

TLMP at 4-89 (WILD1.II.B.); *see also id.* at 3-62 (WILD1.A) (“[m]aintain contiguous blocks of old-growth forest habitat in a forest-wide system of old-growth reserves to support viable and well-distributed populations of old-growth associated species and subspecies”). As the FEIS explains, “[t]he Forest Service . . . specifically incorporated the requirement to maintain viable populations into [TLMP’s] standards and guidelines,” FEIS at B-35 (citing TLMP at 4-89 (WILD1.II.B)), including “[s]pecific standard and guidelines . . . to address wolves,” *id.* (citing TLMP at 4-95 (WILD1.XIV)). According to the FEIS, meeting TLMP’s “[s]tandards and guidelines that promote deer habitat capability in the matrix and limit road densities, and planned level of timber harvest would have a high likelihood of maintaining viable and well-distributed populations of wolves.” FEIS at B-35.

The 1982 Forest Service planning regulations, which TLMP incorporates, *see* TLMP at 4-89 (WILD1.II.B.), state in relevant part:

Fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area. In order to insure that viable populations will be maintained, habitat must be provided to support, at least, a minimum number of reproductive individuals and that habitat must be well distributed so that those individuals can interact with others in the planning area.

36 C.F.R. § 219.19 (1982). *See also* 36 C.F.R. § 219.27(a)(6) (1982) (extending the “viable populations” mandate to “implementation . . . of forest plans,” e.g. timber sales). This law “requires planning for the entire biological community. . . .” *Seattle Audubon Soc’y v. Moseley*, 798 F. Supp. 1473, 1483 (W.D. Wash. 1992), *aff’d sub nom.*, *Seattle Audubon Soc’y v. Espy*, 998 F.2d 699 (9th Cir. 1993). It establishes the “Forest Service’s duty to protect wildlife” and imposes a “substantive limitation on timber production.” *Seattle Audubon Soc. v. Moseley*, 798 F. Supp. 1484, 1489 (W.D. Wash. 1992), *aff’d sub nom.*, *Seattle Audubon Soc. v. Espy*, 998 F.2d 699 (9th Cir. 1993) (quoting Charles F. Wilkinson & Michael H. Anderson, *Land and Resource Planning in the National Forests*, 64 Or. L. Rev. 1, 296 (1985)).

The requirement to “insure” that forest plans and implementing timber sales maintain viable wildlife populations imposes a stringent obligation on the Forest Service. *See Idaho Sporting Congress v. Rittenhouse*, 305 F.3d 957, 961 (9th Cir. 2002) (“In providing for multiple uses, the forest plan must comply with the substantive requirements of the [NFMA] designed to ensure . . . the continued viability of wildlife in the forest. . . .” (*citing* 16 U.S.C. § 1604(g)(3)(B); 36 C.F.R. § 219.19 (1999))). To comply with this obligation, the Forest Service should “use[] all the scientific

data currently available.” *Inland Empire Pub. Lands Council v. U.S. Forest Service*, 88 F.3d 754, 762 (9th Cir. 1996).

Here, the “most experienced and knowledgeable scientist in the United States with respect to wolves and the wolf-deer predator-prey ecological communities in Southeast Alaska,” Person Statement at ¶12, has concluded that “the Big Thorne [P]roject puts the viability of the wolf population on the Prince of Wales and the surrounding islands (the Prince of Wales Archipelago) in doubt.” *Id.* at ¶13.b.; *see also id.* at ¶13 (“the Big Thorne timber sale, if implemented, represents the final straw that will break the back of a sustainable wolf-deer predator-prey ecological community on Prince of Wales Island, and consequently, the viability of the wolf population on the island may be jeopardized”). Dr. Person explains that “[o]n Prince of Wales Island, more than 50% of the island is already at or approaching levels of logging that will strongly increase the risk that the island will only be capable of supporting wolf packs that function as population sinks.” *Id.* at ¶13.b. As Dr. Person describes:

The cumulative effects of 60 years of clear-cut logging plus the Big Thorne project could result in the ecological collapse of the predator-prey system and result in wolf numbers well below minimum viability both demographically and genetically, which would eventually result in their extirpation or extinction within the Prince of Wales Archipelago.

Id. at ¶13.d.

Dr. Person ultimately concludes that:

Based on the impacts to wolf and deer habitat and populations, described above, Prince of Wales Island, including the Big Thorne project area, is at a tipping point with regard to a viable predator-prey dynamic between wolves and deer. The wolf populations on Prince Wales have been declining precipitously, and wolves are already facing the possibility of extinction on Prince of Wales Island. Big Thorne logging, if it goes forward, will remove the most important remaining deer winter habitat in many of the affected watersheds, which will further reduce the abundance of deer in the project area (especially following severe winters), perhaps for decades to come. As a result, the predator-prey relationship between wolves and deer on Prince of Wales is likely to collapse.

Person Statement, ¶31.

Additionally, losing wolves on Prince of Wales Island or the Prince of Wales Archipelago would also have serious consequence for the wolves' overall numbers and geographic distribution throughout the Tongass. Wolves on the "Prince of Wales Archipelago make[] up a large percentage of wolves in Southeast Alaska, perhaps as much as 30% (Person et al. 1996)." *Id.* at ¶13.d. Additionally, they are "genetically and morphologically distinct" from other wolves in the Tongass. *Id.* They are also physically "isolated from other wolves in the Tongass and, as a result, if wolves on Prince of Wales Island are extirpated or reduced to a small population, rescue or recolonization by dispersing wolves from the mainland is unlikely." *Id.* at ¶33. These considerations lead Dr. Person to conclude that "wolves on the Prince of Wales Island and the Prince of Wales Archipelago are an important part of the overall wolf population in the Tongass." *Id.* at ¶13.d. Thus, these wolves play a unique and important role in the overall Tongass wolf population, contributing almost a third of the population as well as genetic and morphological diversity. Put simply, losing wolves on Prince of Wales Island or the Prince of Wales Archipelago would mean that viable populations of wolves are not well-distributed throughout the Tongass. *See* 36 C.F.R. § 219.19 (1982).

In sum, the Big Thorne ROD and FEIS violate the obligation imposed by NMFA, its regulations and TLMP to "insure" viable wildlife wolf populations that are well distributed throughout the Tongass are maintained.

C. The Big Thorne Project Does Not Satisfy TLMP's Standards and Guidelines for Wolves.

The Forest Service is misapplying TLMP's standards and guidelines with regard to wolves. The Forest Service's approach to the Big Thorne Project is to acknowledge the project area and/or the biogeographical province currently do not meet TLMP standards with regard to wolves (i.e. deer habitat capability and road densities), but rather than taking steps to avoid exacerbating those problems concludes it is free to drive the area even farther out of compliance. As a result, the Forest Service's approval of the Big Thorne Project violated TLMP's standards and guidelines and made a bad situation even worse.

1. *The Big Thorne Project does not meet TLMP's deer habitat capability standards and guidelines for wolves.*

The Forest Service acknowledges that "[t]he analysis for the Big Thorne FEIS showed that both currently and with the selection of any alternative, including the no action alternative, would result in deer habitat capabilities below 18 deer per square mile." FEIS at B-142. According to the Forest Service, "[t]he 18 deer per square mile is what is generally considered to necessary to maintain populations of wolves and deer while providing for sustainable harvest by humans and wolves (Person, et al., 1996)." FEIS at B-142. With the approval of the Big Thorne Project, however, both project area and the biogeographical province fall even farther out compliance. As explained below, this is unlawful.

TLMP requires the Forest Service 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.” TLMP at 4-95 (XIV.A.2). As an initial matter, the Forest Service recognized when it adopted TLMP that there were some places in the Tongass where this would not apply because even prior to the beginning of commercial logging in 1954 it was not possible due to existing natural conditions or because wolves in other areas prey heavily on species other than deer. *See* TLMP FEIS at 3-283; *see also id.* at 3-284 (Table 3.10-9 n.4) (estimating that 69 out of 122 WAAs (57%) were to have had deer habitat capabilities <18 deer per square mile in 1954). But as to those parts of the Tongass where it was possible (i.e., deer are the primary prey of wolves and the natural conditions could provide sufficient deer habitat) TLMP’s standards and guidelines apply to “maintain sustainable wolf populations” TLMP at 4-95 (XIV.A.2), as well as viable and well-distributed populations, *see* FEIS at B-36 (explaining that TLMP’s “[s]tandards and guidelines that promote deer habitat capability in the matrix . . . would have a high likelihood of maintaining viable and well-distributed populations of wolves”).

TLMP establishes that this amount of habitat “is generally considered to equate to the habitat capability to support 18 deer per square mile (using habitat capability model outputs) in biogeographic provinces where deer are the primary prey of wolves.” TLMP at 4-95 (XIV.A.2); *see also* TLMP FEIS at 3-282 (“The Wolf standards and guidelines state that habitat to support of density of 18 deer per square mile is necessary to provide wolves and hunters with adequate foraging/hunting opportunities.”) (emphasis added). TLMP also makes clear that the Forest Service can supplement deer habitat modeling results using “field validation of local deer habitat conditions to assess deer habitat.” TLMP at 4-95 (XIV.A.2). Additionally, “[l]ocal knowledge of habitat conditions, spatial location of habitat, and other factors need to be considered by the biologist” could result in difference localized conclusions regarding the needed habitat capacity. *Id.* “The Wolf guideline is intended to apply to biogeographic provinces where deer are the primary prey of wolves.” TLMP FEIS at 3-283; *see also* FEIS at 3-180 (“the intent of this guideline was to apply to a larger spatial scale (i.e., multiple WAAs or biogeographical province”).

With regard to the deer habitat at the project level, the FEIS explains that Big Thorne, when combined with other logging, will reduce “modeled deer densities to 4.8 to 14.8 deer per square mile at project completion, depending on the WAA.” FEIS at 3-186 (describing that at stem exclusion “deer habitat capability would be reduced by a total of 9 to 20 percent from current conditions”). The Forest Service’s analysis “equates to a cumulative reduction of 11.0 deer per square mile in WAA 1420, 7.8 deer per square mile in WAA 1315, 6.5 deer per square mile in WAA 1319, and 1.1 deer per square mile in WAA 1318 from original (1954) habitat capability (Table WLD-26).” *Id.* These deer habitat losses at the project level are significant and they translate into unlawful declines at the broader spatial scale addressed by TLMP.

The Forest Service admits that at the biogeographic province level, the North Central Prince of Wales Island biogeographic province is not meeting the deer habitat capacity standards and the

Big Thorne Project will further compromise the province's ability to meet these standards. *See* FEIS at 3-181 ("At the biogeographic province scale, deer habitat capability is currently 14.6 deer per square mile, decreasing to 14.4 deer per square mile under all action alternatives at project completion (a reduction of approximately 1 percent) and to between 13.9 to 14.0 deer per square mile at stem exclusion for the action alternatives (a total reduction of 4 to 5 percent; Table WLD-26)."). In response to comments, the FEIS confirms that "[d]eer habitat capability in the biogeographic province as a whole would remain at 15 deer per square mile at project completion, and would be reduced to 14 deer per square mile at stem exclusion' is correct." FEIS at B-144 (quoting the DEIS's analysis of cumulative effects for the no action alternative); *see also* DEIS at 3-174. The FEIS also explains that "[a]cross the North Central Prince of Wales Island biogeographic province existing deer habitat capability would be reduced by 1 percent after project implementation and by 4 percent at stem exclusion (Table WLD-24)." FEIS at 3-177.

The reductions in deer habitat are, of course, even more severe when applied at the level of multiple WAAs. *See, e.g.*, FEIS at 3-181 ("Taking into account only WAAs in the northern portion of Prince of Wales Island, deer habitat capability (currently 13.6 deer per square mile) would decrease to between 13.4 and 13.6 deer per square mile at project completion, and to between 12.9 and 13.1 deer per square mile at stem exclusion, depending on alternative."). Notably, the FEIS explains that: "The DEIS p. 3-177 says 'Thus, regardless of the alternative chosen, all would result in sufficient deer habitat within the biogeographic province and in the WAAs surrounding the project area to maintain a sustainable wolf population.' This statement is incorrect and has been deleted in the FEIS." FEIS at B-144. The FEIS now acknowledges that "[a]ccordingly, there would be some reduction in the ability of [the Big Thorne] project area WAAs to maintain a sustainable wolf population, based on deer habitat capability alone." FEIS at 3-190.

