Date: January 10, 2023
From: Audubon Society of Portland, Cascadia Wildlands, Coast Range Forest Watch, Wild Salmon Center. Western Environmental Law Center, Umpqua Valley Audubon Society, Audubon Society of Lincoln City, Lane County Audubon Society, Kalmiopsis Audubon Society, Salem Audubon Society, Audubon Society of Corvallis, Oregon Wild, Cape Arago Audubon Society, Center for Biological Diversity, Humane Voters Oregon, Oregon League of Conservation Voters, The Larch Company and The Conservation Angler
To: US Fish and Wildlife Service and National Marine Fisheries Service
RE: Elliott State Research Forest November 2022 draft EIS
Docket No. FWS–R1–ES–2022–0029
Comments submitted via www.regulations.gov

Dear Elliott State Research Forest HCP/DEIS Comment Reviewers,

Please accept the following comments from Audubon Society of Portland, Cascadia Wildlands, Coast Range Forest Watch, Wild Salmon Center. Western Environmental Law Center, Umpqua Valley Audubon Society, Audubon Society of Lincoln City, Lane County Audubon Society, Kalmiopsis Audubon Society, Salem Audubon Society, Audubon Society of Corvallis, Oregon Wild, Cape Arago Audubon Society, Center for Biological Diversity, Humane Voters Oregon, Oregon League of Conservation Voters, The Larch Company and The Conservation Angler regarding the Elliott State Research Forest draft Habitat Conservation Plan ("HCP") and Environmental Impact Statement ("DEIS"). We appreciate the opportunity to comment on the DEIS and HCP.

Background
Many of the organizations on this letter have been engaged for decades with efforts to protect the Elliott State Forest and participated in the process to pass Oregon Senate Bill 1546 (2022) which created the Elliott State Research Forest and which provides the foundation for HCP/ DEIS currently under consideration.

The Elliott State Forest is one of the crown jewels of the Oregon Coast Range. Protection of federally listed Northern Spotted Owls, Marbled Murrelets and Coast Coho on the Elliott State Forest is of the utmost importance. The Elliott State Forest is a stronghold for all three of these species. It is important to note that, while habitat loss for these species on federal lands has been significantly reduced since the passage of the Northwest Forest Plan, significant losses have continued to accrue on lands owned and regulated by the State of Oregon, including the Elliott State Forest.

It is also important to note that the State of Oregon has a particularly poor record of protecting federally listed species on the Elliott State Forest. The State of Oregon previously held an approved Habitat Conservation Plan (ROD 1995) which the State abandoned after taking 45 Northern Spotted Owls allowed under the plan. Rather than adhering to the full term of the HCP which ran until 2055, the State instead took advantage of the take allowance provided by the incidental take permit, and then terminated the HCP and defaulted to a "take avoidance" strategy.

In 2014, the State of Oregon settled a lawsuit brought by conservation groups, Cascadia Wildlands, Portland Audubon and Center for Biological Diversity (*Cascadia Wildlands et al v. Kitzhaber et al*) and agreed to cancel 28 timber sales on the Elliott, Clatsop and Tillamook State Forests because of the likelihood that the sales would result in illegal take of marbled murrelets. This litigation occurred following years of illegal harvest in occupied marbled murrelet habitat, as defined under the Pacific Seabird Protocol, which significantly reduced the amount of available habitat within the Elliott for this species.

Finally the public has invested more than $220 million to buy the Elliott out of its obligations to Oregon Common School Fund and alleviate the pressure to log the forest in order to support Oregon schools. This represents a very substantial investment in permanently protecting the Elliott that allows the state maximum flexibility in terms of how the Elliott is managed. This should be a significant factor when the federal agencies apply the "maximum extent practicable" standard to the protection of listed species on the Elliott.

In short, this habitat conservation plan should be viewed in the context that illegal harvest activities by the State of Oregon in the years following listing of the species under consideration, has already adversely impacted these species. The terms of any HCP approved by the federal agencies must not only address future impacts to the species, but also compensate for illegal take that occurred in the past. The terms of the HCP should ensure that habitat conditions on the Elliott result in a significant <u>increased net benefit</u> for all three species throughout the term of the HCP.

Several of the signatories of this letter actively participated in the development of the Elliott State Research Forest concept over the last several years and actively supported the passage of Senate Bill 1546 which formally created the Elliott State Research Forest in 2022. While there were significant compromises made in order to bring diverse and historically conflicted stakeholders together to achieve consensus around an Elliott State Research Forest concept, we believe that the agreements that have been made to date have the potential substantially advance protection for federally listed species and the habitats on which they depend on the Elliott.

We appreciate the work of the Elliott stakeholder group, Oregon Division of State Lands ("DSL"), Oregon State University ("OSU"), the Oregon Land Board, Oregon Consensus and others in moving this concept to reality. The Elliott State Research Forest has the potential to transcend decades of conflict, provide increased protection for the Elliotts imperiled species, older forests

and streams, support rural economies and increase recreational opportunities. We offer these comments in the spirit of moving this process forward.

Support for the work done to date however, should not be construed to indicate tacit support for the HCP or DEIS preferred alternative as presented in the current public review drafts. Both the HCP and the DEIS provide significant additional layers of detail and analysis that go beyond the materials that we have previously reviewed. There are places where the HCP and DEIS are materially different from prior agreements, where language is unclear or imprecise, where analysis by USFWS and NOAA reach different conclusions from those previously indicated by OSU or DSL and where provisions are entirely new or go beyond what has previously been discussed. In general, much of the material that we are now reviewing is consistent with the expectations we have developed based on the past four years of work, but there are significant areas that are in need further review, clarification and revision in order conform to the agreements made to date and more importantly, to ensure adequate protection for Marbled Murrelets, Northern Spotted Owls and Coast Coho on the Elliott.

The following are our specific concerns/recommendations:

1. **Our most significant concerns pertain to mapping related to occupied and modeled Marbled Murrelet Habitat.**

   DSL and OSU have repeatedly assured stakeholders that all known occupied habitat, including buffers, were included in the HCP. This includes Oregon Department of Forestry ("ODF") Marbled Murrelet Management Areas ("MMMAs"), data provided by Kim Nelson and data submitted to the state by Coast Range Forest Watch. Additionally, OSUs modeled habitat should accurately reflect, to the greatest extent possible, potential Marbled Murrelet Habitat on the Elliott that has not previously or recently been surveyed. Due to the fact that the State has adopted a "take avoidance strategy" in recent years, much of the Elliott, including extensive areas of suitable and highly suitable habitat, have not been recently surveyed. OSUs modeling of potential habitat should capture all unsurveyed stands with potential to provide habitat for nesting murrelets and the boundaries of those modeled habitats should conform to the Pacific Seabird Protocol for delineating Marbled Murrelet habitat including associated buffers.

