buffer effectiveness.

Finally, buffer requirements need to encompass currently unbuffered headwaters streams (Class III streams exempted from buffers under the Forest Plan and Class IV streams that do not normally provide habitat for fish) that are a major source of sediment delivery to downstream fish-bearing streams. These streams are collectively important because they usually comprise the bulk of a stream network and are more vulnerable to sedimentation and peak flow alteration by roads, and upslope activities. The failure to buffer these smaller streams will degrade various downstream fish habitat features, including temperatures, that affect salmon survival and productivity.

3. The project should prohibit road density increases to protect fish

The DEIS discloses road densities based on the amount of existing roaded area exceeding 2.5 percent of a basin area.[304] A revised DEIS should disclose road densities on a finer scale by watershed – for example, within 300 feet of a stream. Numerous scientific studies show that watersheds with high proportions of roadless area support higher numbers of salmon and more diverse salmon populations. In other words, road density increases degrade salmon habitats and reduce in salmon populations. The Forest Service's own researchers (Gucinski et al, 2001; USFS & USBLM 1997) have found ample evidence showing that increasing road densities, even at low levels, lead to declining salmon populations. For example, a road density of .1 mile per square mile generally means a low level of stream degradation while .7 miles per square mile equates to high levels of habitat degradation. This means that most project area watersheds have road densities exceeding high levels of habitat degradation. Road construction, including temporary roads, can cause enormously elevated sediment relative to undisturbed areas for decades. There are no Best Management Practices that can eliminate these impacts, particularly sediment discharges at stream crossings.

C. The Forest Service must include a funded plan to replace red culverts

A major habitat problem for Southeast Alaska salmon is the number of stream miles blocked by failed culverts ("red" or "barrier culverts"). Road crossings of any kind over streams, and particularly failed culverts, can over time begin to impede fish passage or become complete barriers. Barrier culverts throughout a watershed cumulatively reduce

[304] *Id.* at 167, 186.

salmon stream productivity by impairing in-stream migration and foraging by juveniles, slowing their growth and development. There are 32 red culverts in the project area blocking 18.5 miles of upstream habitat.[305] There are a handful of them in a six mile span on the 830000 road alone, blocking a total of 4 miles of spawning habitat, including one that blocks nearly three miles.[306] On the 8337000 road, one culvert blocks over three miles of habitat.[307] Two culverts on the 8430000 and 8440000 roads block five miles of habitat, but the Forest Service has not surveyed them to assess whether they are a priority for replacement.[308]

The DEIS promises prioritizing repairs but failed to provide a meaningful mitigation measure that fixes fish passage in the project area. The Forest Plan directs the agency to "[m]aintain, restore, or improve," stream conditions that impede fish passage and "include funding for maintenance in the planning and budgeting for all projects." The Tongass National Forest has failed to meaningfully address fish passage concerns for two decades, and the agency needs to include fixing more than a mere few to mitigate harms from this project. Fixing these problems is also an obligation under the Clean Water Act and Alaska state law.

During the 1990s, the Alaska Department of Fish and Game surveyed 60 percent of Tongass National Forest roads to assess fish passage problems. Two-thirds of the culverts on Class I streams (179) and 85 percent of the culverts on Class II streams (531) failed fish passage standards.[309] The Forest Service addressed some of these problems between 1998 and 2006, fixing roughly 50 sites per year. The culvert repair program ended in 2006 due to funding cuts. Now there are 1,100 red culverts blocking 270 stream miles of fish habitat, with most of them concentrated in central and southern Southeast Alaska.

The issue of blocked culverts is so important to salmon habitat that tribes have sued the state of Washington in order to require it to fix barrier culverts in order to increase salmon populations in the region.[310] As explained by Earthjustice in an amicus brief filed on behalf of commercial fishermen in the state of Washington:

> … because barrier culverts block access to habitat entirely, barrier removal is frequently the most effective recovery measure (and often the measure with the most immediate positive impact) when compared with other habitat recovery efforts, such as reforestation, repairing stream-straightening or channelization, or increasing flows. *And obviously, other habitat restoration efforts will be futile if salmon are unable to access the restored habitat.*

EarthJustice's brief noted that the district court agreed that barrier culverts "have a significant total impact on salmon production" due to "a negative impact on spawning success, growth and survival of young salmon, upstream and downstream migration, and overall production." Thus, removing them "provides immediate benefit in terms of salmon production, as salmon rapidly re-colonize the upstream area and returning adults spawn there."[311]

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[305] *Id.* at 172.

[306] *Id.*

[307] *Id.*

[308] *Id.* at 173.

[309] Exh. 82 (ADF&G 2000).

[310] Exh. 43 (PCFFA 2017).