The FEIS apparently justifies these reductions, at least in part, on the fact that "[n]one of the project area WAAs alone provides a habitat capability of 18 deer per square mile, generally considered under the Forest Plan to be sufficient to maintain sustainable wolf populations and taking into account hunting." FEIS at 3-190. It continues by explaining that "the Forest Plan standard and guideline was intended to apply at a broader scale." FEIS at 3-190. The Forest Service's explanations, however, are inconsistent with TLMP's requirements.

The Forest Service apparently interprets TLMP's deer habitat capability standard as allowing the Forest Service to continue to log in areas that affect the capability of a province or a collection of WAAs to meet the 18 deer per square mile metric (even it means if has consequences for the sustainability and/or viability of wolves in the project area and/or the province level). Based on the fact that the deer habitat capability standard only applies "where possible," TLMP at 4-95 (XIV.A.2), the Forest Service appears to argue that is not possible here because the Big Thorne Project area is already below the metric as a result of the past decades of logging. This is not consistent with the requirements of the standard and guidelines or TLMP's overall goals to ensure the viability of well-distributed populations. As explained above,

“where possible” refers to natural conditions that make it impossible to accomplish and/or areas where deer are not the primary prey for wolves, not reductions in habitat caused by logging. The Forest Service’s interpretation, moreover, renders the deer habitat capability standard meaningless; it means logging can continue even those areas that have suffered the worst habitat losses and, as a result, it does not apply in the areas of the Tongass that need it the most.

The Forest Service notes that the TLMP FEIS expected habitat capacity declines as a result of the plan’s implementation. *See* FEIS at B-143 (“In addition, both the 1997 and 2008 Forest Plans disclose that deer density, as measured using habitat capability model outputs, in a number of WAAs may fall below the standard after full implementation of the Forest Plan (Table 3-111, USDA 1997, pp. 3-77 through 3-79 and Table 3.10-9, USDA 2008, pg. 3-284) and that the deer density in some WAAs is naturally low because of poor deer habitat.”). That analysis, that certain WAAs, which “currently meet the wolf guideline, . . . may not meet it in the future after 100+ years of implementation [of TLMP’s logging], are located in the North Central Prince of Wales and Revilla Island/Cleveland Peninsula biogeographic provinces.” TLMP FEIS at 3-284. The TLMP FEIS never contemplated that deer habitat capability across entire biogeographic provinces or groups of WAAs collectively would be reduced to such a level as to make it impossible to support a sustainable population in those larger spatial areas. More specifically, it never acknowledges that the Forest Service expected to see sustainability or even viability concerns across Prince of Wales Island and the Prince of Wales Archipelago. *See* Person Statement at ¶¶ 13, 13.d, 34.

TLMP does say that actual habitat capability in an area may be more or less than the 18 deer per square mile metric depending on local conditions, but there is no analysis to justify that conclusion here. *See* TLMP at 4-95 (XIV.A.2) (explaining that “field validation of local deer habitat conditions [can be used] to assess deer habitat” and “[l]ocal knowledge of habitat conditions, spatial location of habitat, and other factors need to be considered by the biologist rather than solely relying upon model outputs”). Here, the Forest Service does not base its decision to compromise habitat throughout the Big Thorne Project area or the North Central Prince of Wales biogeographic provinces based on field validation, local knowledge of habitat conditions, spatial location of habitat or other biological considerations.⁹ *See, e.g.*, FEIS at B-142—B-143, 3-185—3-187 (describing direct and cumulative effects on deer habitat density and the consequence for wolves). Stated differently, the Forest Service is not justifying a different

⁹ Instead, the Forest Service apparently relied on work that predates TLMP justify its decision to approve logging that drop both the project area and the biogeographic province below the 18 deer per square mile metric. *See* FEIS at B-142-B-143 (describing the Viable Population committee recommendations “that a deer density of at least five deer/mi² be maintained in areas where deer are their primary prey (Suring et al. 1993).”). Whatever those recommendations provided, the Forest Service did not adopt the lower deer density metric into TLMP’s wolf standards and guidelines and they do not describe either contemporary biological conditions or the consequences for meeting the obligation to provide a sustainable and viable wolf population in the province and on Prince of Wales Island as a whole.

deer density in this project area or in the biogeographic province based on biological considerations as TLMP requires and, as a result, the Forest Service's approval of the Big Thorne Project violates TLMP's wolf standards and guidelines.

In sum, the Forest Service's approval of the Big Thorne Project means that both the project area and the biogeographical province will fall even farther below the wolf standards and guidelines regarding deer habitat density, which TLMP established to insure sustainable wolf populations capable of meeting human harvest demand, *see* TLMP at 4-95 (XIV.A.2), as well as viable and well-distributed populations of wolves, *see* TLMP at 4-89 (WILD1.II.B.), 3-62 (WILD1.A). This is unlawful.

2. *The Big Thorne Project does not meet TLMP's road densities standards and guidelines for wolves.*

TLMP also states that a road density of 0.7 to 1.0 mile per square mile or less may be necessary to reduce harvest-related mortality risk where locally unsustainable wolf mortality has been identified. It provides that certain requirements are triggered in areas with "locally unsustainable wolf mortality" that is caused by humans. TLMP at 4-95 (XIV.A.1.c). More specifically, it establishes that:

In these landscapes, both open and total road density should be considered. Total road densities of 0.7 to 1.0 mile per square mile or less may be necessary.

TLMP at 4-95 (XIV.A.1.c). The Forest Service explained in the TLMP FEIS that "[t]his metric [of 0.7 to 1.0 mile per square mile or less] is appropriately applied at the project level to areas that are the approximate size of an average wolf pack territory (about 74,000 acres; Person et al. 1996)." TLMP FEIS at 3-285.

The Forest Service acknowledges in the FEIS that "wolf mortality concerns have already been identified on Prince of Wales Island." FEIS at 3-190; *see also* FEIS at 3-186 ("this is an area where wolf mortality concerns have been identified"); FEIS at 3-116 (FEIS explaining that the Big Thorne "project area WAAs may be at risk of such overharvest (both unsustainable and pack depletion)"). Additionally, the USFWS told the Forest Service during the comment process that it "is concerned that wolf mortality has been excessive across the [Big Thorne] project area and other areas of Prince of Wales Island." PR 736_2241 (USFWS Comment Letter, 3) (citing Person and Logan (2012)); *see also* FEIS at B-143 (FEIS explaining that the State of Alaska believes "there may be vulnerabilities for wolves in the project area").

Yet, the Forest Service acknowledges in the FEIS that road density is predicted to increase across the Big Thorne Project area and will exceed TLMP's standard of 0.7 to 1.0 mile per square mile or less. *See, e.g.*, FEIS at 3-178-79; FEIS at 3-185 ("Total road densities on NFS lands under 1,200 feet elevation would range from 0.8 to 2.6 miles per square mile, depending on the WAA,

under Alternative 3 (Table WLD-25).”). In fact, the FEIS acknowledges that WAAs 1315, 1319, and 1420 already exceed 1.5 mile per square mile. FEIS at 3-179.¹⁰ The FEIS analysis concludes with the acknowledgement that “Alternative 3 would . . . increase human access in the project area, . . . more so than the other alternatives” and that “this is an area where wolf mortality concerns have been identified.” FEIS at 3-186.

TLMP establishes certain road densities that apply in areas where human-caused mortality is determined to be a “significant contributing factor to locally unsustainable wolf mortality.” TLMP at 4-95 (XIV.A.1.c). Like the deer habitat capability metric, TLMP allows for adjustments to the established densities based on local knowledge and biological considerations. *See id.* The Forest Service, however, did not defend its Big Thorne decision based on these considerations.

The Forest Service explains in the FEIS that the “[s]tandards and guidelines that . . . limit road densities . . . would have a high likelihood of maintaining viable and well-distributed populations of wolves.” FEIS at B-35. In an effort to “ensure locally viable wolf populations,” TLMP identifies both plan and project level mechanisms. TLMP at 4-95 (XIV.A.1.c). At the plan level, the Forest Service can work with the State of Alaska and USFWS to “incorporate this information into Travel Management planning and hunting/trapping regulatory planning.” *Id.*

In addition, the TLMP FEIS clarifies that the road density standard applies “at the project level . . .” TLMP FEIS at 3-285. At the project level, the Forest Service is directed to “reduce mortality risk and [consider] a range of options,” including, for example, “establishing road closures.” TLMP at 4-95 (XIV.A.1.c). Indeed, the Forest Service made project level determinations to close certain roads in response to wolf mortality concerns. ROD at 5-6.

¹⁰ The FEIS implies that a road density threshold of 1.5 mi/mi² (0.9 kilometers per square kilometer (km/km²)) might be an appropriate road density for wolves because increasing road densities beyond this level would not result in increases in wolf mortality. *See, e.g.*, FEIS at 3-178, 3-179. The Forest Service relies on research by Person and Russell (2008), but as the USFWS explained in its comments, that research revealed that a “road density [of 1.5 mi/mi²] was associated with highly variable harvest rates, wolf population declines, and probable local extirpations (Person and Russell 2008, 1547).” PR 736_2241 (USFWS Comment Letter at 4); *see also* Person and Russell 2008, which is attached as an exhibit Person Statement (explaining that “total mortality could greatly exceed 38% of the autumn wolf population and be unsustainable at that density of roads”). The USFWS explained that “Person and Russell (2008) found that even [TLMP’s] more protective guideline of 0.7 miles of open roads per square mile (0.43 km per square km) entailed ‘considerable risk of facilitating chronic unsustainable mortality.’” *Id.* (quoting Person and Russell 2008, 1547). The Forest Service cannot depart from TLMP’s substantive and analytical requirements, *see* TLMP at 4-95, but even if it could the FEIS fails to disclose any of this contrary scientific information, which is itself unlawful.

More directly, of course, the Forest Service can stop creating new roads in an area that already fails to meet the requirement. TLMP's road density standard applies to "both open and total road density." TLMP at 4-95 (XIV.A.1.c). As the FEIS explains:

The [Prince of Wales Access Travel Management] project considered the access management objectives for the existing NFS roads for the entire Prince of Wales Island. The Big Thorne Project considers the road management recommendations for the existing [National Forest System] roads and any proposed [National Forest System] roads needed to access timber for the Big Thorne project area, as described in Chapter 3. The Big Thorne Project also analyzes the temporary roads needed for timber access.

FEIS at 1-20 (emphasis added). TLMP's road density standard recognizes that just closing roads might not be enough to protect wolves. The only way for the Forest Service to address "total" road densities is by affecting construction of new roads and that is generally a project level determination. Thus, the road density standard applies both at the planning level and the project level.

In sum, TLMP's wolf "[s]tandards and guidelines . . . limit road densities." FEIS at B-35 (emphasis added). They do so because it is one of the key ways the Forest Service can ensure that the Tongass retains "a high likelihood of maintaining viable and well-distributed populations of wolves." *Id.* Here, the Big Thorne Project does not comply with those standards and, as a result, is unlawful.

In sum, the Forest Service acknowledges its approval of the Big Thorne Project will further prevent both the project area and biogeographical province from meeting TLMP's deer habitat capability standard. Additionally, the Forest Service admits that because of its approval road density will increase across the Big Thorne Project area, with resulting densities that exceed TLMP's requirements. The Forest Service's approval of Big Thorne Project despite these deficiencies violates NFMA and TLMP.

D. If Big Thorne Meets the Requirements of TLMP, Then TLMP Violates NFMA's Requirements to Ensure a Viable, Well-Distributed Population of Wolves in the Tongass.

As result of the Big Thorne Project, in conjunction with the other logging in the area, the Forest Service has not ensured a viable, well-distributed population of wolves on Prince of Wales Island. *See supra* Section III.A.1. Indeed, the wolves on Prince of Wales Island are "facing the possibility of extinction." Person Statement at ¶31. If the Big Thorne Project meets the requirements of TLMP, then TLMP does not comply with NFMA and the requirements of 36 C.F.R. § 219.19 to insure a viable well distributed population of wolves in the Tongass.