   If data sets are incomplete or occupied habitat or modeled habitat are inaccurately mapped (i.e. fail to conform the the Pacific Seabird Protocol for designating habitat and buffers), there would be a significant potential that the HCP would fail to adequately or accurately capture and protect both occupied and potential habitat on the Elliott. It is of paramount importance that USFWS carefully review the HCP submitted by the State of Oregon to ensure that the mapping of occupied and potential Marbled Murrelet habitat is complete, accurate and conforms to the PSG Protocols for designating habitat including appropriate buffers. We would specifically call USFWS' attention to the following two areas of concern:

a) **The Marbled Murrelet occupied habitats must include 100 meter buffers consistent with USFWS Recommendations throughout the entire Elliott State Research Forest**: OSU/DSL have consistently assured stakeholders that all occupied Marbled Murrelet habitat on the Elliott includes buffers consistent with USFWS recommendations and the Pacific Seabird Group Protocol. These buffers are essential to protect occupied habitat from penetration by predators, blowdown of trees along hard edges, microhabitat changes, and increased fragmentation. Failure to include buffers would result in the degradation of Marbled Murrelet habitat throughout the ESRF, especially in the Management Research Watersheds where occupied habitat will be surrounded by intensive and extensive forestry activities. Nowhere in either the research plan or in the HCP produced by DSL is it mentioned that occupied habitat would exclude standard buffers and their potential exclusion is directly at odds with assurances provided by DSL/ OSU throughout this process, The first time that the absence of buffers has been identified in this multi-year effort is in the DEIS provided by USFWS.

There are several locations where the lack of buffers is highlighted by USFWS in the DEIS. For example USFWS writes the following about the preferred alternative:

> *Since the 100-meter buffers around occupied sites would not be required, harvest treatment adjacent to marbled murrelet nesting habitat would create a sharp edge that would subject any nesting murrelets to increased risk of nest site predation and may alter habitat through microclimate effects. This effect would occur at the affected site for several years until regeneration occurs to create a softer edge and less direct access to nesting stands for predators. (DEIS at 3.5-23)*

The lack of buffers around the MRW would also appear to explain at least in part why the amount of habitat with no harvest is so much lower under the preferred alternative (37,453 acres) than under the no action alternative (47,303 acres). (DEIS, Table 3.1-1 at page 3.1-2)

The State clearly recognizes the potential threat to murrelets that absence of buffers could create. It writes the following on 4-27 of the HCP:

> *Impacts of extensive edges "Harvest of non-habitat within intensive stands may still indirectly affect marbled murrelet nesting habitat in adjacent stands. As described under Effects Pathways, harvest adjacent to marbled murrelet nesting habitat may create a sharp edge that could subject any nesting murrelets to increased risk of nest site predation. This effect could occur at the affected site for several years, until regeneration occurs to create a softer edge and less direct access to nesting stands for*

predators. In addition to nest site depredation from corvids that may increase with the creation of edge habitat, clearcut harvest and heavy thinning will expose habitat to windthrow by removing wind protection that was provided by the harvested/thinned stand (Raphael et al. 2016). In addition, harvest of adjacent stands can reduce humidity levels within habitat, reducing the extent and future development of mossy branches required for marbled murrelet nest sites (Van Rooyen et al. 2011).

Additionally, on page 4-25 of the HCP, DSL writes:

Mortality of marbled murrelet eggs or chicks could occur due to nest site depredation facilitated by clearcut or heavy thinning adjacent to occupied nesting habitat. Ravens, crows, and jays are known to prey on marbled murrelet eggs and young (Golightly and Schneider 2011; Flaxa et al. 2016). The Marbled Murrelet Recovery Plan (U.S. Fish and Wildlife Service 2017) recommended minimum buffer widths of 300 to 600 feet to maintain and enhance buffer habitat around occupied nesting habitat.

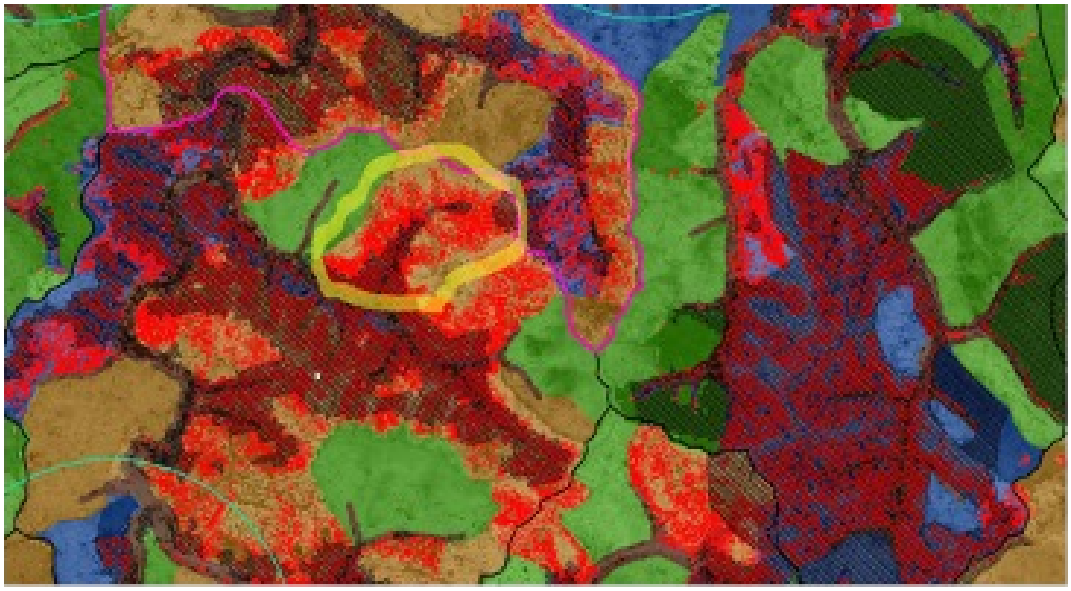
This potential lack of buffers surrounding occupied Marbled Murrelet habitat represents by far the most significant issue of concern contained within the DEIS/ HCP and, if USFWS' analysis is accurate, would represent a potentially fatal flaw in the agreements made to date. If occupied Marbled Murrelet habitat does lack buffers, we would assert that the State, OSU and USFWS are significantly underestimating the potential take of Marbled Murrelets under the preferred alternative. Harvesting timber immediately adjacent to occupied habitat, which in many cases is already heavily fragmented, is likely to significantly reduce or eliminate marbled murrelet nesting habitat throughout the Elliott, especially in the Management Research Watersheds which comprise approximately two thirds of the forest. This would put the potential take of murrelets thousands of acres above what is anticipated in the DEIS.

It is of paramount importance that the Services and DSL/OSU determine whether in fact the USFWS interpretation is accurate. If it is accurate, we would view this as a significant deviation from the agreements made to date and take at a level that is inconsistent with the requirements of the Endangered Species Act. Proceeding forward without calculating the potential impact on Marbled Murrelet nesting habitat by allowing unbuffered harvest immediately adjacent to occupied Marbled Murrelet habitat would leave the Record of Decision at high risk of legal challenge.

b) **OSU's Mapping of potential Marbled Murrelet habitat appears to be flawed and needs further review**: In recent meetings of the OSU Marbled Murrelet Working Group, it has come to light that the habitat modeling done by OSU to

identify potential Marbled Murrelet habitat on the Elliott may have some significant flaws. Under the Pacific Seabird Group Marbled Murrelet Protocol, if any portion of a stand is found to be occupied by murrelets, then the entire contiguous stand should be considered occupied/used by murrelets for either nesting or breeding. However, the modeling done by OSU of potential habitat only designates portions of what appear to be contiguous stands as occupied.