[311] *Id.*

While the project area has numerous red culverts, the DEIS identifies only two watersheds for planned repair, and only one watershed, Licking Creek, where the agency would fix culverts, replacing them with bridges.[312] The Essential Fish Habitat evaluation asserts that "[e]xisting red crossings on NFS roads are planned to be repaired, with priority replacement given to those with higher remediation scores."[313] These statements are not reassuring. There are nearly 800 red culverts within the Craig, Petersburg, Thorne Bay and Wrangell Ranger Districts; the Forest Service secured funding for 3 replacements on Prince of Wales Island in 2020 and proposed to replace 3 red culverts on Zarembo Island in 2020.[314]

D. The Forest Service must consider alternatives and mitigation measures for estuarine habitat affected by log-transfer facilities

Additionally, the DEIS should more carefully assess adverse impacts to estuarine habitat. The project will likely require the use or reconstruction of one of four log transfer facilities.[315] During the 1990s, the use of LTFs by the Forest Service and others caused severe damage to sixteen saltwater ecosystems in southeast Alaska, resulting in the designation of Category 5 impaired waterbodies.[316] This project could entail log rafting which harms juvenile salmon and other species, with additional cumulative effects associated with Alaska Mental Health Trust logging.[317]

Defenders has significant concerns about LTFs and increased volume of timber moved through by state and private timber operators. The potential direct, indirect and cumulative effects of federal and non-federal log rafting on fisheries and fishery habitat is a significant concern and requires detailed NEPA analysis.[318] In-water log storage degrades water quality below levels necessary to protect existing commercial fisheries. There is a significant body of science that shows the incompatibility of the marine log storage with benthic habitat. Scientists and resource managers recognize that toxins, bark debris accumulations and the low dissolved oxygen levels they cause adversely impact shellfish species such as Dungeness crab in numerous ways, causing reproductive problems, disease, deformities, prey depletion.[319]

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[312] DEIS at 169.

[313] *Id.* at 189.

[314] Exhs. 142, 143.

[315] DEIS at 174.

[316] Alaska Division of Environmental Conservation. __. PUBLIC NOTICE DRAFT Integrated Water Quality Monitoring and Assessment Report at 41-50, 80.

[317] DEIS at 174, 190, 192.

[318] 40 C.F.R. § 1508.18.

[319] *See e.g.* Exh. 52, Washington Dept. of Fish and Wildlife. 2008. Management Recommendations for Washington's Priority Habitats and Species: Dungeness Crab; Exh. 56, Sedell, J.R., F.N. Leone and W.S. Duval. Water Transportation and Storage of Logs. IN: Meehan, W.R. 1991. Influences of Forest and Rangeland Management on Salmonid Fishes and Their Habitats. American Fisheries Society Special Publication 19; Exh. 61, O'Clair, C.E., and J.L. Freese. 1988. Reproductive condition of Dungeness crabs, Cancer magister, at or near log transfer facilities in Southeastern Alaska. Marine Environmental Research 26:57-81; Exh. 59, Morado, O'Clair & Sparks. 1988. Preliminary Study of Idiopathic lesions in the Dungeness crab, Cancer magister from Rowan Bay, Alaska; Exh. 60, O'Clair, C.E. and L. Freese. 1985. Responses of Dungeness crabs, Cancer magister, exposed to bark debris from benthic deposits at log transfer facilities: Survival, feeding and reproduction. Pages 227-229 in B.R. Melteff, Symposium Coordinator. Proceedings of the symposium on Dungeness crab biology and management. Univ. of Alaska Sea Grant Rep. 85-3; Exh. 55, Kirkpatrick, B., T.C. Shirley and C.E.

For these and other reasons related to water quality degradation and impacts to the region's more important economic sectors, the LRMP provides that "[w]here feasible, preference should be given to onshore storage and barging of logs." Because the large volume of timber for this project combined with uses by other timber agencies meets or exceeds the volumes that caused Category V water quality, the Forest Service needs to prohibit in-water log storage in LTFs.[320] The Forest Service should "[a]void, where practicable, siting log transfer, rafting and storage facilities in areas with established commercial, subsistence, and sport fishing activity, high levels of recreation use, areas of high scenic quality, or documented concentrations of species commonly pursued by commercial, subsistence, and sport fishers." Also, LTFs should not be located "in areas known to be important for fish spawning and rearing because of "the high value of the fisheries resources." However, these guidelines are too discretionary.