According to the Forest Service: “Population viability is addressed at the Forest Plan level to comply with NFMA. The viability of the wolf population has been addressed in the 2008 Forest Plan Amendment FEIS, Volume 1 (p. 3-284 and 3-285) and in the decision for the Amendment (p. 20).” FEIS at B-56. Regarding population abundance, the TLPM FEIS states: “. . . another important purpose of the Tongass Forest Plan is to manage wildlife resources in such a way that, in addition to ensuring that viable populations are sustained, consumptive (hunting) and non-consumptive (wildlife viewing) opportunities are maintained.” TLMP FEIS at 3-253.

As Dr. Person explains in his statement, the Big Thorne Project, when combined with 60 years of clearcut logging, “could result in the ecological collapse of the predator-prey system and result in wolf numbers well below minimum viability both demographically and genetically, which would eventually result in their extirpation or extinction within the Prince of Wales Archipelago.” Person Statement at ¶13.d. Far from ensuring viability, TLMP has resulted in decisions like the Big Thorne Project, which “put[] the viability of the wolf population on the Prince of Wales and the surrounding islands (the Prince of Wales Archipelago) in doubt.” *Id.* at ¶13.b. Simply put:

Prince of Wales Island, including the Big Thorne project area, is at a tipping point with regard to a viable predator-prey dynamic between wolves and deer. The wolf populations on Prince Wales have been declining precipitously, and wolves are already facing the possibility of extinction on Prince of Wales Island. Big Thorne logging, if it goes forward, will remove the most important remaining deer winter habitat in many of the affected watersheds, which will further reduce the abundance of deer in the project area (especially following severe winters), perhaps for decades to come. As a result, the predator-prey relationship between wolves and deer on Prince of Wales is likely to collapse.

Id. at ¶31. As Dr. Person explains the Big Thorne Project results in a substantial risk to wolves and could even result in their extirpation from Prince of Wales Island and the Prince of Wales Archipelago. *See supra* Section III.B. TLMP does not allow the Forest Service to take such a risk. TLMP imposes a stringent obligation on the Forest Service to ensure a viable, well distributed population of wolves is maintained in the Tongass. *See Idaho Sporting Congress*, 305 F.3d at 961.

In sum, as the Big Thorne Project demonstrates, TLMP is resulting in management decisions that do not provide for “the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area.” 36 C.F.R. § 219.19. As a result, TLMP does not comply with NFMA and its implementing regulation.

E. The Forest Service Fails to Respond Adequately to Concerns Regarding the Decision to Log Most of the Last Remaining Areas of Important Deer Habitat in the Big Thorne Project Area.

For the reasons explained above, one of the critical areas of concerns regarding the Big Thorne Project is the degree to which it eliminates significant portions of last remaining old growth winter habitat for deer. During the comment process on the DEIS, USFWS and the State of Alaska Department of Natural Resources (the State) expressed concern that the Forest Service needed to minimize threats to deer habitat given deer habitat capability is already well below the TLMP standards and guidelines across both the project area and the biogeographical province. They identified specific units and types of habitat that should be excluded from the action alternatives to prevent further declines in deer habitat. The Forest Service, however, failed to respond adequately to those concerns and in some cases actually increased harvest in those areas without explanation.

The USFWS and the State identified specific units and types of habitat that the Forest Service should have be excluded or modified in the Big Thorne Project to minimize impacts to deer and their habit. *See supra* Section III.A.3. Despite the wildlife agencies' concerns, however, the Forest Service did not exclude these units from the ROD, and did not confront these concerns in a meaningful way in the FEIS.

Table 2, attached hereto as Exhibit 12, identifies the units of biological concern that USFWS and the State specifically identified and describes the ROD's treatment, as well as the changes, if any, between the DEIS and FEIS. Additionally, Table 3, attached hereto as Exhibit 13, identifies additional units included in the Big Thorne Project that contain areas with these habitat characteristics (e.g., deep snow winter habitat, etc.) and describes the ROD's treatment of those units. As the tables demonstrate, not only did the Forest Service include the overwhelming majority of the units in the Big Thorne Project, it actually increased logging and/or road construction in many instances.

The FEIS's response to these expert concerns fails to address the concerns of the expert agencies. *See, e.g.*, FEIS at B-143 (responding only to the State's concerns). First, the Forest Service explains that "both currently and with the selection of any alternative, including the no action alternative, would result in deer habitat capabilities below 18 deer per square mile." *Id.* at B-142. Second, the Forest Service contends, despite TLMP's standards and guidelines, deer habitat capabilities could drop below 18 deer per square mile and still support a viable wolf population. *See* FEIS at B-142 – B-143. These responses do not address the concerns that the Big Thorne Project logs critical deer habitat.

Neither of these points addresses the concerns raised by USFWS and the State of Alaska regarding the need to minimize the impacts to deer by avoiding the harvest of stands that provide important winter habitat and elevational corridors. The Forest Service acknowledges that the alternatives will have differential impacts on deer habitat and, as a result on wolves.

Yet, the Forest Service never explained why it refused to exclude these important areas from the sale area.

The USFWS and the State of Alaska raised concerns and presented the Forest Service opposing views and scientific opinions regarding the importance of that habitat and the need to exclude it from the Big Thorne sale. The Forest Service failed to respond to or disclose these concerns adequately as required by NEPA, which is intended to ensure that the agency carefully considered the environmental effects of its decisions. *See, e.g., Earth Island Institute v. U.S. Forest Serv.*, 442 F.3d 1147, 1172 (9th Cir. 2006), cert. denied 127 S. Ct. 1829 (2007); *Ctr. for Biological Diversity v. Forest Serv.*, 349 F.3d 1157, 1167-69 (9th Cir. 2003); *Seattle Audubon Soc’y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1993).

In light of NFMA’s obligation, the Forest Service’s failure to respond meaningfully to the scientific controversy raised about important deer winter range violates the Administrative Procedure Act. Likewise, the Forest Service’s failure to reveal adequately the opposing scientific opinion in the FEIS violates NEPA. Appellants ask that the Forest Service to consider and respond to these criticisms and revise its decision accordingly.

F. The FEIS Misleads the Public as to the Precipitous Declines in the Number of Wolves in the Big Thorne Project Area and Prince of Wales Island and the Consequences of the Big Thorne Project on the Wolves’ Viability in the Tongass.

Maintaining a viable wolf-deer-human hunting relationship on Prince of Wales Island and the project area is one of the principle concerns regarding the Big Thorne Project. More so than any other part of the Tongass, north central Prince of Wales has incurred the devastating effects of unsustainable old growth logging. Yet, the FEIS does not confront the reality of the situation for wolves in the Big Thorne area and Prince of Wales Island and the consequences for the wolves throughout the Tongass. As explained above, “the predator-prey relationship between wolves and deer on Prince of Wales is likely to collapse” as a result of the Big Thorne Project. Person Statement at ¶31. The FEIS failed to provide the decision-maker and the public an honest and complete understanding of these effects, which is unlawful.

According to the Forest Service, the Big Thorne Project “may result in local declines in the deer population due to reduced habitat capability which could affect wolves, and thus hunters and trappers.” FEIS at 3-186 (emphasis added). The Forest Service, however, qualifies even this tepid statement, suggesting that commercial thinning projects and the presence of WAAs with higher habitat capability and large, undisturbed blocks of habitat on Prince of Wales Island adjacent to the project area (e.g., the Honker Divide large OGR and Karta Wilderness) could help mitigate the effects. *Id.* As explained below, the FEIS grossly understates the effects to the wolves and the consequences for the overall predator-prey relationship on Prince of Wales Island.

The Forest Service's planning record is replete with concerns regarding the future viability of the predator-prey relationship between wolves and deer on Prince of Wales Island. *See, e.g.*, AR 736_2241A (Ex. 12, Doc. 55 at .pdf 1) ("The Big Thorne timber sale likely will have consequences for the future viability of the watersheds involved to sustain wolves and deer. It also will contribute to the long-term loss of deer hunting opportunities."); *id.* (Ex. 12, Doc. 55 at .pdf 1) ("In particular, the Thorne River and Steelhead Creek watersheds that I highlight in the maps will be severely affected by the sale. There are simply no methods of mitigation that will compensate for that much loss of winter habitat."); *Id.* (Ex. 12, Doc. 55 at .pdf 1) ("Cumulative loss of productive forest habitat in those areas causes me to question the viability of those watersheds to maintain ecological functions and support a healthy predator-prey community. Wolf viability depends not only on reducing road density and risk of unsustainable harvest but also on abundant populations of deer. I doubt that a resilient and persistent wolf-bear-deer-human predator-prey system will be possible within the watersheds affected after the project is completed, if indeed it is still possible as current conditions progress inexorably toward stem exclusion.").

The Person Statement further bolsters these conclusions. *See supra* Section III.A.1. The Big Thorne Project, when combined with the decades of prior logging, could result "in the ecological collapse of the predator-prey system and result in wolf numbers well below minimum viability both demographically and genetically, which would eventually result in their extirpation or extinction within the Prince of Wales Archipelago." Person Statement at ¶13.d.

Here, the FEIS severely misleads the public as to the current state of wolves in the Big Thorne Project area and Prince of Wales Island and the consequences of the Big Thorne Project on those wolves. The Forest Service acknowledges there might be declines or depletion in the number of wolves in the Big Thorne Project area, but the FEIS does not confront the harsh reality of what its approval really means for the area and Prince of Wales as whole. As such, the FEIS violates NEPA.

IV. THE FEIS FAILS TO DISCLOSE THE STATUS OF AND RISKS TO GOSHAWKS IN THE PROJECT AREA, IN VIOLATION OF NEPA.

Neither the FEIS, nor the accompanying Biological Assessment/Biological Evaluation (BA/BE) acknowledges the precarious circumstances of goshawks on Prince of Wales Island. Both documents recognize that Prince of Wales Island is "relatively prey-poor," that goshawks there "have been documented moving great distances to forage," and that "there is a low abundance of goshawks on [Prince of Wales Island]." 736_0418 at 25, 38 (TNF 2013); FEIS at 3-133, 3-230. But they fail to disclose the severity of the situation, and the true magnitude of the risk posed to goshawks by continued old-growth logging on Prince of Wales Island. As explained below, the viability of the entire Southeast Alaska goshawk population is already at risk. On Prince of Wales Island, owing to extremely low prey abundance, disproportionate habitat destruction, huge territories, and low nest productivity, goshawks are in even greater trouble. By not

disclosing these risks, the Forest Service’s environmental documentation omits a factor essential to informed commenting and decision-making, thereby violating NEPA.

A. NEPA Requires Disclosure of Serious Risks to the Viability of the Prince of Wales Island Goshawk Population.

NEPA requires agencies to acknowledge and discuss the risks posed by proposed actions. *See Friends of the Earth v. Hall*, 693 F. Supp. 904, 937 (W.D. Wash. 1988) (“An agency must candidly disclose in its EIS the risks posed by its proposed action. Otherwise the EIS cannot serve its purpose of informing the decisionmaker and the public *before* the decision to proceed is made.” (emphasis in original)). Importantly, agencies must not only identify the risks, but also attempt to quantify them and make plain their significance. *See, e.g., Seattle Audubon Soc. v. Moseley*, 798 F. Supp. 1473, 1483 (W.D. Wash. 1992) (“The FEIS has thus mentioned what appears to be a major consequence of the plan—jeopardy to other species that live in the old growth forests—without explaining the magnitude of the risk or attempting to justify a potential abandonment of conservation duties imposed by law. An EIS devoid of this information does not meet the requirements of NEPA.”); *see also Seattle Audubon Soc. v. Lyons*, 871 F. Supp. 1291, 1318 (W.D. Wash. 1994) (“An EIS must, however, candidly disclose the risks and any scientific uncertainty”).

B. A Multitude of Factors Threatens the Population Viability of Goshawks Throughout Southeast Alaska.

Goshawks in Southeast Alaska are at risk from both natural and anthropogenic factors, described below, that have resulted in extremely large territories and low numbers.