We have included an example from OSU's watershed maps that exemplifies this concern below. Note the area encircled in yellow. The hatch marks (darker area) show modeled Marbled Murrelet habitat following what appears to be a stream corridor. However, the red dots, representing large old trees, extend far beyond the modeled Marbled Murrelet habitat. Under the Pacific Seabird Group Protocol, if murrelets are found anywhere within a contiguous stand of trees, then the entire contiguous stand should be designated as occupied Marbled Murrelet habitat. Thus, if OSU's modeling shows Marbled Murrelets occurring anywhere within a contiguous stand of trees, then the model should designate the entire stand of trees as occupied. It would be entirely inconsistent with the PSG Protocol to designate a narrow strip within a large stand of older trees as modeled habitat but leave the rest of the stand undesignated. There are several other examples of this flaw within this screen shot, and we have found multiple additional examples on other maps provided by OSU.



It is unclear how significant this modeling error is within OSU estimates for modeled habitat. However, upon preliminary review, it does appear to be quite pervasive. We have requested that OSU address this concern, but have not heard back from them at this point. The take home is that OSU's modeling of potential habitat may significantly underestimate the amount of potential Marbled Murrelet habitat and thus the amount of potential take of Marbled Murrelets that

would occur under this HCP. While we recognize that the modeling will not be completely accurate, it also would not be acceptable for the State to submit and the federal agencies to approve an HCP with known systemic errors in the modeling parameters.

We want to emphasize that the problem here is not a lack of current lidar data as is often suggested by OSU. The problem is that the OSU modeling clearly in some places is only capturing partial stands when the PSG Protocol clearly and explicitly calls for capturing entire contiguous stands. This is a problem with the modeling parameters as opposed to a lack of up-to-date data sets.

As with the buffer issues discussed above, we believe that this concern could result in a significant underestimate of murrelet habitat and the potential take of murrelets on the Elliott, leaving the record of decision vulnerable to legal challenge.

We strongly urge USFWS to ensure that 1) data sets of occupied marbled murrelet habitat are complete, 2) all Marbled Murrelet habitat has 100 meter buffers, and 3) modeling of potential habitat conforms to the PSG Protocol recommendations (includes contiguous habitat).

2. **The Marbled Murrelet Research Project needs to be more clearly defined**:

Among the most controversial aspects of the HCP is the DSL/OSU proposal to harvest up to 1,400 acres of occupied Marbled Murrelet habitat in order to assess the impacts on Marbled Murrelets. Audubon Society of Portland has served on the Marbled Murrelet Forest Management Plan Working Group over the past year and reports that the concerns raised on Elliott Scoping Comments submitted by Audubon Society of Portland et al. in the spring of 2022 have not been adequately addressed.

a. **We continue to question the benefit, need and efficacy of the Marbled Murrelet research experiment**: OSU is proposing to research the impacts of "light" logging within occupied marbled murrelet stands on the basis that existing protection regimes for murrelets may be weakened over time. First, we do not see this specific threat looming on the horizon. Second, it does not appear to us that there is likely to be real world applicability for research focused on light touch harvest in occupied habitat. OSU has not been able to describe a scenario in which this would be a viable harvest strategy for either public or private commercial land managers. Third, OSU does not need to intentionally harm (take) murrelets today in order to understand how future regulatory changes may harm murrelets in the future. We believe that there is a strong body of scientific literature (some of it cited by OSU in their research proposal) that indicates that yes, indeed, thinning stands increases risk. There are many important areas of marbled murrelet research that could be advanced on the

Elliott without intentionally harming marbled murrelets, so we question why this specific focus for research has been so aggressively advanced. We strongly urge OSU to conduct research designed to explore how to increase habitat benefits for murrelets rather than pursuing research designed to test the boundaries of where detrimental impacts occur. We also question whether OSU and DSL will be able to derive meaningful results from this research.

b. **Quantifying take of murrelets**: In quantifying take, it is important that the HCP consider not only direct impacts to occupied and suitable habitat but also fragmentation and edge effects that will be created by adjacent intensive and extensive logging activities. It is also important that the HCP consider all logging within occupied sites as "take." As currently proposed, the HCP still appears to only consider intensive clearcutting to be take, while extensive logging (with 80% basal area retention) is not considered to be take. In fact, it is highly likely that any logging in occupied stands - including the treatments of the proposed research project - will have negative impacts including potentially site abandonment, reduced numbers of birds nesting in the stand, and increased predation. Impacts could be immediate or take place over time as existing nesting birds with strong site fidelity die and are not replaced. The research proposal submitted by OSU recognizes this potential. OSU writes:

> *We hypothesize that the short-term effects on murrelets of even light harvesting will be negative; nest predation rates are likely to increase due to a higher prevalence of corvids (Marzluff et al. 2004, Cahall et al. 2013) and epiphytes needed for murrelet nesting are likely to decline due to reduced moisture (e.g., van Rooyen et al. 2011). We predict that these potential effects of 'extensive' harvest on murrelets will be compounded by canopy removal in adjacent unoccupied stands, which creates hard habitat edges. To our knowledge, no long-term data exist on the extent of these effects over time*.

c. **DSL/OSU must have a credible USFWS-approved research plan (including survey protocols, funding and capacity) <u>before any harvest occurs</u> in occupied Marbled Murrelet habitat**: The proposal to harvest in occupied marbled murrelet habitat is predicated entirely on the premise that this activity will produce meaningful research that will help guide future marbled murrelet management. OSU has explicitly committed to researching the effects of harvest on three parameters: occupancy, nesting success and nest predation.

After multiple meetings over the past year of the Elliott Forest Management Plan Marbled Murrelet Working Group, OSU appears no closer to being able to produce a credible research plan than when we highlighted this specific issue in the Elliott HCP Scoping Comments in June of 2022. While the Pacific Seabird Group Protocol does provide a credible survey protocol to assess occupancy, OSU

has not been able to produce a credible approach to assessing impacts in terms of nest success and predation. Both are critically important since the impacts of a light harvest in occupied habitat will potentially result in any of these three outcomes. Simply assessing occupancy is likely to significantly underestimate potential impacts.

No harvest in occupied marbled murrelet habitat should be allowed under the terms of the HCP until OSU/DSL submit a detailed and credible plan for how they intend to measure the impacts of harvest on occupancy, nesting success and predation rates in both the directly impacted and surrounding occupied habitat. This should include:

1. Secure funding for at least six years of surveys (two pre- and four post-harvest).
2. Adequate capacity, including a sufficient number of qualified trained climbers, to conduct surveys across the entire impact area.
3. Research design and modeling that provides a high level of confidence that the research will yield statistically meaningful results in terms of evaluation of the impacts on occupancy, nesting success and predation rates in the directly affected occupied habitat, adjacent occupied habitat and control study areas

The terms of the HCP should require that DSL submit a detailed research plan to USFWS for approval before any harvesting in occupied marbled murrelet habitat. While the draft habitat conservation plan does require USFWS approval to advance harvest beyond the initial 500 acres, there is currently not a commitment in place to seek approval prior to harvesting in the initial 500 acres. It is essential that this deficiency be remedied.