The Forest Service needs to provide detailed information about the actual amount of timber transferred through the LTFs, and analyze whether those locations would be consistent with Appendix G guidelines. The discussion needs to disclose the adverse environmental impacts caused by bark accumulation and the numerous other adverse and potentially long-term impacts caused by anaerobic conditions and benthic pollution that is toxic to many marine organisms.[321]

The DEIS should also comply with the consultation and best available science requirements of the Magnuson-Stevens Fishery Conservation and Management Act with regard to Essential Fish Habitat. The increased use of federally funded or operated LTFs by federal, state and private operators involves "potentially large numbers of individual actions that may adversely affect EFH."[322] Further, the level of detail in an EFH should reflect the best available science, and provide an analysis of adverse effects and proposed mitigation.[323] The significance of nearshore areas to the commercial fisheries warrants a literature review, further site-investigations, and consideration of alternatives that could minimize or avoid adverse effects, including a prohibition on in-water log storage.[324]

A NEPA analysis must provide a detailed discussion of means to mitigate adverse environmental impacts and the effectiveness of those measures, and cannot forgo this analysis by deferring to state regulatory agencies.[325] The Forest Service needs to evaluate how it will minimize the effects of in-water log storage or clean up the mess afterwards. Timber operators in British Columbia employ site deactivation procedures in order to minimize long-term impacts and conduct baseline assessments prior to development.[326] The

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O'Clair. 1998. Deep-water bark accumulations and benthos richness at log transfer and storage facilities. Alaska Fishery Research Bulletin, vol 5(2): 103-115.

[320] *See* Exh. 58 at 2 (NMFS 2006)(recommending that the EPA not issue a general permit for in-water log storage in southeast Alaska because adverse impacts to marine habitat).

[321] *Id.*

[322] 16 U.S.C. § 1855(b)(2); 50 C.F.R. § 600.920(j)(1).

[323] 50 C.F.R. § 600.920 (d), (e)(3).

[324] *Id.*

[325] 40 C.F.R. § 1502.16(h); *Oregon Natural Resources Council v. Marsh,* 382 F.2d 1489 (9th Cir. 1987); *Friends of the Earth v. Hall,* 120 (W.D. Wash. 1988 (state agencies cannot address the sufficiency of a federal EIS under NEPA).

[326] Exh. 51 (Triton Consultants); Exh. 78 (DFO).

Washington Department of Fish and Wildlife recommends replanting marine vegetation and removing woody debris in order to mitigate LTF effects on crab.[327]

In sum, the DEIS must provide detailed information about existing proposed new LTF sites, the impacts on the commercial fisheries, consult with NMFS and provide a full analysis of LTF impacts to fish and shellfish habitat, and includes means to mitigate impacts, including a prohibition on in-water log storage, contemporary mitigation measures, and seasonal and timing restrictions on log transfer activities to mitigate disruptions to commercial and recreational users of southeast Alaska's bays and inlets.

E. Conclusion

If you proceed with this project, a revised DEIS should develop an aquatic habitat alternative with substantially downscaled timber volumes, particularly in any watersheds connected to areas vulnerable to future Alaska Mental Health Trust logging, given the stated concern in the DEIS about that agency's logging causing fish passage failures and increasing stream temperatures.[328]

VI. The DEIS ignores climate change impacts

The DEIS references the 2016 Forest Plan FEIS and a "growing body of literature on the topic of climate change and the likely effects on aquatic and terrestrial ecosystems" and promises a "qualitative discussion" that it describes as "an evaluation of how climate change may modify conditions in the project area."[329] Recent scientific studies explain that climate change is "altering conditions for tree recruitment, growth and survival and impacting forest community composition."[330] These impacts include threatening successful tree regeneration, unprecedented climate and disturbance conditions and changes to forest community composition.[331] The DEIS, as with other resource values, identifies no cumulative effects to forest vegetation associated with climate change.[332]

Also, there is no discussion – even qualitative - of climate change effects to project area resources.[333] The section of the DEIS specific to climate change identified one possible cumulative effect arising from logging, timber road construction and climate change – possible adverse impacts from peak stream flow increases.[334] There was no mention of climate change at all in the analysis of cumulative impacts to wildlife populations.[335] The analysis of effects to fisheries and aquatic habitat did mention potential cumulative effects associated with climate change, but declined to analyze these effects or incorporate them into the effects determinations based on the Forest Service's belief mild climate change effects

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[327] Exh. 52 (WDFW 2008).

[328] DEIS at 193.

[329] DEIS at 238-239.

[330] Exh. 88. Bisbing et al. 2019. From canopy to seed, loss of snow drives directional changes in forest composition.

[331] *Id.*

[332] DEIS at 143-144.

[333] *Id.* at 238-240.

[334] *Id.* at 240.