1. *Goshawks in Southeast Alaska are closely associated with higher volume old growth forest stands.*

Goshawks are associated with, and well-adapted to, specific forest environments, and the prey that inhabit them. They “have broad, short wings and a long tail, which enable rapid acceleration and agile maneuverability” PR 736_0341 at 35 (USFWS (2007)). They “hunt by alternating short flights with a period of watching from a perch. Once prey is spotted, an attack is launched from the perch (Squires and Reynolds 1997). This method of hunting relies on cover to conceal the predator’s approach, perches from which to observe and attack, adequate visibility for spotting prey, and adequate space between trees to allow for flying between perches and attacking prey (Reynolds et al. 1992).” *Id.* at 64. Canopy cover also protects goshawks and their nestlings from avian predators such as great horned and barred owls, red-tailed hawks, and bald eagles. *Id.* at 67, 107-08.

Importantly, in Southeast Alaska, goshawks are associated with a very particular forest type: very highly to moderately productive old-growth (250 years old or older). *See* PR 736_0271 at 43 (Iverson et al. (1996)) (finding “a combined 58 percent of all habitat use occurring in these

cover types”).¹¹ Nests are “typically located in tall trees, within high-volume forest stands with relatively high canopy cover.” Exhibit 14 at 8 (The Shipley Group, Soule River Survey (2009)). They spend significantly less time in low productivity forest (about 10 percent), and actively avoid clearcuts, nonforested areas, and, contrary to assertions in the FEIS, also “mature sawtimber” (75- to 150-year old stands). PR 736_0271 at 43 (Iverson et al. (1996)).

2. *Goshawks have perilously large territories in the region.*

In Southeast Alaska, a combination of factors, including low prey abundance, natural fragmentation (by ice fields, muskeg bogs, steep terrain, and scattered islands), and past “highgrading” (disproportionately cutting down higher volume forest stands) has forced goshawks into larger foraging territories than anywhere else in North America. Breeding-season home ranges average 4,500 hectares (11,111 acres) for females, and 5,900 hectares (14,573 acres) for males. Exhibit 16 at 30-31 (Flatten et al. (2001)). One male breeding season use area was radio-tracked at more than 19,000 hectares (47,000 acres). *Id.* By contrast, in the rest of North America, breeding-season ranges average between 570 and 3,500 hectares. PR 736_0341 at 34 (USFWS (2007)). Year-round use areas in Southeast Alaska are vast, averaging more than 15,000 hectares (up to 67,000 hectares) for males, and more than 50,000 hectares (up to 180,000 hectares) for females. Exhibit 16 at 30-31 (Flatten et. al (2001)); *see also* PR 736_0271 at 31-32 (Iverson et al. (1996)) (recording multiple males and females using areas larger than 400,000 ac (162,000 ha)).

As USFWS has noted, the energy expenditure associated with having to seek prey over such enormous areas poses a serious threat to goshawks in Southeast Alaska:

Physiologically, foraging is a trade-off between the energy expended to acquire food and energy derived from its acquisition. The energetic demands of foraging increase with distance traveled. The thresholds for individual survival and for supplying food to nestlings and a brooding mate in this energy balance are unknown, but habitat alteration that decreases foraging efficiency will push individuals and broods toward that threshold.

PR 736_0341 at 66 (USFWS (2007)).

As foraging ranges increase during the breeding season, the likelihood of reproductive success is adversely affected. “Longer travel distances during foraging increase ... the probability that adults may abandon nests”. *Id.* A Forest Service report concluded more than 15 years ago that

¹¹ These authors define “moderate productivity” as forest capable of producing 25.1 million board feet (mmbf)/acre, “high productivity” as producing 31.4 mmbf/acre, and “very high productivity” as capable of producing 39 mmbf/acre. PR 736_0271 at 34 (Iverson et al. (1996)).

“The very large areas used by goshawks in southeast Alaska may lead to high energy expenditure during daily movements. . . . [P]opulations of individuals requiring large ranges may be energetically stressed, have lower reproductive rates, and be less resilient to further stress” PR 736_0271 at 65 (Iverson et al. (1996)). Outside of the breeding season, range expansion is associated with increased risk of death. “Mortality of both male and female adult goshawks in Southeast Alaska was highest in late winter, when food availability is lowest” (and ranges were at their largest). PR 736_0341 at 41 (USFWS (2007)); *see also id.* at 55 (“Most adult mortality in Southeast Alaska and on Vancouver Island occurs in late winter (Titus et al. 2002, McClaren 2003), when prey densities are lowest and snow or other factors may limit prey availability. Dead birds recovered were emaciated or in areas with limited prey, and food stress or starvation was suspected (Titus et al. 2002, McClaren 2003)”).

3. *Tongass Goshawks are a small, isolated, and declining population.*

A second major threat to goshawks in Southeast Alaska, partially related to the phenomena discussed above, is the fact that they comprise a small, genetically potentially isolated, and almost certainly declining population. As USFWS has noted, Queen Charlotte goshawks exist in an inherently precarious status, highly vulnerable to any further stresses. “Given the small populations, low survival or reproductive rates could not be sustained long before viability of the subspecies would be at risk.” PR 736_0341 at 8-9 (USFWS (2007)).

USFWS has estimated that there are only approximately 300 to 400 pairs of goshawks remaining in the region (about the same number as in British Columbia, which USFWS determined to be a distinct population segment and threatened within the meaning of the Endangered Species Act. *See* 77 Fed. Reg. 45870, 45887 (Aug. 1, 2012)); 72 Fed. Reg. 63123, 63,128 (Nov. 8, 2007). USFWS has also determined that the Southeast Alaska population is largely isolated, because it appears to be cut off from both the Queen Charlotte Islands to the south (by open ocean), and the British Columbia mainland to the east (by the Coast Range mountains). *See* 72 Fed. Reg. at 63,129. And the agency has concluded that Tongass birds may be genetically diverse from Canadian specimens as well. *Id.* at 63,129.

In point of fact, the USFWS figure likely overstates the number of reproductive pairs in Southeast Alaska, putting local birds in an even worse position than USFWS reports. USFWS based its population estimate on studies done by Schempf and Woods (2000). 72 Fed. Reg. at 63,127-28; *see also* Exhibit 15 (Schempf and Woods (2000)); Exhibit 16 (Flatten et al. (2001)). Schempf and Woods estimated that the Tongass National Forest contained between 580 and 747 nesting territories. 72 Fed. Reg. at 63,127. Flatten et al. used broadcast and telemetry surveys to determine that, on average, approximately 45 percent of nesting territories are occupied in any given year. 72 Fed. Reg. at 63,127-28. Applying Flatten et al.’s territory occupancy rate to Schempf and Woods’ total territories, the USFWS estimated that, as of 2000, there were approximately 261 to 336 breeding pairs in the Tongass National Forest. 72 Fed. Reg. at 63,127-28. Though it did not explain its methodology, the USFWS then extrapolated this range to estimate that approximately 300 to 400 pairs of goshawks occupied Southeast Alaska. *Id.*

However, much of the area Schempf and Woods categorized as goshawk habitat, very likely would not support breeding birds. They considered hypothetical territories with as little as 20 percent of the land area in old-growth forest as “suitable.” Exhibit 15 at 6 (Schempf and Woods (2000)) (explaining that “[c]ells with less than 20 percent of the land area in old growth forest were excluded,” but cells with more than that were counted). In contrast, both Iverson et al. (1996) and Doyle (2005) concluded that, to be suitable, at least half of a territory probably needs to be covered in old growth forest. *See* PR 736_0271 at 37 (Iverson et al. (1996)); Exhibit 17 at 33 (Doyle (2005)) (“[T]here appears to be a requirement for >41% and more typically >60% of the area to be in mature-old growth forest, before goshawk breeding is detected in a landscape”).¹² The Forest Service appears to accept these conclusions in principle. *See* FEIS at 3-133.

Thus, applying a more realistic habitat parameter would necessarily have led Schempf and Woods to a much lower estimate of the theoretical maximum number of suitable territories, and the USFWS to a much lower estimate of actual breeding pairs. A lower number would also be more consistent with a recent USFWS estimate for breeding pairs in Canada. In discussing its decision to list Queen Charlotte goshawks in British Columbia as threatened, USFWS estimated that, as of 2008, there were about 352 to 374 pairs of goshawks throughout the British Columbia (B.C.) distinct population segment (DPS). 77 Fed. Reg. at 45,887. However, the B.C. DPS inhabits twice as much productive old-growth forest (5.7 million ha) as the Southeast Alaska DPS (2.2 million ha). *See* Exhibit 18 at 7 Table A-9 (USFWS, Updated Appendices to Status Review (2010)). It is not biologically plausible that half as much suitable habitat, in Southeast Alaska, would support as many pairs of the same subspecies as are found in neighboring and ecologically similar B.C. A substantially lower reproductive population would also be more consistent with Crocker-Bedford’s 1994 estimate that there were at the time 100-200 breeding pairs of goshawks in all of Southeast Alaska. Exhibit 19 at 5 (Crocker-Bedford (1994)).

Further, due to continued logging of old growth, the Southeast Alaska population is highly probably getting smaller. The Tongass National Forest reported having logged 6,996 acres between 2007 and 2012. *See* PR 736_2265 at 8 (USFWS (2013)). And in addition to federal logging, habitat liquidation on other holdings has been considerable. *See, e.g.*, PR 736_0341 at 81 (USFWS (2007)) (“Intensive clearcutting on large areas of corporation land [in Southeast Alaska] has converted many watersheds to very low quality habitat, or non-habitat, for goshawks. Loss of this habitat has likely contributed to at least local declines in goshawk population”). Compounding this problem, even if all old growth logging in all of Southeast Alaska stopped today, the goshawk population would probably still continue to decline. As USFWS has explained, “goshawk populations may continue to decline for several years after timber harvest of old growth forests has ceased and timber harvest is restricted to second-growth stands because it is likely to take several generations for the populations to equilibrate with their modified environments.” 72 Fed. Reg. at 63,136.

¹² Doyle defined “mature” forest as 81-250 years old, and “old” forest as more than 250 years old. Exhibit 17 at 7 (Doyle (2005)).

C. Goshawks on Prince of Wales Island Are More Vulnerable Than Elsewhere in the Tongass, Because of Natural Lack of Prey, Intensive Logging, Huge Territories, and Low Productivity.

1. *Prince of Wales Island lacks important prey species.*

For a number of reasons, goshawks on Prince of Wales Island are more stressed, more sensitive, and more vulnerable to continued cutting of old-growth forest than goshawks anywhere else in Southeast Alaska. Even without logging impacts, Prince of Wales Island and surrounding islands naturally lack important prey species. Red squirrels, which are significant prey for goshawks elsewhere in Southeast Alaska, are absent. PR 736_0271 at 59 (Iverson (1996)); FEIS at 3-133. There is a species of flying squirrel in the area, but it is nocturnal, and essentially unavailable to goshawks (particularly during critical winter months). PR 736_0341 at 39 (USFWS (2007)). Moreover, the long-term viability of flying squirrels themselves is in doubt on Prince of Wales Island, because small habitat reserves are too small to sustain their populations in the absence of immigration, and the species' ability to disperse adequately across intervening spaces, whether naturally unforested or logged, is in doubt. *See* PR 736_2241a at 631-33 (Smith and Person (2007)); *see also* PR 736_0252 at 87 (Flaherty et al (2010)) ("Our results suggest low availability of potentially critical food items in managed habitats, which may constrain dispersal of [flying squirrels on Prince of Wales Island]"). Mammalian prey is so scarce on Prince of Wales Island and surrounding islands that one study documented "99 percent of the biomass delivered [to nests] was avian, as compared to northern Southeast Alaska, where mammals accounted for 26 percent of prey biomass." *Id.* at 39. This becomes a particularly serious problem in the winter, when "many avian prey species migrate from the region, [further] reducing the variety and abundance of prey available." *Id.* at 6.