Finally, we support the formation of a science advisory committee as contemplated in the errata sheet provided by DSL (appended to the end of these comments). This group could serve the purpose of evaluating and approving the Marbled Murrelet research design for the initial and later stages of the research project. However, in order to serve this purpose it must 1) include Marbled Murrelet experts from outside of OSU and 2) be formally charged with serving this purpose (i.e. it must be made clear in the HCP and the conditions of approval, that advancing either the first 500 acres or the additional 900 acres of the Marbled Murrelet research project is subject to the committees approval.

d. **DSL should be allowed to proceed beyond 500 acres only if it can demonstrate that harvest has produced a <u>benefit</u> to marbled murrelets.**

This requirement is captured in the HCP and DEIS. However, it appears from new language that the additional 900 acres may also proceed subject to USFWS

approval even if no benefit occurs. It should be made clear that the 900 acres can proceed only if OSU can demonstrate benefit to Marbled Murrelets from the first 500 acres **and** subject to USFWS approval. Under no circumstances should OSU proceed with additional 900 acres if murrelets are shown to be adversely impacted during application of the first 500 acres or if the application of the first 500 acres fails to produce meaningfully statistical results.

We support the language located on page 5-34 of the HCP pertaining to the additional 900 acres:

> "Consistent with adaptive management, further harvesting (beyond the initial 500 acres) will be contingent on the outcome of the experiments (testing for both statistical and biologically meaningful effects). If experiments find that (1) murrelets do not return to, or colonize, ecological forestry treatments, or (2) nesting birds suffer high rates of nest failure, the Permittee will not proceed with harvest in the remaining 900 acres."

However, the State has also stated that 900 acres will only proceed if "benefit" for murrelets is documented. The above quote paragraph only describes harm. The HCP should delineate more clearly what it means by "benefit."

3. **Marbled Murrelet Replacement Habitat:**

We appreciate the work done by DSL on replacement habitat for Marbled Murrelets. However, some of the language surrounding this issue remains confusing. Language throughout the HCP and DEIS must make it clear that lost occupied habitat needs to be replaced with new occupied habitat (habitat which either did not previously exist or which was previously surveyed and found not to be occupied. It should also make it clear that lost modeled habitat needs to be replaced with new modeled habitat that did not previously exist. This appears to be the intent (confirmed by DSL) but the language should be clearer. We would recommend changing the DEIS at 2-17, Condition 9 to read (new language in red):

> *Condition 9, Maintaining Aggregate Amount of Marbled Murrelet Occupied and modeled Habitat Over Time: This condition requires no temporal loss of the aggregate number of acres of designated occupied or modeled potential marbled murrelet habitat as a result of harvest treatments in the permit area. Lost occupied habitat must be replaced with new occupied habitat defined as habitat that was not suitable for murrelet nesting at the start of the permit term or habitat that was suitable at the start of the permit term and was previously surveyed and found to be unoccupied and which is resurveyed and found to be occupied. DSL must demonstrate that at least as many acres of designated occupied or modeled potential habitat proposed for extensive harvest have been*

replaced by habitat in the CRW or MRW reserves that is first determined to be occupied during the term of the permit. This condition applied to all occupied and modeled habitat impacted by extensive harvest. Any replacement habitat must be fully protected in reserves.

We would also recommend the addition of a section in the HCP that lays this issues out in bullet points at follows:

Replacement habitat for impacted Marbled Murrelet habitat should adhere to the following conditions:

- Must be identified prior to impacts occuring;
- Must be fully protected in reserves (either located in existing reserves or added if not protected at time of identification);
- Impacted occupied habitat must be replaced by new occupied habitat defined as habitat that 1) was not suitable for murrelets at the inception of the HCP and is now determined to be occupied, or 2) suitable habitat which was previously surveyed and determined to be unoccupied, but which through more recent protocol surveys is determined to be occupied.
- An aggregate amount of occupied and modeled Marbled Murrelet habitat must be maintained over time, ahead of any losses.

The most concise and accurate statement regarding replacement habitat is found on page 5-35 of the HCP. We recommend that this language be standardized throughout both documents.

""Newly occupied areas, which could be used to offset any habitat loss, would be locations in the CRW or MRW reserves where surveys have been conducted in the past and no occupancy was documented. In order for newly occupied habitat to count as replacement habitat, it must already be allocated as a reserve (within the CRW, MRW reserve, or RCA) or—if located outside of reserves— reallocated as a reserve." (HCP at 5-35)

4. **HCP (2-32) Marbled Murrelet Trends**:

The HCP should provide more information about Marbled Murrelet populations trends in Oregon and the importance of the Elliott for Marbled Murrelets.

5. **Under the requirements of Condition 7 of the HCP, <u>all</u> marbled murrelet habitat should be surveyed for occupancy prior to management.**

As the HCP currently reads, only habitat 5 acres or greater is required for survey, in both the extensive and intensive harvest stands. Murrelets have been found to nest in trees found in remnant stands of 1 acres or less, and only requiring surveys in 5 acre ares or greater could result in unevaluated take of murrelets, including allowing for habitat to be clear cut with Intensive harvest stands. All murrelet habitat, including remnants of 5 acres for less, within Intensive stands should either be surveyed for occupancy or simply excluded from the intensive harvest (along with a 100 meter buffer). Within extensive stands, murrelet habitat of 5 acres or less should either be surveyed for occupancy before receiving a treatment of 80% retention, or left with 100% retention within the treatment stand.

6. **Acoustical Monitoring for Marbled Murrelets**:

   There is a heavy emphasis in the HCP on acoustical monitoring for Marbled Murrelets. While we agree that acoustical monitoring for murrelets has potential and merits further research, we find the emphasis on this approach surprising. The Pacific Seabird Group Protocol is the standard, accepted protocol for monitoring for murrelet occupancy and relies primarily on visual observations. Acoustical monitoring was discussed as a potential strategy for assessing nesting success by the Elliott Marbled Murrelet Working Group and determined not to be a viable strategy at this time. While we support further research into the efficacy of acoustical monitoring, it should be clear in the HCP/EIS that the State will rely on monitoring protocols recommended by the US Fish and Wildlife Service and the the PSG Protocol is the currently accepted standard.

7. **There is a significant discrepancy between the draft HCP and the DEIS in terms of the estimated amount of new Marbled Murrelet habitat and new Northern Spotted Owl habitat expected to come into existence over term of the HCP**:

   USFWS states in the DEIS that it expects a 10% increase in Marbled Murrelet and Northern Spotted Owl Habitat over the term of the permit. (DEIS at 20) However, DSL states that it expects to see at least 21,000 acres of new Marbled Murrelet habitat (HCP at 5-6) and 14,000 acres of new Northern Spotted Owl habitat (HCP at 5-4) over the term of the HCP. DSL expectations clearly significantly exceed the analysis done by USFWS. It is important that the final HCP and FEIS reconcile this discrepancy. DSL should be held to the targets in the draft HCP since these are the targets that have disseminated to stakeholders over the last couple of years and are part of the foundation of the Elliott State Research Forest agreements. Further, DSL should be required to demonstrate substantial progress towards these habitat goals throughout the term of the HCP.

8. **Northern Spotted Owls:**

For Spotted Owl activity areas that are only partially contained within the Elliott, analysis of protections should be more fine tuned. As currently written, DSL is only required to protect a prorated percentage of the spotted owl habitat within these activity areas. While we understand the logic behind this approach, we believe that DSL should be held to a higher standard that focuses on preserving the viability of these activity areas even if it means taking on a disproportionate amount of the protection relative to its neighbors. DSL's focus should be on preserving owls. It should be required to work with its neighbors to meet protection goals, and to the degree that this cannot be achieved collaboratively, to protect additional acreage within its own holding to the degree possible to meet protection goals.