[335] *Id.* at 84-110.

relevant to water quality in Southeast Alaska will not happen for another two decades, in 2040 with more severe effects delayed until the end of the 21st century.[336]

Defenders requests that a revised DEIS consider and disclose how logging and timber road construction worsen threats posed by climate change to project area forest resources. For example, rapidly changing environmental conditions necessitate a discussion of the effect of new clearings and roads on abnormal heating and drying of the forest. Old-growth logging (in particular) and also second-growth logging contribute to global carbon emissions and climate change has significant ramifications for forests and biodiversity. The DEIS cannot rely on the outdated analysis from the 2016 Forest Plan FEIS which admits that the climate is warming and that a warming climate could impact forest resources but claims there is so much uncertainty about these changes that climate change is irrelevant to forest management decisions.[337]

NEPA imposes "a continuing duty to gather and evaluate new information" relevant to environmental impacts.[338] The DEIS must consider recent and ongoing changing environmental conditions:

> When new information comes to light, the agency must consider it, evaluate it and make a reasoned determination whether it is of such significance as to require implementation of formal NEPA filing requirements. Reasonableness depends on the environmental significance of the new information, the probable accuracy of the information, the degree of care with which the agency considered the information and evaluated its impact.…[339]

Alaska climate scientists have already shown that extreme weather events are occurring now, and will continue.[340] Alaska has already warmed twice as fast as the rest of the planet, with record high temperatures occurring with what scientists describe as "astounding" frequency.[341] A 2019 update on climate change effects in the state explains that over the past four years southeast Alaska has experienced record temperatures and a prolonged drought.[342] Alaska's record heat wave in 2019 was newsworthy throughout the state and nation and included exceptionally hot temperatures in southeast Alaska.[343] These changes are occurring at a rapid rate. For example, Southeast Alaska has just experienced a prolonged drought with record low rainfall.

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[336] *Id.* at 167-196.

[337] *Id.* at 238.

[338] *Warm Springs Dam Task Force v. Gribble,* 621 F.2d 1017, 1023-24 (9th Cir. 1980)

[339] *Id.*

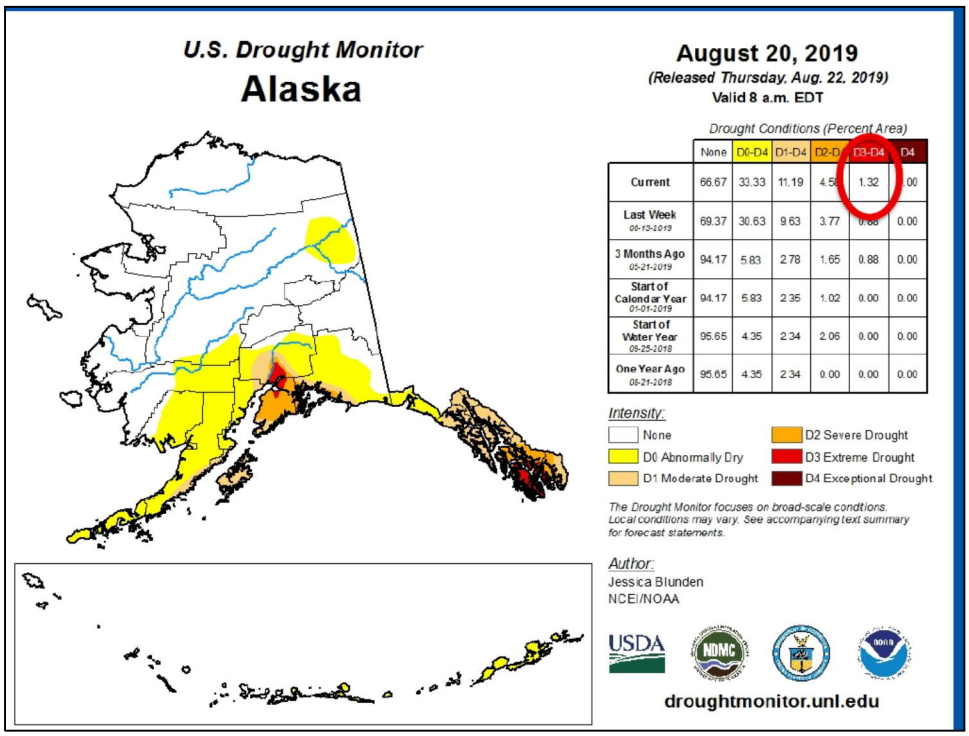
[340] Exh. 138. Lader R. 2018. Emergent impacts of rapidly changing climate extremes in Alaska.

[341] Exh. 139. Markon, C.S., Gray, M., Berman, I. Eerkes-Medrano, T. Hennesy, H. Huntington, J. Littell, M. McCammon, R. Thoman and S. Trainor, 2018. 2018: Alaska. In Impacts, risks and adaptation in the United States: Fourth National Climate Assessment, Volume II.

[342] Exh. 84. Thoman, R. & J.E. Walsh. 2019. Alaska's changing environment: documenting Alaska's physical and biological changes through observations H.R. McFarland, ed. International Arctic Research Center, University of Alaska Fairbanks.