Prince of Wales Island and the surrounding islands also lack sooty (blue) grouse, another key food source for goshawks elsewhere in Southeast Alaska. PR 736_0271 at 59 (Iverson et al. (1996)); PR 736_0341 at 39 (FWS (2007)). Although spruce grouse inhabit the area, they are only about half the size of sooty grouse. PR 736_0341 at 39 (FWS (2007)). Further, logging has reduced the availability of spruce grouse to goshawks, because spruce grouse avoid clearcuts, instead inhabiting 15- to 35-year-old second growth, *id.* at 63, where goshawks are at a distinct disadvantage because of the density of the tree stems, which "interfere with flight lines and decrease hunting success." *Id.* at 36. As a result, "[r]esearchers have identified food stress as a limitation for goshawks on Prince of Wales Island and surrounding islands in southern Southeast Alaska . . ." 72 Fed. Reg. at 63136. For example, "[m]ost females that died [of starvation] during Flatten et al.'s (2002) study were from the Prince of Wales area, which lacks red squirrels, hares and sooty grouse to support goshawks during winter (Titus et al. 2002)." PR 736_0341 at 41 (USFWS (2007)).

2. *Aggressive Logging has disproportionately impacted Prince of Wales Island.*

Goshawks are also particularly at risk on Prince of Wales Island, because its forests have been disproportionately targeted by the timber industry:

Timber harvest has not been evenly distributed across the Tongass NF. There are 21 biogeographic provinces within the Tongass NF (USDA Forest Service 1996a), and several have had little or no harvest (e.g., Admiralty Island and the mainland provinces). Other provinces have had substantial timber harvest activity (e.g., northeast Chichagof and Prince of Wales Islands).

PR 736_0271 at 7 (Iverson et al. (1996)); *see also* TLMP FEIS at 3-201 (indicating that North Central Prince of Wales Island has been logged far more heavily than any other Biogeographic Province); 72 Fed. Reg. at 63131 (“Corporate lands, which cover only 3 percent of the total area of Southeast Alaska but include 7 percent of the region’s 6.4 million ac (2.6 million ha) of productive forest, are distributed throughout Southeast Alaska, with concentrations on and near Prince of Wales Island . . .”).

Already by 1995, more than 20 percent of the old growth forest of northern Prince of Wales Island had been harvested by 1995. PR 736_0271 at 74, Table 26 (Iverson et al. (1996)). This percentage was almost twice as high as the next most-harvested biogeographic provinces. *Id.* For context, Iverson et al. (1996) concluded that “[h]arvest rates exceeding 13 percent [by 1995] . . . represent[ed] increased risk to long-term goshawk persistence.” *Id.*

Subsequent logging on both federal and non-federal lands has substantially worsened the situation. In 2012, the USFWS reported that:

Threats to the Queen Charlotte goshawk in Southeast Alaska are greatest on Prince of Wales Island and the surrounding smaller islands at the southern end of the DPS. Timber harvest on both the Tongass National Forest and native corporation lands has been intensive in some parts of this area. Approximately 26 percent of the productive forest on Prince of Wales and the surrounding islands has been harvested, including some of the most productive forest lands in Southeast Alaska (Albert and Schoen 2006, pp. 15-18).

72 Fed. Reg. at 63,136.

3. *Goshawks maintain larger territories and experience lower productivity on Prince of Wales Island than anywhere else in Southeast Alaska.*

The loss of habitat and lower prey abundance on Prince of Wales Island (and nearby islands) have had a serious adverse impact on territory size and nesting productivity. USFWS reports that goshawks on Prince of Wales Island experience “comparatively low goshawk nesting densities and lower reproductive success than elsewhere in the DPS.” 72 Fed. Reg. at 63,136-37. Similarly, Iverson et al. (1996) noted that goshawk territories on Prince of Wales Island are larger than elsewhere in Southeast Alaska. PR 736_0271 at 68 (Iverson et al. (1996)). Indeed, the very large individual home ranges mentioned above are from Prince of Wales Island.

Loss of habitat, in particular, affects goshawk densities (i.e., territory sizes) and reproductive success through several mechanisms:

Several factors may contribute to decreased productivity and density in goshawk populations following particular changes in forest structure and composition: (1) increased predation on adults and young goshawks as hiding cover is reduced and potential predator populations increase (e.g., great horned owls); (2) loss of cool thermal conditions at nest sites; (3) reduced prey abundance or availability, or both; (4) increased competition as predators that adapt to more open forest become abundant; and (5) increased disturbance and human-caused mortality due to increased access from the timber harvest road network.

Id. at 21.

D. The FEIS Does Not Disclose the Precarious State of and Serious Risks to the Viability of the Prince of Wales Island Goshawks Population.

The FEIS wholly fails to disclose these serious risks to goshawks in the project vicinity, either the pre-existing risks or the way in which the selected alternative would aggravate them, in any fashion that would alert the public or decisionmakers to them. It blandly asserts that goshawks “consume a wide variety of prey species and are capable of alternating between prey species.” FEIS at 3-133. It acknowledges that Prince of Wales Island is “a relatively prey-poor area compared to the rest of Southeast Alaska,” but attributes that only to the absence of two prey species. *Id.* Rather than (i) identifying the severe prey stress the birds are under on the island, (ii) discussing how logging contributes to that risk, or (iii) acknowledging that lack of prey leads to dangerously large home ranges, the FEIS instead hurries on to say “Goshawks on Prince of Wales Island have been documented moving great distances to forage,” *id.*, mistakenly implying that they have the ability to offset prey scarcity by foraging widely, without adverse impact. Similarly, in its effects analysis, the FEIS says simply that Alternative 3, on which the selected alternative is based, may cause goshawks to “increase their breeding home range size.”

Id. at 3-230. Nothing in the FEIS discloses that in fact the wide foraging is itself a risk factor, and one that distinguishes Prince of Wales Island goshawks as particularly imperiled, even compared to their rare conspecifics elsewhere in the Tongass.

Nor does the FEIS at any point acknowledge that additional logging in the project area could produce gaps in goshawk distribution as a result of nest abandonment or outright mortality. Astonishingly, it asserts that “none of the alternatives would directly impact known actively nesting birds,” *id.* at 3-230, as though failure to find birds where they used to exist counted in the project’s favor. It concedes that logging could result in portions of the landscape becoming unsuitable for goshawks, but asserts that, anyway, “there is a low abundance of goshawks on [Prince of Wales Island] *due to the lack of prey.*” *Id.* (emphasis supplied). Similarly, it allows that “harvest *may* also decrease foraging habitat quality” and obliquely says that “availability of adequate prey resources has been linked to goshawk territory occupancy and breeding success.” *Id.* at 3-133 (emphasis supplied). It also says, in an impressive understatement, that Alternative 3 “could result in a reduction in the density of goshawks in the project area VCU’s.” *Id.* at 3-237.

In point of fact, the proposed logging will, definitely, degrade goshawk foraging habitat. All known previously active nests in areas of Prince of Wales Island that were heavily logged have apparently been abandoned, *id.* at 3-135. And further reductions in habitat could plausibly extirpate goshawks from portions of their existing range.

Moreover, goshawks from Prince of Wales Island and surrounding islands may provide distinct genetic representation that plays a role in the fitness of the entire Southeast Alaska population. *See* 72 Fed. Reg. at 63,137 (citing Titus et al. (1994) at 10-12). Nowhere, though, does the FEIS disclose what USFWS concluded, that these birds constitute a significant portion of the Alaska population and that “loss of the goshawk population on Prince of Wales and the surrounding smaller islands would ... compromise conservation of the subspecies in the Southeast Alaska DPS.” *Id.*

Instead, the FEIS repeatedly and misleadingly points to TLMP standards and guidelines, and the existence of second growth in the project area, as reliably mitigating logging impacts to goshawks. It calls the “legacy forest structure” standard a conservation measure for goshawk, *see* FEIS at 3-133, and argues that it would “maintain some habitat value for goshawks,” *id.* at 3-230, but cites only a 1994 study discussing goshawk perching trees in mesic forests of northern California. In short, the FEIS adduces no evidence that the standard preserves habitat for Queen Charlotte goshawks.

Similarly misleadingly, the FEIS counts as suitable goshawk habitat “mature young growth,” defined as “stands 50 years or older,” and measures whether the landscape will support goshawks by whether 50 percent of it is covered by this young forest and/or old-growth. *See id.* at 3-133; *see also id.* at 3-237 (arguing that Alternative 3 would “continue to provide marginal goshawk foraging and nesting habitat” because it would maintain 44 percent of the project area

in that hybrid category). Again, the FEIS has no authority for its mitigation claim. Instead, it asserts that 50 years is an appropriate indicator because “this is the minimum age at which suitable structure for nesting goshawks may be achieved.” *Id.* at 3-133. However, whether nesting structure could occur in the second growth portion of a landscape is irrelevant to whether second growth provides critical foraging habitat. Indeed, it is essentially irrelevant to whether the landscape provides nesting habitat, unless it is so lacking in old growth that goshawks would have to nest in second growth or not at all. Moreover, 50 years is not even a threshold at which second growth can be relied on to provide nesting habitat, but only the first age at which it could conceivably do so. Equally fatal to the FEIS’s effort to characterize this young growth as providing meaningful habitat, the research shows that goshawks in Southeast Alaska avoid even much older second growth, 75 to 150 year old stands of sawtimber, in favor of medium and high volume old growth. *See* PR 736_0271 at 36 (Iverson et al. (1996)).

In conclusion, the FEIS conveys a wholly misleading picture of the risks that goshawks already face in the project area, the additive risks that logging poses to local birds, and the broader potential consequences, not only of extirpation from northern Prince of Wales Island but also of undermining the viability of the Tongass-wide distinct population segment. NEPA does not permit the risks and impacts to be so ignored and mischaracterized.

V. THE FOREST SERVICE VIOLATED NEPA WHEN IT FAILED TO EITHER OBTAIN MISSING INFORMATION REGARDING GOSHAWKS AND WOLVES NEEDED TO ASSESS THE IMPACTS OF THE BIG THORNE PROJECT, OR JUSTIFY A CONCLUSION THAT IT COULD NOT OBTAIN SUCH INFORMATION.

The Forest Service acknowledges in the FEIS that it lacks certain critical information regarding goshawks and wolves. The Forest Service, however, failed to comply with NEPA’s requirements regarding that missing information. Rather than proceed in an uninformed fashion, NEPA requires the Forest Service to obtain the missing information or to justify its omission, discuss in the FEIS its importance to the decision-making, and supply what evidence and analysis it can. For the reasons explained below, the Forest Service did not satisfy these obligations.

“[T]he very purpose of NEPA’s requirement that an EIS be prepared for all actions that may significantly affect the environment is to obviate the need for [] speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action.” *Found. for N. Am. Wild Sheep v. U.S. Dep’t of Agric.*, 681 F.2d 1172, 1179 (9th Cir. 1982). The starting point of any analysis of an activity’s impacts under NEPA is the collection and description of baseline data about the environment in which the activity is to occur, because, “[w]ithout establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA.” *Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988); *see also Am. Rivers v. F.E.R.C.*, 201 F.3d 1186, 1195 n.15 (9th Cir. 2000); *Ctr. for Biological Diversity v.*

Bureau of Land Mgmt., 422 F. Supp. 2d 1115, 1163 (N.D. Cal. 2006) (baseline is the “heart of the EIS” and must “be accurate and complete”).

The Council for Environmental Quality’s regulations establish an agency’s obligations when preparing an EIS in the face of incomplete or unavailable information. *See Montana Wilderness Ass’n v. McAllister*, 666 F.3d 549, 559-561 (9th Cir. 2011). Those regulations require agencies when “evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement” to determine whether missing information “relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives.” 40 C.F.R. § 1502.22. “As long as the information is ‘important,’ ‘significant,’ or ‘essential,’ it must be provided when the costs are not exorbitant in light of the size of the project and/or the possible harm to the environment.” *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1244 n.5 (9th Cir. 1984). If the costs are exorbitant (or the means of obtaining the information are unknown), then the EIS must still (1) state that the information is missing, (2) discuss its relevance, (3) summarize the existing relevant credible scientific evidence, and (4) evaluate the reasonably foreseeable significant adverse impacts based on generally accepted theoretical approaches or research methods. 40 C.F.R. § 1502.22(b).

By stating the obligation to develop missing information in terms of what is “essential to a reasoned choice among alternatives,” 40 C.F.R. § 1502.22(a), the NEPA regulations link the requirement to the alternatives analysis that is the “heart of the environmental impact statement.” 40 C.F.R. § 1502.14. *See also* 51 Fed. Reg. 15,618, 15,621 (Apr. 25, 1986) (Section 1502.22 furthers NEPA policy goals). Thus, the determination of what information Section 1502.22 requires agencies to obtain—what is “essential”—necessarily turns on the information needed to meet NEPA’s requirement that an agency formulate and examine reasonable alternatives to a proposal that would lessen its impacts.