9. **Roads**:

As currently written, the draft HCP allows for up to 40-miles of new permanent roads on the Elliott over the course of the permit term. DSL has produced an errata sheet (appended to these comments) that commits to an overall net reduction of roads on the Elliott over the life of the HCP. We strongly support the commitment to a net reduction in road density over the entire Ellott over the life of the permit term. We recommend the following additions to this commitment:

a. It should be made explicit that the net reduction commitment is a reduction from the current baseline of road density. In other words, the net reduction must both completely offset any new roads that are developed and reduce road density below the current baseline. DSL has assured us that this is the intent.

b. The errata sheet states that the reduction in road density will occur in "increments" of the term of the permit. DSL should commit to specific time increments of not more than 10-years where it will be able to demonstrate a significant and ongoing reduction in road density. In other words, DSL should provide a road assessment every ten years demonstrating significant reduction in road density relative to the prior assessment throughout the term of the permit.

c. This commitment should include a "stay ahead provision" that ensures that construction of any new roads will be completely offset by removal of existing roads prior to construction of new roads.

d. Reduction in road density should be included in the compliance monitoring and reporting.

Additionally, we recommend including all of the conditions listed in Alternative 3 (Increased Conservation) for road decommissioning found on DEIS Page 2-18. All of these conditions for road decommissioning are reasonable and consistent with best management practices. There is no reason why DSL/OSU should be exempted from these conditions. We recommend incorporating them into the preferred alternative.

Finally, we recommend that USFWS and NMFS require DSL/OSU utilize the Forest Road Inventory and Analysis Process (FRIA; see DEIS at 3.2-5) to identify the highest priority roads and commit to bringing these roads into compliance with the Forest Practices Act.

10. **Acres of Harvest**:

The HCP as currently drafted includes harvest limits that extend far above the agreed upon limits in the Elliott Research Plan and the stakeholder process to date. DSL has included an errata sheet (appended to these comments) that restores annual harvest limits that are substantially consistent with the harvest limits that have previously been discussed and agreed upon. We strongly support replacement of the existing text pertaining to harvest limits with the text constrained in the errata sheet. Of particular importance is that DSL/ OSU be held to the errata sheet limits on intensive and extensive harvest that "no more than 600 acres per year combined will be from Intensive or Extensive treatments. In addition, no more than 80 percent of the intensive/extensive acres will be harvested intensively unless otherwise agreed upon with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (collectively, the Services)."

11. **Protection of pre-1868 "legacy trees":**

While the HCP states the Permitee's commitment to protect pre-1868 trees, there are exceptions to this commitment in several places within the document (pages 3-10, 6-2, 7-4) naming both safety and the inaccuracy of estimating tree ages as reasons for removal of legacy trees. It states that these exceptions need to be monitored and reported on after the fact, but the HCP must also explicitly include a requirement for board review of any considerations for cutting legacy trees and approval *prior* to any action being taken. Without such a requirement there is far too much nuance and leeway provided and could lead to undesirable removal of valuable old growth and resulting public outcry. We also believe that the exception stated on page 3-10 for the lack of precision in aging trees is not a valid excuse, and any tree that has legacy structure, is suspected to date prior to the 1868 fire, and/or proves with increment boring to have an approximate age that would date it pre-1868 should be considered a legacy tree and protected.

The HCP should clarify that protection of legacy trees within a managed stand likely requires providing legacy remnants with a buffer of the surrounding trees and vegetation and refraining from major ground disturbance in order to prevent loss by windthrow, and these types of efforts to protect legacy trees (not just the efforts to remove them) should be included in monitoring and reporting requirements (p. 6-2, 7-4).

12. **Impacts from forestry concentrated in the West Fork Millicoma and Loon Lake-Mill Creek subwatersheds:**

Table 13 of the DEIS (page 11 of Appendix 3.3) details that 26.1% of the West Fork Millicoma will be clearcut and 55.9% will see management (including extensive and restoration treatments); 18.8% of the Loon Lake-Mill Creek watershed will be clearcut and 38.2% will see management -- while all other watersheds will be 5% or less clearcut and less than 25% will be managed extensively or with restoration treatments. It seems then that the greatest impacts resulting from forest management to streams will be concentrated in a few watersheds, and these impacts to the coho populations utilizing these streams have not been adequately assessed - particularly as surveys have shown the upper West Fork Millicoma to be one of the most productive subbasins for coho on the Oregon Coast. Additionally, we would note that these watersheds include both important viewsheds and important recreational activities. The impacts on recreation and viewsheds in these specific watersheds needs to be more fully analyzed.

13. **USFWS/NMFS should require Equipment Limitation Zones ("ELZ") along all seasonal streams:**

The draft HCP requires no protection for seasonal streams (DEIS at ES6). We see no reasonable or scientific basis for not including an ELZ along seasonal streams. Both the Western Oregon Forests HCP and the Oregon Forest Practices Act HCP include equipment limitation zones along seasonal streams. Using heavy equipment in and immediately adjacent to seasonal streams could have significant impacts on Coast Coho as well as non-listed species stream dwelling amphibians. DSL/OSU should commit to a minimum of 35-foot ELZs on both sides of all seasonal streams in both the CRW and MRW.

14. Stream Barriers:

The EIS identifies 22 partial and 12 complete barriers to fish passage on the Elliott (EIS at 5-24). The EIS only commits to addressing these barriers in the event that a road is removed or repaired. DSL should be required to replace all significant barriers to fish passage over the term of the HCP. A plan and timeline for prioritizing addressing fish passage barriers should be included in the FMP.

15. **Protections on all stream types should be at least as protective as the Oregon Forest Practices Act**:

The DEIS highlights several instances where the preferred alternative may be less protective than the requirements of the OFPA. For example, the DEIS states:

Seasonal streams that are not protected as HLDP streams or under Condition 11 under the proposed action could have indirect adverse temperature and sedimentation effects on the perennial and fish-bearing streams they flow into Perennial non-fish-bearing and HLDP streams in full MRW watersheds that do not flow into the Lower Millicoma would have higher risk of adverse temperature and sediment effects than the no action alternative for 500 feet upstream of the confluence with salmon, steelhead, and bull trout streams. Because restoration thinning is more likely to occur under the proposed action, adverse sediment effects wherever ground disturbance from these activities occur within 30 to 50 feet of the stream and adverse temperature effects where shade is reduced would be greater. (DEIS 3.3-17)

We urge USFWS and NMFS to require steam protection standards that are equal to or better than the OFPA throughout the Elliott State Research Forest. A public research forest owned by the State of Oregon and managed by Oregon State University should not have stream protections that fall below forests managed by private timber firms.