[343] https://www.nbcnews.com/news/weather/record-heat-alaska-melts-glaciers-hints-bigger-problems-may-be-n1034766; https://www.alaskapublic.org/2019/08/15/alaskas-summer-heatwave/; https://earthobservatory.nasa.gov/images/144796/alaska-hit-with-a-hot-march

This drought was unusual in that Southeast Alaska is normally one of the wettest areas in the world, yet the Standardized Precipitation Index for the region showed values in 2017-2019 that were the lowest rainfall on record.[344] Then, in 2020, the region had record rainfall amounts and numbers of consecutive rainy days. [345] Both record precipitation amounts and numbers of consecutive wet days are consistent with projections for more extreme weather patterns.[346] Alaska climate scientists explain that these phenomena – "both the very dry conditions relative to the long term normal and this very wet weather" – are attributable to the changing climate. [347]



The DEIS arbitrarily ignores these changes, particularly as they may affect fishery resources. It states that climate change effects "are difficult to determine in the context of 'existing' condition within the project area."[348] The DEIS notes potential long-term consequences could include water temperature changes, snow characteristics, stream flow patterns and other changes.[349] It acknowledges that increases in water temperature will occur, and that risks to salmon include productivity losses caused by streambed scour and "loss of habitat" from increased stream temperatures.[350]

But then the DEIS ignores dozens of scientific studies and recent events, and it reports that these and other climate change effects will be irrelevant to forest management for decades: "[r]egional trends in southeast Alaska toward a warmer, wetter climate are predicted to increase mid- and late-21st century mean annual flood size" and hydrological changes associated with "snow droughts" – i.e. the transition from snow dominated

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[344] Exh. 14. (Thoman, R. 2019).

[345] Exh. 85 (KRBD 8.30.2020).

[346] Exh. 86, Lader, R., J.E. Walsh, U.S. Bhatt & P.A. Bienek. 2017. Projections of Twenty-First-Century Climate Extremes for Alaska via Dynamical Downscaling and Quantile Mapping. In: Journal of Applied Meteorology and Climatology 56. September 2017.

[347] Exh. 85 (KRBD 8.30.2020).

[348] DEIS at 164.

[349] *Id.* at 164.

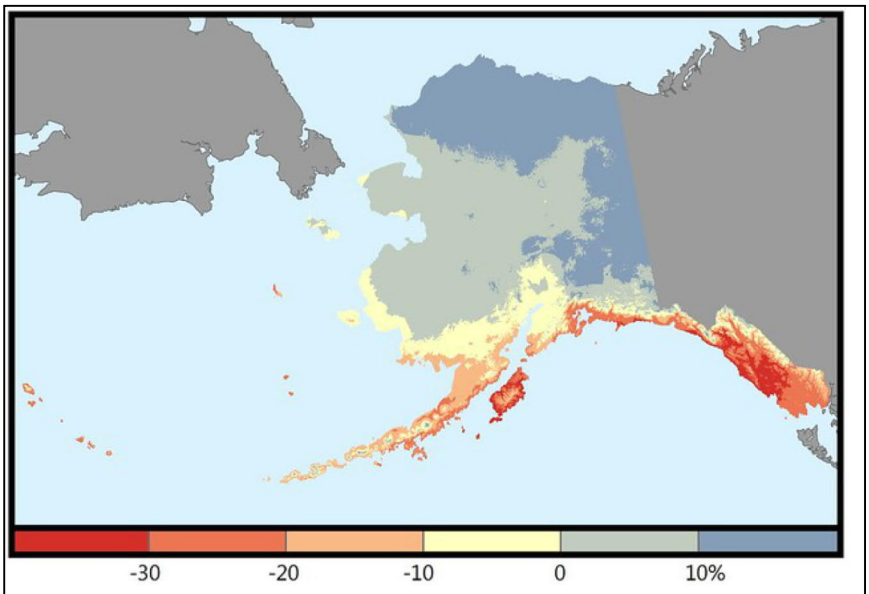
[350] *Id.* at 188.

watersheds to rain dominated watersheds – will not occur until the late 21st century after mid-century (2040-2069) changes in percentages of snow days.[351]

The only climate change effect considered anywhere in the cumulative effects analyses in the DEIS is peak flow. The DEIS reports that:

> "Peak flow increases from timber harvest are more likely to occur immediately following [clearcutting], whereas those predicted due to climate change would occur more gradually. As such, the likelihood of a one-to-one additive cumulative effect to peak flows is low. Also, the length of time between predicted initiation of climate change increases (earliest in 2040) would result in significant vegetative regrowth and resultant hydrologic recovery, further diminishing the potential cumulative impact of these increases."[352]

Recent studies specific to Southeast Alaska show that "anomalous" weather patterns such as low snow years combined with higher summer air temperatures are affecting salmon stream temperatures.[353] It is beyond dispute that the region has become warmer over the past decade.[354] The DEIS provides no data to support its assumptions that the increased frequency of more extreme weather events that could cause flooding or other cumulatively adverse impacts to salmon are willing to wait until five years after the Forest Service finishes clearcutting the project area. Indeed, the Alaska Center for Climate Assessment and Policy provides access to numerous peer-reviewed publications detailing and projecting climate trends that affect project area fish – from "snow droughts" to regional warming by season to extreme precipitation events.[355] Defenders expects Forest Service personnel to fully review these studies in a revised DEIS if you proceed with this project.