There are two key components to NEPA’s alternatives requirement that together define “essential” information. First, NEPA requires an EIS to “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public” and to “[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.” 40 C.F.R. § 1502.14. Information is “essential” consistent with this mandate, therefore, if it is necessary to allow an EIS to “make an informed comparison of the alternatives.” *Se. Alaska Conservation Council v. Fed. Highway Admin.*, 649 F.3d 1050, 1058 (9th Cir. 2011) (quotation marks and citation omitted).

Second, NEPA requires an agency to develop alternatives to its projects that would minimize environmental impacts. 40 C.F.R. § 1502.1 (an EIS must “inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.”). *See Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 965 (9th Cir. 2005) (remanding decision to agency where lack of accurate information rendered an EIS unable to “inform[] decisionmakers and the public of the reasonable

alternatives which would avoid or minimize adverse impacts”) (internal quotation marks and citations omitted); *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 809-10 (9th Cir. 1999) (an EIS must analyze “effects of the actions in sufficient detail to be ‘useful to the decisionmaker in deciding whether, or how, to alter the program to lessen cumulative impacts.’”) (quoting *City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1160 (9th Cir. 1997)). Thus, information is also “essential” if it is necessary to develop alternatives that minimize impacts.

A. The FEIS Lacks Essential Information Regarding Goshawk Populations and Trends and Fails to Comply With NEPA’s Obligations Regarding Missing Information.

The FEIS violates NEPA because it is missing information about goshawk populations that is essential to a reasoned choice among alternatives. Lacking the information, the FEIS also fails to show that obtaining it would necessarily entail exorbitant costs or unknown methods. Nor does the FEIS include the analysis and disclosure that NEPA requires in cases where the information cannot be developed on either financial or methodological grounds.

The FEIS lacks essential information about goshawks. Its description of the Affected Environment is devoid of any information about the actual population status of goshawks in the project area, in northern Prince of Wales, or in the region, apart from a bare observation that the subspecies “is of special concern to the State of Alaska . . . and has been included . . . on Audubon’s Alaska WatchList.” FEIS at 3-132. There are no data about, nor any qualitative description of, the size of the population or of any segment of it. There is nothing about population trends. There is nothing from which a reader could reach a reasoned conclusion about the current viability of the subspecies, other than a mention that USFWS declined to list the Southeast Alaska population in 2007. *Id.* The Effects section of the FEIS adds almost nothing to this extreme vacuum, noting simply that “there is a low abundance of goshawks on [Prince of Wales Island] due to the lack of prey.” *Id.* at 3-230. In short, while the FEIS reports differential impacts from the developed alternatives, and concedes that Alternative 3 “would result in the greatest reduction in potential goshawk habitat,” *id.* at 3-237, there is nothing from which to judge whether that difference among alternatives has any environmental significance at all.

The missing information is essential to a reasoned choice among alternatives. As discussed above, Queen Charlotte goshawk numbers in Southeast Alaska may well be low enough to call its population viability into question. Though the FEIS obscures this point, the wholesale loss of prime goshawk habitat entailed by the largest timber project planned by the Tongass National Forest in nearly 20 years would necessarily adversely affect goshawks that utilize the project area (whether they nest there or not). Without knowing more about the size and trends of the POW population of goshawks, neither the public nor decisionmakers can understand what is at stake in the choice of which alternative to pursue. If a substantial portion of the local population uses the project area and already is experiencing reproductive failure or other

decline, Alternative 3 could trigger a gap in the subspecies' range or even take the entire Southeast Alaska population below self-sustaining levels. Thus, because the Forest Service is obligated to maintain a well-distributed and viable population of goshawks across the Tongass, the information in question is essential not merely to a reasoned choice but to a lawful one.

More broadly, depending on the size of and trends in the goshawk population around POW, significant additional habitat loss could push it across a threshold leading to listing of all goshawks in the region, under the federal ESA. As discussed above, USFWS has determined that goshawks in Southeast Alaska constitute a distinct population segment, *see* 72 Fed. Reg. 63,129, a taxon listable as threatened or endangered provided it meets ESA criteria for those statuses. *See* 16 U.S.C. § 1532(16) ("species" includes "any distinct population segment"). USFWS has also concluded "that Prince of Wales Island and the surrounding islands constitute a significant portion of the Alaska DPS's range." 72 Fed. Reg. 63,137. Because a federally "threatened species" is "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range," 16 U.S.C. § 1532(20), and the Prince of Wales Island area harbors a significant portion of a DPS, threats to the continued presence of goshawks there could lead to listing of all such birds throughout Southeast Alaska. No rational decisionmaker would knowingly undertake an action that precipitated such an outcome, even if his or her sole concern were the well-being of the local timber industry. The missing information is thus, on this score as well, essential to a reasoned choice among alternatives.

Nothing in the FEIS shows that the missing information "cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known." 40 C.F.R. § 1502.22(b). Nor is it plausible that the Forest Service could meet this standard. While goshawks are elusive and widely spread in Southeast Alaska, to excuse the complete absence of population data, the agency would have to show that it was beyond its means to design and employ a random sampling methodology robust enough to yield statistically significant information, either Tongass-wide or on Prince of Wales Island.

Moreover, even if the information could not be obtained, the FEIS would still have to comply with a set of NEPA disclosure requirements, none of which it has met here. The FEIS includes no acknowledgement that "such information is incomplete or unavailable." 40 C.F.R. § 1502.22(b)(1). There is no discussion whatsoever "of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts." 40 C.F.R. § 1502.22(b)(2). The FEIS has no "summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts" of the logging on plausibly distressed goshawk populations – either local or regional. 40 C.F.R. § 1502.22(b)(3). Nor does the FEIS include "the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(b)(4). Instead, silence prevails. That promotes exactly the head-in-the-sand decision-making NEPA was enacted to make illegal and bring to an end.

The BA/BE for the Big Thorne Project contains marginally more information than the FEIS, but does not bring the Forest Service into compliance with NEPA. It observes that there is a “lack of information regarding goshawk population trends,” and links that to high concerns about the species’ viability in the region. PR 736_0418 at 24 (TNF 2013). If NEPA allowed such disclosures to be relegated to documents supporting an EIS, that would arguably fulfill 40 C.F.R. § 1502.22(b)(1). NEPA does not, however, permit such obfuscation. And at all events, nothing in the BA/BE shows that the information cannot be obtained, nor meets the requirements of 40 C.F.R. § 1502.22(b)(2)-(4) for omitting it.

B. The FEIS Acknowledges a Lack of Information Regarding the Current Wolf Population Both in the Big Thorne Project Area and Prince of Wales Island But Does Not Comply With NEPA’s Obligations to Address Missing Information.

According to the FEIS, the Forest Service does not know the current population of the wolf in the Big Thorne Project area or the population on Prince of Wales and the surrounding islands as a whole. The FEIS acknowledges:

Current estimates of the wolf population in GMU2 are lacking; however, approximately 250-350 wolves were estimated to inhabit Prince of Wales Island and the surrounding islands (Person et al. 1996). However, the population on Prince of Wales Island may be lower than in previous years based on the lack of scats observed during 2009 and 2010 field effort (e.g., 30-35 scats collected versus 154 collected during a 1993-1994 effort; Person 2010, Kohira 1995). That observation was consistent with testimony from local trappers during the 2010 Alaska Board of Game meeting in Ketchikan (Logan, USDA Forest Service, personal comm. 2012). The Tongass National Forest is currently partnering with ADF&G to establish protocols for estimating and monitoring wolf population status and trends in GMU2.

FEIS at 3-113–3-114.

Here, the Forest Service acknowledges “[c]urrent estimates of the wolf population in this area are lacking” and, as a result, it is relying on anecdotal evidence and outdated population estimate from 1996 to describe Big Thorne’s effects on wolves. *Id.* The Forest Service also acknowledges in the FEIS that it is possible to obtain a wolf population estimate. *See, e.g.*, FEIS at 3-117 (“The Forest Service and the State of Alaska are currently working to obtain more accurate wolf population estimates.”). Finally, it also acknowledges that the action alternatives will have different impacts on wolves. *See, e.g.*, FEIS at 3-182 (“Alternative 1 would have no direct effect to wolves because no timber would be harvested and no roads would be constructed.”); *id.* at 3-184 (“Alternative 2 has the potential to result in a local reduction in the wolf prey base and thus in the wolf density.”); *id.* at 3-184 (“Alternative 2 would only locally

increase human access in the project area; however, this is an area where wolf mortality concerns have been identified.”); *id.* at 3-187 (“Effects to modeled deer densities, and thus the wolf prey base, under Alternative 4 would be the least among the alternatives”).

The FEIS describes various ways the wolf population on Prince of Wales Island might be affected by the Big Thorne Project as result of losses in deer habit. *See, e.g.*, FEIS at 3-185 (“Thus, Alternative 2 may result in local declines in the deer population due to reduced habitat capability which could affect wolves, and thus hunters and trappers”); *id.* at 3-185 (“Long-term reductions in deer habitat capability (at the stem exclusion stage) from existing (2013) amounts under Alternative 3 would be the greatest in WAA 1420 (20 percent), followed by WAAs 1315 (14 percent), 1319 (10 percent), and 1318 (9 percent). This equates to a total reduction of 1.3 to 2.3 deer per square mile from existing (2013) levels depending on the WAA (Table WLD-24). . . . Alternative 3 has the potential to result in a local reduction in the wolf prey base and thus potentially in the wolf density”); *id.* at 3-186 (“OGR modifications proposed under Alternative 3 would maintain or reduce inclusion of habitat suitable for wolf dens sites and other areas identified by the interagency review team (IRT) as being important to wolves.”); *id.* at 3-186 (“Future timber harvest and road building in these [OGR modified] areas would have the potential to reduce the ability of wolves to move and disperse or increase the risk of harvest.”); *id.* at 3-181 (“there remain substantial areas (including the project area WAAs) with lower quality habitat that, on their own, would not be able to support a local population (i.e., population sinks). In these areas, local population persistence would continue to rely on dispersal of wolves from surrounding areas (source populations).”).

The FEIS also describes varying ways deer habitat, including winter habitat, will be lost as a result of the Big Thorne Project. *See, e.g.*, FEIS at 3-170 (“Alternative 1 would have no direct effects to deer habitat capability or to average snow, deep snow, or non-winter habitat”); *id.* at 3-171 (“Alternative 2 would result in an immediate reduction in deer habitat capability by WAA ranging from 4 to 5 percent from current conditions, the second highest among the alternatives[.]”); *id.* at 3-172 (“Alternative 3 would result in an immediate reduction in deer habitat capability by WAA ranging from 5 to 9 percent from current conditions, the most among the alternatives[.]”); *id.* at 3-173 (“Alternative 4 was designed in part to minimize impacts to deer such as by harvesting less winter habitat, and maintaining more travel corridors.”); *id.* at 3-174 (“Alternative 5 would result in an immediate reduction in deer habitat capability by WAA ranging from 4 to 5 percent from current conditions[.]”); *id.* at 3-171 (“Alternative 2 would result in the harvest of approximately 1,537 total acres of deep snow winter habitat (3 to 7 percent reduction from current conditions by WAA), 4,787 total acres of average snow winter habitat (3 to 6 percent reduction from current conditions by WAA)”; *id.* at 3-172 (“Alternative 3 would result in the harvest of approximately 2,358 total acres of deep snow winter habitat (6 to 13 percent reduction from current conditions by WAA), 6,706 total acres of average snow winter habitat (3 to 9 percent reduction from current conditions by WAA)”; *id.* at 3-173 (“Alternative 4 would result in the harvest of approximately 1,319 total acres of deep snow winter habitat (2 to 6 percent reduction from current conditions by WAA), 4,421 total acres of average snow winter habitat (2 to 5 percent reduction from current conditions by WAA)”; *id.* at 3-174 (“Alternative 5

would result in the harvest of approximately 1,613 total acres of deep snow winter habitat (3 to 7 percent reduction from current conditions by WAA), 5,085 total acres of average snow winter habitat (3 to 6 percent reduction from current conditions by WAA)"). As explained above, and in the Person Statement, ¶¶21-23, 31, continued losses in habitat capability directly affects wolf viability. *See, e.g.*, FEIS at 3-165 ("[d]eclines in the deer population resulting from reduced [deer] habitat capability may decrease the availability of deer to wolves and hunters (Person 2001; Farmer et al. 2006; Brinkman et al. 2009)"). Thus, differences between the alternatives will result in different effects on deer and deer habitat and, as result, will affect wolves in different ways.