16. **Restoration thinning in the Conservation Research Watersheds and Management Research Watershed Reserves must conform to the agreements previously made by DSL/OSU and must truly be limited to restoration thinning for the purpose of enhancing natural resources values on existing plantations:**

    It appears in the current draft of the HCP/EIS more flexibility is being provided than is consistent with the agreements made to date. This includes the following:

    a. DSL/OSU have agreed that all restoration thinning in the CRW and the MRW Reserves will occur in the first 20 years. The DEIS appears to suggest that restoration harvests in the CRW and MRW Reserves could extend beyond 20 years with approval from USFWS (DEIS at 2-9). The HCP also has contradictory language, saying that the restoration thinning will occur within the first 20 years in reserve stands less than 65 years of age in the CRW and MRW on page 3-7; and then contradicts this commitment on page 3-8 by stating that additional restoration thinnings in the MRW reserves “may take longer” than 20 years. DSL/OSU should adhere to their previous commitments and restrict all reserve thinning to a single entry in the first 20 years.

    b. The HCP and DEIS indicate that restoration thinning in the CRW and MRW Reserves could range from 20-80% of the basal area of the stand. This is the first time we have seen this range applied to restoration thinning in reserves and it would appear to allow far more harvest than would be appropriate for restoration thinning with the goal of creating more complex older forests. In fact, it is the same range that is applied to the extensive stands which are designed to achieve both commercial timber harvest and ecological outcomes. Allowing removal of up to 80% of the basal area of a stand under the guise of “restoration

thinning" is not credible. It simply extends the extensive approach to a much bigger area of the forest. We would note that the BLM is currently using a standard of 40-60% canopy cover for restoration thinning projects. https://www.blm.gov/or/districts/medford/plans/files/Dead_Stew_DR_FONSI.pdf Regardless, the focus must be exclusively on expedited creation of complex older forests suitable for Marbled Murrelets and Northern Spotted Owls

c. Restoration thinnings should only occur once with no return entries in either the CRW or the MRW reserves. The HCP reads: "Assess plantations (forests 65 years and younger) in the CRW and MRW for conservation and restoration in the first few years of implementation so that management (a single-entry restoration treatment) can be completed in the first 20 years. Management in the CRW that involves Douglas-fir plantations less than 65 years old will be aimed at accelerating late seral forest conditions." (HCP at 3-7). The DEIS has language that indicates that additional entries may be allowed beyond 20 years with the concurrence of USFWS. Restoration thinnings in the CRW and MRW should be limited to a single entry within the first 20 years and any language suggesting otherwise should be removed.

In summary, DSL/OSU must adhere to the commitments that they have made with regards to restoration thinning in the CRW and MRW Reserves.. They should only occur in plantations less than 60 years of age in 2020, they should be limited to only what is necessary to create older more complex forest conditions, they must occur in the first 20-years, and there must be only one entry.

17. **Extensive stands are not regeneration harvests; should only be entered a single time during the term of the HCP**:

It appears that USFWS is assuming that older stands managed as extensive will be entered up to three times during the permit term. USFWS writes, "For variable density harvest areas, half of stands over 60 years but under 150 years (as of 2020) were returned to age 0 after harvest from three entries over the permit term." (DEIS at 3.4-1)

This is inconsistent with assurances repeatedly provided to stakeholders that extensive stands would typically be entered on 100-year rotations and with the HCP which states that extensive stands will be entered on 90-year rotations and retain 20-80% of the basal area:

> *The 13,414 acres will be subject to "extensive" management protocols that dictate harvest treatments in 90-year rotation cycles (rotation cycles are the timing between commercial regeneration harvests) that retain between 20 and 80 percent of the stand density in order to protect and enhance multiple forest values beyond fiber production, including retention and creation of habitat patches, large trees, multiple canopy levels, and downed wood*. (EIS at 5-13)

Based on this information, there is no way in which an extensive stand should ever be reduced to age zero and there would be no more than a single entry into the stand during the term of the HCP.

Additionally, we are concerned about the use of the term "regeneration harvest" in both the HCP and DEIS. Regeneration harvest is inconsistent with the stated purpose of extensive harvest in OSU's research proposal as being an ecologically-based variable retention harvest, not a near-clear cut regeneration harvest. Based on USFWS' analysis, it would appear that OSU intends to focus its most aggressive implementation of extensive forestry on older stands and that it intends to go beyond the most aggressive end of its harvest range (20% retention) all the way to complete removal of the entire stand over time (with multiple entries).

This is highly problematic for several reasons: First, OSU should not focus its most intensive application of extensive forestry on older stands. Doing so would be entirely inconsistent with its commitment to prioritize protection of older trees and complex forest systems through the use of extensive forestry. Second, the terms of extensive forestry do not allow for removal of more than 80% of the basal area of a stand under any circumstances. Third, extensive forestry cannot use return intervals as a backdoor strategy to up the cut over time.

The HCP commits to the protection of at least 50% of the basal area of any stand over 65 years old. The HCP states, "Any treatments in forests older than 65 years (as of 2020) will include retention of at least 50 percent pre-harvest density to minimize effects." (HCP at 4-7) This commitment will help ensure that no stand over 65 years in age should ever be returned to zero and that the forest complexity inherent in extensive (ecological) forestry is retained. The HCP must make it clear that retention of 50% of pre -harvest density (as of 2020) extends over the entire life of the permit and this commitment must be reflected throughout the rest of the HCP and DEIS. Extensive treatments using short return intervals must not be used to functionally clearcut older stands over time.

Finally we would recommend uploading some of the explanation contained in the OSU Research Plan describing extensive forestry directly into the HCP, copied below:

> **Examples of research concepts that may be associated with extensive treatments:**
> • Emulate and measure response of natural disturbance including reintroduction of complex early seral ecosystems that are being replaced by rapidly growing plantations.
> • Tribal perspectives and traditions
> • Level of retention of the existing forest canopy
> • Distribution of retained trees in a dispersed or aggregated fashion
> • Treatments across the spectrum of forest ages
> • Thresholds of size and quantity of standing dead and downed wood
> • Selective and no use of herbicides

• Tree and shrub regeneration
• Prescribed fire to generate pyro-diversity
• Riparian integration with upslope conditions
• Logging systems under varying levels of retention
• Economic thresholds and markets
• Monitoring objectives and protocols

Examples of attributes that would not characterize an extensive treatment:
• Conversion of a forest from a diverse to a less-diverse condition by not retaining key existing legacies
• A selective harvest without accounting for whether the objective of regeneration has been accomplished so that the long-term desired characteristics of the stand are not sustained
• Establishing merchantable volume as the primary or dominant management objective
• Routine or pervasive use of herbicide
• No plan for or monitoring of desired forest, riparian or wildlife attributes
• No landscape level plan

(OSU ESRF Research Plan at 56)

18. **East Hakki Ridge**:

    East Hakki Ridge was not included in the HCP due to the fact that "This alternative was eliminated from detailed study because it would not meet the purpose and need to respond to the applicant's ITP applications." (DEIS at 2-22) At the December 2022 Oregon Land Board Meeting, the Land Board unanimously voted to decouple East Hakki Ridge from the Common School Fund and make it part of the Elliott State Research Forest. Therefore the basis for excluding it from the HCP no longer exists. We recommend that the Services and DSL work to integrate East Hakki Ridge, in its entirety, into the final HCP and ROD as part of the CRW.

19. **The charts for the No Action Alternative and the Preferred Alternative on page 3.4-7 of the DEIS appear to be identical**. This should be corrected.

20. **Special Status Plant and Fungus Species (**DEIS at 3.4.3.3): DSL/OSU should be required to survey and protect these species.

21. **DEIS Section 3.7 Climate Change**: The analysis in this section appears cursory at best. We would recommend the following:

a. Include a comparison of each alternative to a no harvest strategy. It is important for the purposes of understanding the climate implications of this HCP for the public to be able to understand how much carbon the forest would be able to sequester over time if it were fully protected.

b. Provide a more robust discussion of why the conservation alternative provides nearly 20,000 metric tons of sequestration relative to the preferred alternative.