As warming in Alaska continues, the amount of snowpack remaining at the end of winter will change. The snow-water equivalent, or the amount of water held in the snowpack, on April 1, is predicted to increase in some parts of Alaska, and decrease in others. In the map above, you can see the changes predicted by 2050. (USDA Forest Service)

The Forest Service itself has projected further future reductions in the regional snowpack, and yet the DEIS would have everyone believe that these changes will happen all at once, in 2050, rather than through ongoing weather extremes occurring between now and then:

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[351] *Id.* at 175.

[352] *Id.* at 179, 187.

[353] Exh. 144 (Winfree & Hood 2018).

[354] Exh. 129 (Brinkman et al. 2013, Tongass Climate Change Vulnerability Assessment).

[355] https://uaf-accap.org/about-accap/peer-reviewed-publications/

One of most significant omissions in the DEIS is the failure to understand or analyze the cumulative impacts of logging, timber road construction and climate change on stream temperature. A primary reason that forests are vital to salmon productivity in aquatic ecosystems is because they regulate stream temperatures. Forest Plan Guideline F directs the agency to "maintain or restore optimum water temperatures for salmonids …." Summer stream temperatures on known fish-bearing streams should be between "50 & 68 degrees Fahrenheit or at natural levels." The DEIS does not consider the cumulative effects of climate change on stream temperatures at all, based on the Forest Service's belief that watershed scale logging has "no detectable effect … on stream temperature," or, if it does, that 100-foot no-cut buffers on both sides of Class I and II streams and some type of buffer on some Class III streams will reduce risks that stream temperatures will increase.[356]

The Forest Service's conclusion conflicts with numerous studies showing that timber projects significantly elevate stream temperature, even in systems with riparian buffers.[357] Shade removal on unbuffered, Class IV streams is a a major factor.[358] Watershed analyses are necessary to assess factors that cumulatively affect water temperatures, whether cumulative loss of riparian shading or microclimate regulation due to roads, landing and logging.[359] Loss of temperature regulation services caused by logging and road construction can be irreversible.[360] Thus elevated water temperatures of just a half degree Fahrenheit are a significant concern in a changing climate because they cause serious and chronic negatively impacts on all forest fish, including direct habitat loss, thermal passage barriers, reduced egg survival and increased susceptibility to disease.[361]

There were numerous studies produced regarding climate change, stream temperatures and salmon in 2018 alone, with projections for increased cumulative temperature exposure for salmon and findings that "thermal and flow thresholds were exceeded with increasing regularity" throughout the Pacific Northwest.[362] Studies today provide an increasing emphasis on riparian shading because solar radiation is a major driver of stream temperatures. Multiple studies show canopy cover can significantly mitigate the effects of solar radiation, particularly on smaller streams.[363] Lowland area streams, typically migration corridors, are most vulnerable to changes in air temperature. Had the DEIS taken either watershed analysis or climate change seriously it would be possible to identify thermal refugia for fish in the project area.[364] One common feature is intact riparian corridors.[365]

Alaska's water quality standards for temperature are 15° Celsius (59° F) for migration routes and rearing areas and 13° Celsius (55.4° F) for spawning areas and egg and fry

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[356] *Id.* at 167, 179.

[357] *See e.g.* Exh. 124 (Rhodes 2013); Exh. 133 (Frissell 2019) and reference lists attached to both sets of comments.

[358] *Id.*

[359] *Id.*

[360] *Id.*

[361] *Id.*

[362] Exh. 140 (Siegel & Crozier 2018 (Impacts of Climate Change on Salmon in the Pacific Northwest: a review of the scientific literature published in 2018).