The problem with the Forest Service's failure to confront this missing information is twofold. First, the Forest Service does not have an accurate baseline of the wolf population, making it impossible to assess the effects of Big Thorne Project on the wolves. *See Half Moon Bay*, 857 F.2d at 510 ("without establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA"). Stated differently, what the Forest Service hopes will be only localized reductions in wolves as a result of the Big Thorne Project might actually be extirpation from the Big Thorne Project area, Prince of Wales Island, and possibly the Prince of Wales Archipelago. *See* Person Statement, ¶¶ 13.d, 31. It is impossible to know because the Forest Service never answered the questions. Here, the precipitous declines in the wolf population, *see supra* Section III.A.1, mean that the Forest Service needs to have an accurate picture of the wolf population in the Big Thorne Project area and Prince of Wales to prevent exacerbating those declines or even extirpation.

Second, the Forest Service's analysis is constrained because it lacks information that is essential to designing alternatives that can minimize the effects to wolves. Without an accurate wolf population estimate, the Forest Service is flying blind. If it had obtained an accurate population estimate both of the Big Thorne Project area and Prince of Wales Island as a whole, then it could have designed alternatives to address wolf concerns. As it stands, the FEIS acknowledges, for example, that will be "substantial areas (including the project area WAAs) with lower quality habitat that, on their own, would not be able to support a local population (i.e., population sinks)" FEIS at 3-185, but the Forest Service lacks the information to formulate alternatives that could minimize those concerns.

The FEIS acknowledges the Forest Service lacks current information regarding the number of wolves in the Big Thorne Project area as well as Prince of Wales Island. Yet, the Forest Service failed to comply with the requirements of 40 C.F.R. § 1502.22 to address this missing information and inform its decision-making regarding the effects of, and alternatives to, the Big Thorne Project. As a result, the Forest Service violated NEPA.

VI. THE SELECTED ALTERNATIVE DOES NOT ENSURE THE POPULATION VIABILITY OF GOSHAWKS.

As for wolves and all other native vertebrates, the Forest Service is obligated to ensure the viability of goshawks on the Tongass National Forest. The viability standard incorporated into TLMP requires that populations be “well-distributed in the planning area (i.e. the Tongass National Forest).” TLMP at 4-89 (II.B). As such, it functions to prohibit local extirpation of goshawks, as well as their outright loss from the entire region.

Substantial doubt exists about the status and fate of goshawks in and around the Tongass. As the BA/BE for the Big Thorne Project concedes, “concern for the species’ viability in southeast Alaska remains high due to lack of information regarding goshawk population trends as well as reductions in the amount of old-growth forest due to timber harvest.” PR 736_0373 at 24 (TNF (2013)). Queen Charlotte goshawks depend on high and medium volume old growth that has been substantially liquidated in the region. *See* PR 736_271 at 37 (Iverson et al. (1996)) (finding “a strong pattern for selection of very high to moderately productive old-growth forest”); *see also* TLMP FEIS at H-139 (logging disproportionately focused on low elevation large tree forest). Habitat loss has been particularly great in and around POW, where 26% of productive old growth had been logged by 2006. 72 Fed. Reg. at 63136. In North Central POW, the vicinity of the Big Thorne project, habitat loss is of even greater concern, with the Forest Service projecting that full TLMP implementation will see 49% of all productive old growth logged, and 59% of all high volume old growth. FEIS at 3-144. In the project area itself, implementation of Alternative 3 immediately produces a landscape missing 37% of all old growth and 46% of its original high volume. *Id.* These numbers likely disguise additional habitat degradation caused by logging’s fragmentation of large forest blocks into smaller ones. *See* 736_2241a (Greenpeace Submissions, Scoping Comments) (Powell et al. (1997) at 2) (“human-caused fragmentation of blocks, or patches, of wildlife habitat into smaller blocks threatens the persistence of species in, and often beyond, the fragmented area”); PR 736_0271 at 39-40 (Iverson et al. (1996)) (authors unable to determine if Queen Charlotte goshawks avoid forest edge environments, but State of Alaska biologists found that the birds selected the interior of old growth blocks over forest near clearcuts).

If it wants to reduce goshawk habitat further, the Forest Service can only ensure the viability (including distribution) of this at-risk species in the Tongass in one of two ways. It must either demonstrate that the size and trend of the bird’s population provide a sufficient margin of safety, so that impacts from habitat loss cannot plausibly put viability at risk. Or, absent reliable population data, it may use habitat as a proxy, if it has a sound evidentiary basis for calculating how much habitat will ensure a viable, well-distributed population and maintains that much. *See, e.g., The Lands Council v. McNair*, 537 F.3d 981, 997-98 (9th Cir. 2008) (en banc) (“when the Forest Service decides, in its expertise, that habitat is a reliable proxy for species’ viability in a particular case, the Forest Service nevertheless must both describe the quantity and quality of habitat that is necessary to sustain the viability of the species in question and explain its methodology for measuring this habitat”); *Idaho Sporting Congress v. Rittenhouse*, 305 F.3d 957,

972 (9th Cir. 2002) (methodology for using habitat as a proxy must “reasonably ensure viable populations of the species”).

Because the Forest Service lacks population and trend data for goshawks in the region, as discussed above, the agency can only ensure that further habitat destruction is lawful if it knows it is maintaining sufficient goshawk habitat. The Big Thorne FEIS points to the reserve-based TLMP wildlife conservation strategy as helping to accomplish that, while acknowledging some uncertainty about its sufficiency. FEIS at 3-45, 3-98, 3-133. The document also relies on the percentage of residual forest cover in the project area that is at least 50 years old. *Id.* at 3-230, 3-237. And it counts its “legacy” standard, which leaves 30% forest cover in some clearcuts, as additional evidence that it is meeting its viability obligations. *Id.* at 3-133, 3-230; *see also id.* at 3-420 (describing legacy standard application). None of these measures, however, accomplishes the agency’s viability goal for goshawks.

The reserve-based wildlife conservation strategy in TLMP was not designed for goshawks. As a recent review noted, “the conservation strategy for northern goshawks in southeastern Alaska became a composite of conservation measures superimposed on a conceptual framework developed for other vertebrate species of concern.” PR 736_2204 at 7 (Smith (2013)). At the behest of Congress, when the TLMP wildlife reserve system was proposed, the Alaska Region of the Forest Service commissioned the agency’s Pacific Northwest Research Station to conduct a peer review of it. The Research Station’s review identified several weaknesses in the conservation strategy, including that “[t]he particular pattern of Habitat Conservation Areas that it suggests will not ensure viability of all species.” PR 736_2241a (Greenpeace Exhibit 29 at 5) (Kiestler & Eckhardt (1994)). The Review concluded that goshawks were of particular concern:

This species is likely to become protected under the Endangered Species Act. Thus, management planning with regard to the northern goshawk will need to be especially conservative. Because goshawks require large territories to thrive, several reviewers are of the opinion that even large [habitat conservation areas (HCAs)] were not adequate to meet its needs.

Id. at 23-24. Individual reviewers’ comments confirm the strategy’s inadequacy. For example, ornithology professor Craig Benkman found that:

[T]he recommended HCA sizes and distances between them inadequately protect the goshawk. Large HCAs need to support eight pairs of goshawks, but based on the [strategy] authors earlier work large HCAs will support at most three pairs of goshawks. Similarly, medium HCAs will usually support no goshawk pairs, not two pairs.

Id. at 39. Prominent population biologist Russell Lande was concerned that even if the HCAs could sustain as many goshawks as the strategy proposed, local extinctions could still occur:

In the *Strategy*, large HCAs composed of 20,000 contiguous acres of old growth . . . are stated to be capable of supporting 8 pairs of goshawks There is no observational evidence or modeling cited . . . to suggest that these numbers will adequately reduce local extinction rates. Such small populations of . . . goshawk would be subject to strong effects of demographic stochasticity and possible inbreeding depression

Id. at 79 (emphasis in original).

Recently, a detailed examination of how well the conservation strategy actually protects known goshawk use areas also found the strategy fundamentally inadequate. The strategy protects old growth in reserves, irrespective of whether that is the forest selected by real-world goshawks, spread thinly across the region and under stress from lack of prey. Analyzing the old growth forests around a very large number of identified nest sites, the study discovered that most of them were badly unprotected by the strategy.

The study found a strong association of Queen Charlotte goshawks with old growth. All 136 nest areas reviewed were established in old growth, almost always predominantly high or medium volume. PR 736_2204 at 4 (Smith (2013)). The study reported that “breeding pairs in managed landscapes of Southeast Alaska likely rely almost entirely on productive old-growth forests as foraging and nesting habitat.” *Id.* at 7. It concluded that both compositional analyses and radiotelemetry studies showed that “northern goshawks strongly selected medium- and high-volume old-growth forests.” *Id.*

Most tellingly, looking at the conservation status of areas actually used by goshawks in the region, the study found that TLMP measures left most of them unprotected. Of the nest areas (10.5 hectares or 26 acres in size, *id.* at 3) around nest sites actually selected by goshawks, the study found that many, in fact more than 30%, were overwhelmingly available for logging, with greater than 91% of their acreage unprotected. *Id.* at 4. At the larger scale of post-fledging areas, and examining not the composition of the entire landscape irrespective of goshawk use, but rather the status of lands around actual goshawk nest areas, the study found that the conservation strategy also left goshawk territories exposed to untenable alteration. Most – 60% – of all the identified post-fledging foraging areas were predominantly unsecure, that is, had the majority of their acreage left unprotected by the strategy. *Id.* at 6. Thus, the study found that:

conservation measures of the Tongass Land and Resource Management Plan contribute about half the secure habitat recommended for post-fledging areas in the southern portion of this species range ... and ... less than half the relative amount of habitat documented in nest areas in Southeast Alaska. A similar conclusion was obtained for the broader landscape (21 km²) that surrounded each nest.

Id. It concluded that TLMP standards and guidelines were unlikely to meet even goshawk nest area objectives established for other regions, *id.*, that those objectives may *underestimate* the habitat needs of breeding pairs in Southeast Alaska, *id.* at 7, and that the belief that TLMP's system of old growth reserves "will mitigate this deficiency is not supported" by the study. *Id.* at 6.

The Big Thorne FEIS also places great, and mistaken, reliance on the percent of forest cover post-logging. It measures impacts to goshawks in terms of the percent of the landscape that will remain in old growth, of any sort, as well as "mature young growth" at least 50 years old. *See, e.g.*, FEIS at 3-133. Like the conservation strategy, this approach is flawed by ignoring the spatial arrangement of the acres measured, either in relation to one another or with respect to actual goshawk use areas. It also ignores goshawks' well-established strong selection for specifically high and medium volume old growth, discussed above. *See also* PR 736_0341 at 5 (USFWS (2007)). More fatally, it counts as preferred habitat second growth stands as young as 50 years. This is forest that goshawks typically avoid. *See* PR 736_0271 at 36 (Iverson et al. (1996)) (showing that even "mature sawtimber," aged 75 to 150 years, *id.* at 34, was significantly less selected than old growth, while younger stands, classified as "primary succession" and categorized with clearcuts, *id.* were even more avoided). The FEIS cites a USFWS review as support for its 50 year standard. FEIS at 3-133. The review, however, is discussing a study looking at nest tree structure, rather than foraging habitat, and far from a blanket endorsement of all such young stands as suitable, even just for nesting, it says only that "suitable structure is apparently achieved in a minimum of about 50 years on the most productive sites." PR 736_0341 at 28 (USFWS (2007)). The FEIS also cites to "Doyle 2005," FEIS at 3-133, to support the assertion that 40-60 percent of goshawk territories need to be in old growth or "mature young growth" of at least 50 years, but that study in fact considered as "mature" only second growth stands of 81-250 years. Exhibit 17 at 7 (Doyle (2005)). And finally, while the FEIS concedes that dropping "old growth and mature second growth forest to below 50 percent ... could result in portions of the landscape becoming marginal or unsuitable for goshawks," FEIS at 3-230, Alternative 3 does not meet even this watered down and unsupported standard. *See id.* at 3-237 (project area as a whole would have only 44 percent of this forest category post-logging).