22. **DEIS Section 3.8 Scenic and Recreational Impacts**:

This section also appears cursory. The HCP does an inadequate job considering both recreational and visual impacts of the preferred alternative. There is no way for the reader of either the DEIS or HCP to get a meaningful understanding of potential visual and recreational impacts. We recommend that USFWS and NMFS require that DSL provide a watershed by watershed analysis of scenic and recreational impacts. Prior planning documents development by DSL have cataloged priority viewsheds and high use recreational areas. DSL should use these materials as a starting point for assessing impacts of the preferred alternative. We are concerned in particular about impacts along high use areas along the Millicoma River and Salander and Little Salander subwatersheds above Loon Lake, especially considering the disproportionate level of impacts to these areas, as outlined earlier in these comments.

23. **Steam adjacent Seeps and Wetlands**:

It appears that the HCP fails to provide protection for stream adjacent seeps and wetlands. We would recommend that the federal agencies require protections identical to the OFPA for stream adjacent wetlands.

24. **HCP Covered Activities: Roads and other infrastructure**:
It should be made clear that new roads and other infrastructure should avoid impacting older forest habitat that would otherwise be protected. There is a significant risk as the HCP is currently written that roads could be put through older forest habitat in order to access younger stands delineated for harvest. Such activity could have significant impacts in terms of loss and fragmentation of Marbled Murrelet and Spotted Owl habitat.

25. **Compliance Monitoring (Chapter 6 of the HCP)**:
Compliance monitoring for habitat (Section 6.4.1, Page 6-7) should include a subwatershed level analysis of increases/ decreases in fragmentation. DSL/ OSU have asserted that the Elliott HCP will result in reduced fragmentation in both the MRW and

CRW. Monitoring should be conducted to ensure that this outcome is achieved.

26. **Adaptive Management (Chapter 6 of the HCP)**:

While we appreciate that the Elliott State Research Forest will differ from many HCPs in terms of the fact that OSU will be actively researching many natural resource topics, including the covered species, it is important that adaptive management not be used to informally change or reduce protections delineated in the HCP or to lower the baseline for species protection on the Elliott. We are concerned that in discussions related to the creation of the Elliott State Research Forest, we have repeatedly heard assertions that research is the primary driver of management of the forest and that other commitments are subservient to the research. It is important that all parties understand that the approval of the HCP represents a binding legal commitment and that the protections for Marbled Murrelets, Northern Spotted Owls and Coast Coho contained within the HCP are not malleable based on evolving research goals and priorities. Any substantive changes to the obligations delineated in the HCP should be subject to rigorous agency review, public notice and comment. Changes should only be made if they substantially increase protections delineated in the HCP or if outcomes are underperforming outcomes described in the HCP. We would note that Marbled Murrelets, Northern Spotted Owls and Coast Coho are all extensively studied species, and while the Elliott presents an opportunity to add substantially to that body of research, any new information developed on the Elliott must be viewed within context of the much larger body of research.

We recommend the following changes to the conditions for adaptive management strategy revision (HCP at 6-14):

- Stay ahead provision should include a requirement that if the State falls behind on its commitment to stay ahead on Marbled Murrelet occupied and modeled habitat, that all harvest in stands older than 65 years ceases until the stay ahead provision is achieved.
- Include provisions to periodically measure increases in Marbled Murrelet and Northern Spotted Owl habitat to ensure that the State of Oregon is on track to meet new habitat objectives by the end of the permit term.
- Include provision to periodically measure that the State of Oregon decreases in road density (we recommend 10-year increments) to ensure that a net reduction in overall road density is occurring throughout the term of the HCP

27. **Comment Period**:

As is too often the case, the comment period for the Elliott State Research Forest HCP/ DEIS was too short. Originally it extended from just before Thanksgiving until the day after New Year. Ultimately it was extended to January 10th. However, a document of this length (over 800 pages combined) and public interest should never have a comment period of less than 60 days. This is all the more important if the comment period extends through the holiday season. We understand that the agencies are on a tight timeline, but that should not result in an inadequate timeline for public review.

Thank you for your consideration of these comments. We look forward to continuing to work with the State, OSU, USFWS and NMFS to ensure that the Elliott State Research Forest makes a substantial contribution to the protection and recovery of Marbled Murrelets, Northern Spotted Owls and Coast Coho.

Respectfully,

Bob Sallinger
Conservation Director
Audubon Society of Portland

Teresa Bird
Co-director
Coast Range Forest Watch

Stacey Detwiler
Oregon Policy Senior Program Manager
Wild Salmon Center

Debbie Schlenoff
Conservation Chair
Lane County Audubon

Ann Vileisis
President
Kalmiopsis Audubon Society

Steve Griffiths
Conservation Chair
Audubon Society of Lincoln City

Josh Laughlin
Executive Director
Cascadia Wildlands

Ellen Porter
Conservation Chair
Umpqua Valley Audubon Society

David Harrison
Conservation Chair
Salem Audubon Society

Sristi Kamal Ph.D
Deputy Director
Western Environmental Law Center

Steve Pedery
Conservation Director
Oregon Wild

Harvey Schubothe
President
Cape Arago Audubon Society

Noah Greenwald
Endangered Species Coordinator
Center for Biological Diversity

Mark Stern
Elliott Stakeholder Advisory Committee

Brian Posewitz
DIrector
Humane Voters Oregon

Julia DeGraw
Coalition Director
Oregon League of Conservation Voters

Jim Fairchild
Conservation Chair
Audubon Society of Corvallis

Andy Kerr
Czar
The Larch Company

Dave Moskowitz
The Conservation Angler

Appendix 1: Elliott State Research Forest HCP November 18, 2022 DRAFT FOR REVIEW

Public Draft HCP Errata Sheet

Below is a summary of intended updates to the current draft Elliott State Research Forest (ESRF) Habitat Conservation Plan (HCP) submitted by the Department of State Lands and posted by U.S. Fish and Wildlife for public review and comment on November 18, 2022. These language modifications to language are the result of ongoing conversations with Stakeholders about the draft HCP, and reflect adjustments DSL intends to propose to the federal agencies as part of finalizing the HCP in coming months. This list is not inclusive of all possible adjustments that will be made in response to comments received in the federal process, but reflects commitment as of November 18, 2022.

1. Chapter 5 – Science Advisory Committee

All provisions where this committee is identifed in the language of the HCP will be revised to ensure the composition is as follows: A science advisory committee will be created by the Permittee and will include, but not be limited to, participants from OSU, USFWS, NMFS, ODFW, two members of the Board of Directors of the Elliott State Research Forest Authority (or its equivalent stakeholder advisory body should the Authority not become operational), and appropriate subject matter experts not affiliated with other entities represented on the committee. The Services may recommend other federal, state, tribal, and local governments and non-governmental organizations be invited to participate in informing the advisory committee on research needs.