[363] *Id.*

[364] *Id.*

[365] *Id.*

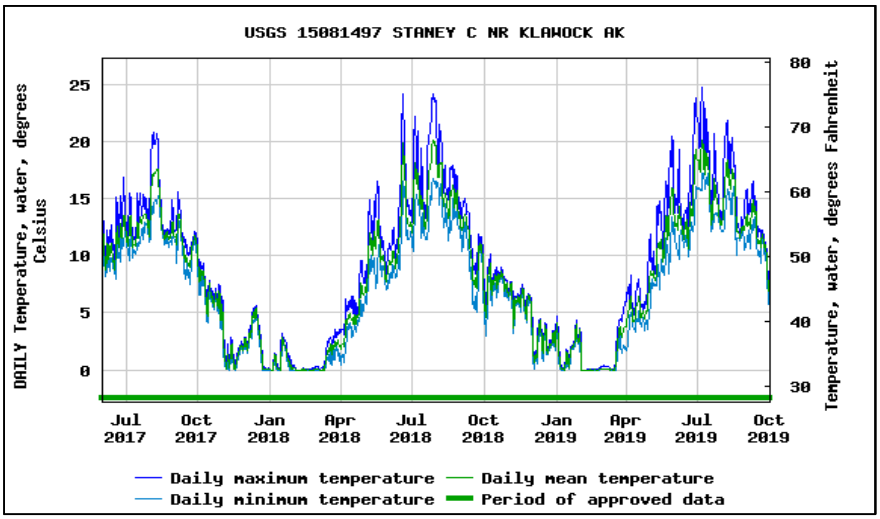
incubation. Temperatures above 20° Celsius (68° F) are generally deemed lethal for salmon. As reported to the North Pacific Fishery Management Council by Cook Inletkeeper this fall, 2019 stream temperatures in many parts of Alaska far exceeded the 13° Celsius (56° Fahrenheit) threshold for fish, in some cases reaching 26.7° Celsius (80° Fahrenheit).

Stream temperature studies from Cook Inlet and Kenai Peninsula river systems indicated that rising spawning season temperatures reduced salmon productivity, including increased mortality of migrating adults or eggs. Also, the number of weeks that stream temperatures exceeded 59° Fahrenheit (15° Celsius) during juvenile rearing also reduced productivity, including slower juvenile growth and poor survival. These findings are causing questions about the prevailing viewpoint that ocean conditions are the primary cause of salmon population declines in Alaska. Freshwater processes may also have a signficant role in reducing salmon productivity – particularly drought and warming stream temperatures.

For example, in western Alaska, thousands of salmon died in June and July of 2019 while migrating upstream to spawning grounds. The suspected cause was unusually warm water temperatures. Surveys of the Koyukuk River, a major tributary of the Yukon River, confirmed thousands of dead summer chum salmon as stream temperatures reached 64° Fahrenheit, exceeding typical temperatures for that tributary by 3 - 5° Fahrenheit.

These concerns are present in southeast Alaska. Low stream flows and/or high temperatures may have played a significant role in low juvenile pink salmon abundance indices in southeast Alaska. The Alaska Department of Fish and Game suspects that pink salmon may be experiencing poor freshwater survival – drought conditions in southeast Alaska may have reduced spawning success or negatively impacted overwinter egg survival or development of alevins. The DEIS relies on Forest Plan analysis which claims, based on studies from the 1990s and insists, even today, that increased summer temperatures in southeast Alaska are of little concern, "due to the normal cool climate conditions."[366]

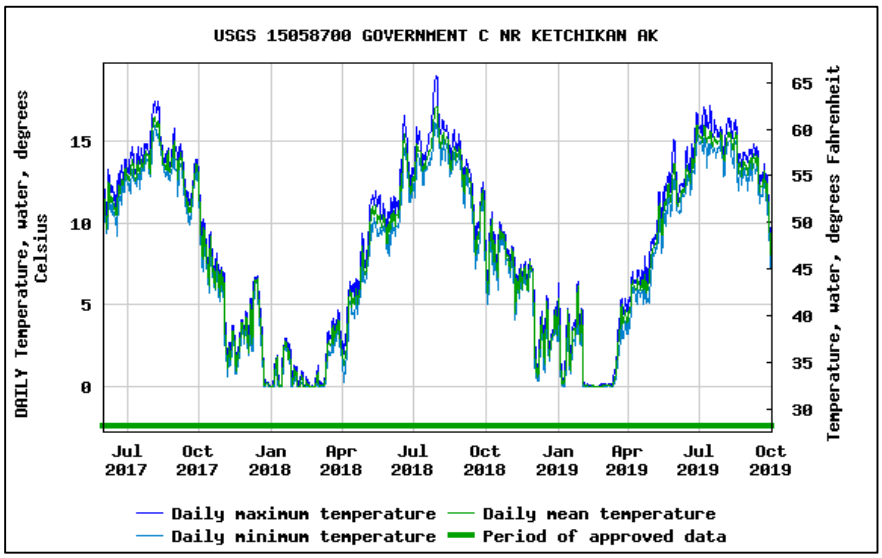
There is an active stream temperature monitoring network throughout the state operated by the Alaska Center for Conservation Science at the University of Alaska Anchorage. The Center's monitoring data shows that in Staney Creek, a heavily logged watershed near Klawock on Prince of Wales Island, summer stream temperatures exceeded lethal levels each of the past three years.