As discussed above, the FEIS and biological assessment also repeatedly mention the TLMP legacy standards as a mitigating factor. The short answer to those optimistic assertions is that the FEIS offers no scientific support for them that relates to habitat use by Queen Charlotte goshawks. Nor are appellants aware of any.

In sum, the Forest Service has not ensured the population viability of goshawks against the impacts of the massive Big Thorne Project. The agency has neither accurate population information nor reliable habitat standards for goshawks in northern Prince of Wales Island or the Tongass National Forest as a whole. As a result, it has no way of knowing whether further loss of habitat would cause outright disappearance of goshawks from the project area and beyond. Were that to happen, it would amount to local extirpation and lowering of the regional population with attendant loss of viability. Neither outcome is consistent with the Forest Service's wildlife obligations. And proceeding with the Big Thorne Project as planned, would mean that the agency failed to insure the population viability and distribution of goshawks.

VII. THE FEIS FAILS TO CONSIDER ALTERNATIVES THAT EXAMINED A SMALLER VOLUME SALE THAT AVOIDED KEY HABITAT LOSSES AND MINIMIZED ROAD CONSTRUCTION.

The Forest Service is obligated to give diligent consideration to a project's alternatives. *See* 40 C.F.R. § 1502.14. Here, the Forest Service failed to consider a small volume alternative that avoided logging critical areas of deer habitat and minimized the construction of new roads, which would have minimized the environmental impacts of the sale. As a result, the FEIS fell short of NEPA's obligations

Under NEPA's regulations, an EIS must "[r]igorously explore and objectively evaluate all reasonable alternatives [to a proposed action], and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated." 40 C.F.R. § 1502.14(a). "[I]f the agency fails to consider a viable or reasonable alternative, the EIS is inadequate." *Se. Alaska Conservation Council v. Fed. Highway Admin.*, 649 F.3d 1050, 1056 (9th Cir. 2011) (*citing Friends of Yosemite Valley v. Kempthorne*, 520 F.3d 1024, 1038 (9th Cir.2008); *'Ilio'ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1095 (9th Cir.2006)).

The FEIS's statement of purpose and need explains that "the Big Thorne Project is to contribute to a long-term supply of economic timber for the timber industry on Prince of Wales Island and on the Tongass National Forest in general. FEIS at 1-4 (emphasis added). The FEIS explains that "[t]he Big Thorne Project is proposed at this time to respond to the underlying need for a reliable, economic, and long-term timber supply." FEIS at 1-5. According to the Forest Service, "an underlying need exists for a reliable economic supply of sawtimber for Southeast Alaska mills to help support the timber industry and employment through the transition years until the industry can switch to a stable supply of young growth." *Id.*

Any number of alternatives might accomplish this purpose and need, but the Forest Service did not consider these alternatives. Most notably, the Forest Service could have considered much smaller volume sales, rather than the massive alternatives examined in the FEIS. These sales would have contributed to the long term supply of economic timber. Indeed, the Big Thorne Project dwarfs any logging on the Tongass in recent history. *See supra* Section II.A.

Here, the Forest Service only considered action alternatives that involved massive volume, long-term proposals in portions of the Tongass that have already suffered the most damaging effects of logging. “The existence of a viable but unexamined alternative renders an environmental impact statement inadequate.” *Westlands Water.*, 376 F.3d at 868. The Forest Service acted unlawfully when it failed to consider smaller volume sale alternatives that could have minimized the losses of old growth habitat, reduced the construction of new roads, and avoided logging massive portions of Prince of Wales Island, in some instances for a third time.

VIII. THE FOREST SERVICE ACTED ARBITRARILY AND CONTRARY TO TLMP WHEN IT OVERRODE EXPERT OPINION REGARDING OLD GROWTH RESERVE BOUNDARY MODIFICATIONS.

In the ROD, the Forest Service approved the Big Thorne Project approved the decision to move several existing OGR boundaries. TLMP requires that any such modifications “provide comparable achievement” of the plan’s old growth goals and objectives. *See* TLMP at 3-62. Here, the Interagency Old Growth Reserve Review team (OGR Review Team) for the Big Thorne Project concluded several of the proposed OGR boundary changes did not meet this standard. In response, the Forest Service accepted some of those conclusions but in other instances the Forest Service overrode the OGR Review Team’s conclusions. The Forest Service, however, failed to adequately explain its decisions, making it impossible to view the ultimate determination as anything more than an arbitrary unilateral decision by the Forest Supervisor. As explained below, this was unlawful.

Under TLMP, OGR boundaries can be modified but only under very specific circumstances. More specifically, the plan provides that: “Alternative reserves must provide comparable achievement of the Old-growth Habitat [Land Use Designation] goals and objectives. Determination as to comparability must consider the criteria listed in Appendix K.” TLMP at 3-62 (WILD1, B.2).

In the ROD, the Forest Supervisor explains that he “selected alternative locations for small old-growth reserves for VCUs 5790, 5800, 5810, 5820, 5830, 5850, and 5950.”¹³ ROD, 6. The OGR Review Team opposed many of the proposed changes in these VCUs based on the biological determination that the proposed changes would not provide comparable achievement of the Old-growth LUD goals and objectives. See PR 736_2191 (OGR Report). The Forest Service overrode many of these conclusions, but provided weak justifications for accepting some of the OGR Review Team’s conclusions regarding comparability and rejecting those conclusions in other instances.

For example, in VCU 5810 the OGR Review Team concluded the proposed change in the southern OGR would provide for comparable achievement. PR 736_2191 at 5 (OGR Report). The OGR Review Team, however, “strongly recommend[ed] retention of the north OGR as currently mapped” PR 736_2191 at 5 (OGR Report), explaining that “[a]ny reduction in POG in the northern OGR, with substitute acres designated elsewhere in the VCU, would reduce effectiveness of the OGR and would not provide comparable achievement.” *Id.* (emphasis in original). Yet, in the ROD, the Forest Service did exactly the opposite:

The proposed modification in VCU 5810 makes no changes to the South OGR. The north OGR contains about 1,560 acres, of which about 608 acres is POG. In 2000, under a previous decision changes were made to the OGR that resulted in reduction of POG below the Forest Plan requirement. Although on the surface this appears to be inconsistent with the Forest Plan, legacy acres and stream buffers among these units and extending to the existing OGR maintain some elevation travel corridors for wildlife. In addition, the Selected Alternative makes no changes to the south OGR which contains 2,188 acres, including about 1,421 acres of POG, which will continue to meet the goals and objectives of the Old Growth Habitat LUD and fulfill habitat conservation and timber harvest objectives.

ROD at 6. The Forest Service explicitly recognized that these changes “would reduce total OGR and POG acreages.” ROD at A3-3 (as well as those approved in VCUs 5790 and 5850).

¹³ The Forest Supervisor elected “not to modify the OGR boundaries as depicted in Alternative 3 for VCUs 5840, 5860, 5960 and 5972,” explaining that this decision “will maintain current connectivity, large blocks of [productive old-growth (POG)], low elevation POG, deep snow deer and marten habitat and potential goshawk and marbled murrelet nesting habitat.” ROD at 6. The ROD, however, does not explain why these same concerns do not apply to the remaining OGR boundary changes, which the Forest Service did approve. The Forest Service acted arbitrarily as a result.


This is just an illustration of the larger problem that was created when the Forest Service failed to explain adequately why it overrode the conclusions of the OGR Review Team's conclusions regarding "comparable achievement" of old-growth LUD goals and objectives. It appears the Forest Supervisor used unilateral decision-making authority to dictate the location of small OGRs, which arbitrarily sacrificed biological needs for timber and economic reasons. As a result, the Big Thorne Project is unlawful in this regard.

IX. CONCLUSION

For the foregoing reasons, Appellants request that the ROD and FEIS be reversed and remanded in light of the failure of those documents to assess accurately the need for the Big Thorne Project, its economic costs, and its impact on wildlife. Any new decision must correct these errors, but—in light of the long-term weak demand for timber and the extreme threat posed to wolf and goshawk populations and hunting opportunities on Prince of Wales Island—the better course would be to drop any plans for old growth logging in the project area. Until a defensible decision is made, no old growth logging or road building should proceed.

Thank you for your careful attention to this appeal.

Sincerely,



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EXHIBIT LIST

Exhibit No.	Description
1	USDA Forest Service, <i>Trajectory to Young Growth on the Tongass National Forest</i> , Issue Paper (Jan. 2013) (January 2013 Issue Paper)
2	USDA Forest Service, Timber Volume Under Contract, FY09, <i>available at</i> http://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785
3	USDA Forest Service, Timber Volume Under Contract, FY10, <i>available at</i> http://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785
4	USDA Forest Service, Timber Volume Under Contract, FY11, <i>available at</i> http://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785
5	USDA Forest Service, Timber Volume Under Contract, FY12, <i>available at</i> http://www.fs.usda.gov/detail/r10/landmanagement/resourcemanagement/?cid=fsbdev2_038785
6	USDA Forest Service, <i>Tongass Limited Shipping Policy</i> , Issue Paper (Apr. 2012)
7	U.S. Forest Service, <i>State of the Tongass National Forest - FY2012</i> (Apr. 2013), <i>available at</i> http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5416953.pdf
8	Declaration of Joseph R. Mehrkens, Exhibit 29 to Plaintiffs' Brief in <i>Tongass Conservation Society v. Cole</i> , No. 1:09-cv-00003-JWS (initially filed as Exhibit D to The Wilderness Society's Administrative Appeal of 2008 Tongass Land and Resource Management Plan Amendment) (May 15, 2008)
9	Order and Opinion, <i>Tongass Conservation Society v. Cole</i> , No. 1:09-cv-00003-JWS (D. Alaska Dec. 7, 2009)
10	USDA Forest Service, <i>State of the Tongass - FY2011</i> , <i>available at</i> www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5399905.pdf
11	USDA Forest Service, <i>USDA Investment Strategy in Support of Rural Communities in Southeast Alaska 2011-2013</i> (Nov. 2011) (USDA Investment Strategy)

- 12 Table 2. Units Recommended for Exclusion by the U.S. Fish and Wildlife Service and State of Alaska
- 13 Table 3. Additional Units with Deep Snow Deer Winter Range
- 14 The Shipley Group. 2009. *Goshawk Survey, Soule River Watershed, Southeast Alaska, 26-28 July 2009* (The Shipley Group, Soule River Survey 2009)
- 15 Schempf, Phil, and Teresa Woods. 2000. *Summary of Status of Queen Charlotte Goshawk Remand* (Schempf and Woods 2000)
- 16 Flatten, Craig, Kimberly Titus, and Richard Lowell. 2001. *Northern Goshawk Monitoring, Population Ecology, and Diet on the Tongass National Forest, 1 April 1991 – 30 September 2001*. Alaska Department of Fish and Game. Final Research Report. Endangered species conservation fund federal aid grant SE-4, studies 2 to 6. Juneau, Alaska. 32 pp. (Flatten et al. 2001)
- 17 Doyle, Frank I. 2005. *Breeding Success of the goshawk (A. g. laingi) on Haida Gwaii/Queen Charlotte Islands: Is the population continuing to decline?* Goshawk Productivity and Habitat Requirements 2004-2005 (Doyle 2005)
- 18 U.S. Fish and Wildlife Service. 2010. *Updated Appendices Queen Charlotte Goshawk Status Review Incorporating The Coastal Mainland of BC and New Protected Areas On the Queen Charlotte Islands, BC* (FWS, Updated Appendices to Status Review 2010)
- 19 Crocker-Bedford, D. Coleman. 1994. *Conservation of the Queen Charlotte Goshawk in Southeast Alaska* (Crocker-Bedford 1994)