2. Chapter 3, Section 3.4.1 Projected Timing and Amount of Harvest

This conservation measure has been updated as follows:

Projected Timing and Amount of Harvest The following limits would apply to acres sold (contracted) for commercial harvest by treatment type and timeframe. These limits are approximations that do not account for changing habitat conditions due to naturally occurring events (e.g., fire, insect infestation).. Timber sales from all sources (reserve thinning's, extensive, and intensive treatments) will not exceed 1,000 acres per year based on a four year rolling average of contracted sales. Of the 1,000 acre cap, no more than 600 acres per year combined will be from Intensive or Extensive treatments. In addition, no more than 80 percent of the intensive/extensive acres will be harvested intensively unless otherwise agreed upon with the U.S. Fish and Wildlife Service and National Marine Fisheries Service (collectively, the Services). Separate from the limits stated above, there is demonstrated need to implement ecological-based restoration thinnings of plantation stands in areas designated as reserves and Riparian Conservation Areas in order to facilitate development of mature, complex forest stands

over time that will provide enhanced habitat for covered species. In order to account for this habitat improvement objective while also addressing for the age distribution of forest stands in these areas that require an accelerated timeline for management to accomplish that benefit, additional acres of restoration thinnings may be allowed exclusively for this purpose in the first 20 years of the permit after consultation with the Inter-Agency and Stakeholder Research Team identified elsewhere in this HCP and with prior concurrence of the Services. The additional acres contracted for thinning for this purpose will not exceed 400 acres in any given year of the first 20 years of the permit. This provision allowing for potential additional acres of restoration thinning above the limitation set forth for all treatments ends after year 20 of the permit. This use of acres sold recognizes an important consideration of forest operations. Contracts for sale of timber routinely allow actual harvest to occur over a 3-year period following the sale at the discretion of the contractor. This standard practice can (and often does) result in a variable number of acres harvested in any given year of a contract. Extension of this 3-year period for contract execution may be sought by the permit holder in consultation with the agencies when unforeseen circumstances arise related to contractor operations.

3. Chapter 5, Section 5.4.3 Conservation Measure 3: Reduce Forest Road Network in the CRW

This conservation measure has been updated to read as follows: Conservation Measure 3, Reduced Density of Forest Road Network in the Permit Area

The objectives for managing the forest road systems are to keep as much forest land in a natural productive condition as possible, prevent water quality degradation and associated impacts on aquatic and riparian resources, minimize disruption of natural drainage patterns, provide adequate fish passage, and minimize exacerbation of natural mass-wasting processes. In addition, minimizing road networks can have direct and indirect positive benefits on northern spotted owls and marbled murrelets.

The construction and use of forest roads are an integral part of actively managing state forest lands. Roads provide essential access for forest management activities, fire protection, and a variety of recreational uses. However, roads can be a major source of habitat removal, fragmentation, disturbance, erosion, and sedimentation. Roads can degrade salmon habitats through increased delivery of fine sediment, landslide frequency, and changes in stream hydrology (Furniss et al. 1991; Boston 2016). In addition, stream-crossing structures such as culverts can impede the transport and delivery of sediment and woody material to downstream reaches (Roni et al. 2002). Proper road system planning, design, construction, and maintenance will prevent or minimize water quality problems and associated impacts on aquatic resources and will significantly extend the useful life of a forest road. As described in Section 3.2, most roads in the permit area are on ridge tops, which are generally the most stable and protective the aquatic resource and water quality.

For the ESRF transportation system, the road network will provide effective access for all necessary activities taking place in the forest. The transportation system will be actively managed to minimize effects to the functioning condition of at-risk natural resources. The road

network throughout the permit area will not expand more than 40 miles of permanent new roads over the course of the permit term. In addition, the current road density will decrease in the permit area in increments over the term of the permit. Decreases will be emphasized in the CRW. In order to meet this commitment, DSL will use the road inventory (described below) and monitoring to identify roads that are contributing to the degradation of covered species habitat as decisions are made regarding abandonment or decommissioning. An interagency stakeholder advisory committee will participate in research and monitoring planning conversations as it pertains to the reduction of road density. This committee will be created and managed by the Permittee and will include, but not be limited to, participants from DSL, OSU, USFWS, NMFS, ODFW, two members of the Board of Directors of the Elliott State Research Forest Authority (or its equivalent stakeholder advisory body should the Authority not become operational), and subject matter experts not affiliated with other entities represented on the committee. The Services may recommend other federal, state, tribal, and local governments and non-governmental organizations be invited to participate in informing the advisory committee on research needs.

Any new roads will be constructed in the best locations for minimizing impacts on aquatic and riparian systems Any expansions will be kept to the minimum needed to achieve forest management objectives. Road crossings will be constructed to meet NMFS and ODFW fish passage requirements. Roads will be constructed, maintained, and vacated following the restrictions outlined in Section 3.6.1, Road System Construction and Management. All new roads will be sited in the best locations for carrying out anticipated activities, and the standard for forest roads will be a suitable match for the terrain and type of access needed. The roads will be effectively maintained to minimize degradation to other natural resources.

All road construction, maintenance, and abandonment will be performed in accordance with restrictions placed by the Oregon Forest Practices Act (Oregon Administrative Rule 629) and other applicable statutes as described in Chapter 3. Surface erosion and delivery of sediment to streams can be substantially reduced through good road design and maintenance (Roni et al. 2002). Stream processes that can be restored through road design and improvement techniques are shown in Table 5-2 and will be implemented when designing new roads and improving existing road systems in the permit area to benefit the covered salmonids.

Table 52 . Processes Restored by Various Road Improvement Techniques

- Road Improvement Technique Hydrology
- Sediment Delivery
- Fine (sand and smaller particles)
- Coarse (gravel and larger particles)
- Removal of active roads or legacy roads that are degrading the aquatic environment
- Culvert or stream-crossing upgrades (repair unstable crossings)
- Sidecast removal or reduction X X
- Reduced road drainage to stream 1 X X

- Increased surface material thickness o
- hardness with crushed rock or paving X
- Traffic reduction (unpaved roads) X Source: Roni et al. 2002.
- Drainage reduced through increased crossings and by diverting water onto forest floor.

While roads can represent a significant human impact on the larger forest system in terms of chronic long-term disturbance, fragmentation, sediment yield, and access for invasive species, in the ESRF the majority of the road system is on ridgelines, with approximately 0.5 percent of the roads within 100 feet of a fish-bearing stream and 9 percent of stream crossings traversing a fish-bearing stream.

During the first 12 years of HCP implementation a study on the degree of hydrologic connections of current and legacy roads and their primary locations in the permit area will be developed. Monitoring will identify candidate roads for modification to test methods for reducing hydrologic connections through road restoration and long-term monitoring of subsequent habitat impacts. In support of this, an inventory of the road networks will be maintained to identify current and legacy roads that present a risk to the aquatic and riparian system and seek to implement modifications to the road system, prioritizing segments that pose the highest risk to aquatic resources. This inventory will also be used to track current and future road density during the permit area.

Roads that pose an ecological risk may be decommissioned, depending on their utility. This effort will be mindful of providing access for firefighting and recreation consistent with reserve goals and multiple management objectives associated with this publicly owned forest. The road network in the CRW and MRW will decline over time, and new, permanent roads may be constructed as part of a strategy to decommission road segments that are a problem. Any road decommissioning strategy must be developed and implemented within the context of a forest management plan.

4. Chapter 5, Section 5.5.12 Condition 11: Management on Steep Slopes

DSL is working with the Services to add additional detail and commitment to Condition 11. Key substantive updates that will be incorporated include:

- Language committing to protect a minimum of 30% of steep slopes (those above 65 degrees gradient) in each of the coho independent populations in the permit area.
- A commitment to performing a desktop review of harvest units using the NetMap model (or best available science) to identify landslide-prone areas with the potential to reach to fish, and to use this review to guide the field analysis (required by current language). A geotechnical specialist will undertake the field review during harvest layout and advise on minimizing the risk of sediment transfer or increased risk of landslides that may negatively affect coho salmon.