Graphics credit: Alaska Center for Conservation Science

Late summer temperatures also exceeded temperature standards in Government Creek near Ketchikan over the same three-year period.

[366] 2016 Forest Plan FEIS at 3-108.



Graphics credit: Alaska Center for Conservation Science

In sum, summer stream temperatures throughout Alaska and in the Tongass National Forest have recently and significantly exceeded levels deemed safe for fish, but the DEIS unlawfully failed to examine the cumulative effects of climate change and logging on stream temperatures. In addition to temperature concerns, there are already southeast-Alaska specific studies identifying the effects of "extreme hydrological events" such as major winter floods that the DEIS projects will occur much later in time. But there is already available data to inform how higher future flooding frequencies can impact pink salmon productivity in Southeast Alaska through egg scour mortality.[367] Heatwaves are expected to increase in duration, frequency and intensity. The Forest Service should produce a revised DEIS that does a better job of evaluating potential near-term climate change impacts rather than treating them as a hoax aimed at increasing the cumulative impacts of Tongass raw log exports on the U.S./China trade imbalance.[368]

VII. Conclusion

For the above reasons, we request you rescind this DEIS and cancel any further planning on this project. If you do proceed, we request that you prepare a revised DEIS, to do a better job as discussed above and to include several additional issues as follows:

(1) This project appears to disproportionately target red cedar.[369] Further NEPA analysis should disclose and evaluate cedar and large-tree old-growth high-grading, whether or how to lessen the cumulative impact of the practice and assess potential impacts of reasonably foreseeable future highgrading both high-volume old-growth and both cedar species. The DEIS should also provide information about cedar regeneration in the project area. Cedar high-grading is a significant issue in part because it results in clearcutting large forested areas with ecological effects to old-growth dependent wildlife that range from bear denning

[367] Exh. 140 (Siegel & Crozier 2018 (Impacts of Climate Change on Salmon in the Pacific Northwest: a review of the scientific literature published in 2018).

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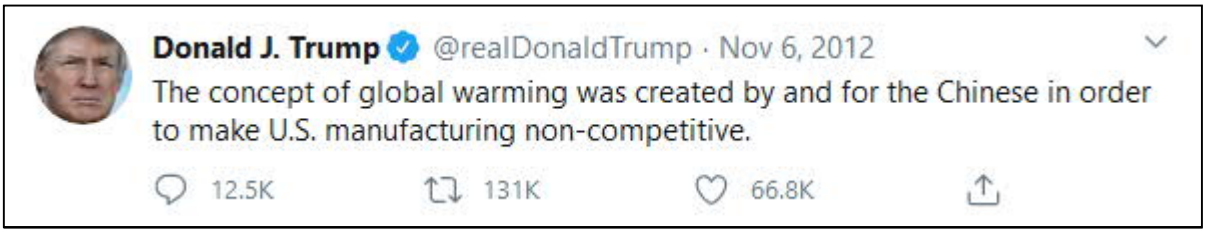

[369] DEIS at 129.

habitat to nesting habitat for avian species.[370] As explained in a recent review of British Columbia's logging practices, "the treatment of cedar is the very definition of high-grading: logging one species to the exclusion of another."[371] Throughout British Columbia and southeast Alaska, cedar is one of the few species that generates profits for timber companies.[372]

(2) The DEIS proposes to "improve wildlife habitat" by thinning in young growth stands, beach and estuary fringe, and riparian management areas.[373] Evaluate the extent to which second-growth treatments in conservation areas are experimental, and consider the effectiveness of those treatments relative to environmental harms done by logging in conservation areas.[374]

(3) The DEIS briefly describes the Roadless Area Conservation Rule and wrongly concludes that there are no indirect effects to the roadless areas in the absence of planned timber take.[375] The Saddle Lakes project would have affected roadless values in both the North Revilla and Carroll inventoried roadless areas, even with 600 foot buffers between the roadless areas and clearcuts and 1,200 buffers between roads the roadless areas.[376] Also, the land exchange, at least as analyzed in 2014, would have sacrificed portions of the roadless areas to the Alaska Mental Health Trusts land inventory subject to rapacious logging.[377]

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[370] Exh. 89. Nelson, J. Vanishing Heritage: the loss of ancient red cedar from Canada's rainforests.

[371] *Id.*

[372] *Id.*

[373] DEIS at 6. Note that DEIS will do logging in non-development LUDS that the FS thinks will have short and especially long-term benefits.

[374] *See e.g.* Exhs. 15 – 23; 26-27.

[375] DEIS at 240.

[376] Exh. 72 (Howle 2014)(991 acres affected, alternative 5 (highest volume, 33 mmbf project).

[377] *Id.*; Exh. 137 (KMRD 2014).