



April 5, 2017

CERTIFIED U.S. MAIL—RETURN RECEIPT REQUESTED

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cc: Secretary
U.S. Department of Commerce
1401 Constitution Ave., NW
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Secretary
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C. 20240

Re: Supplemental Sixty-Day Notice of Intent to Sue for Violations of Sections 4(d) and 9 and of the Endangered Species Act

Dear Gov. Brown, Mr. Daugherty, Ms. Skinner, Mr. Cafferata, and Mr. Goody:

This letter is sent on behalf of the Center for Biological Diversity (hereafter “the Center”), Cascadia Wildlands, the Pacific Coast Federation of Fishermen’s Associations (“PCFFA”), and the Institute for Fisheries Resources (collectively “Parties”). The Parties intend to file a lawsuit against you in U.S. District Court for violations of sections 4(d) and 9 of the Endangered Species Act (“ESA” or “Act”), 16 U.S.C. §§ 1533(d), 1538(a)(1)(B), due to the unlawful take of Oregon Coast coho salmon (*Oncorhynchus kisutch*) from ongoing logging, log-hauling, and road-building and road maintenance on the Tillamook and Clatsop state forests that are authorized by the Oregon Department of Forestry (“ODF”).

This notice letter supplements the letter the Center sent on February 13, 2014.

At this time, the Parties are open to working with you to ensure that ODF-authorized operations in the Tillamook and Clatsop state forests come into compliance with the ESA. Specifically, the Parties are available to assist ODF in developing a forest management and Habitat Conservation Plan that meets the requirements of Section 10 of the ESA and would justify the issuance of an Incidental Take Permit authorizing ODF-authorized activities. In the absence of an agreement to that effect, we will have little recourse but to bring suit in U.S. District Court for the ESA violations described herein.

I. The ESA Prohibits the “Take” of Oregon Coast Coho Unless Authorized by an Incidental Take Permit.

Section 9 of the ESA prohibits the “take” endangered species. 16 U.S.C. § 1538(a)(1)(B). The term “take” is defined in the “broadest possible manner to include every conceivable way” in which a person could harm or kill fish or wildlife. S. Rep. No. 307, 93rd Cong., 1st Sess. 1, *reprinted in* 1973 U.S. Code Cong. & Admin. News 2989, 2995. Accordingly, the ESA defines “take” as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” 16 U.S.C. § 1532(19). The National Marine Fisheries Service (“NMFS”) has further defined the term “harm” to include “significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding or sheltering.” 50 C.F.R. § 222.102; *see Babbitt v. Sweet Home Chapter of Communities for a Great Oregon*, 515 U.S. 687, 701 (1995) (upholding functionally indistinguishable Fish and Wildlife Service regulatory definition). Although NMFS has not promulgated a regulatory definition of “harass,” U.S. Fish and Wildlife Service (“FWS”) regulations define “harass” as “an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering.” 50 C.F.R. § 17.3.

Pursuant to Section 4(d) of the Act, 16 U.S.C. § 1533(d), NMFS extended ESA Section 9 prohibitions to Oregon coast coho salmon that are listed as a threatened species under the ESA since May 12, 2008. *See* 50 C.F.R. § 223.102(c)(24); 76 Fed. Reg. 35,755 (June 20, 2011) (designating as “threatened” all naturally spawned populations of coho salmon in Oregon coastal streams south of the Columbia River and north of Cape Blanco, including the Cow Creek coho hatchery program).¹ Consequently, ESA sections 9(a)(1)(B) and (G) prohibit any “take” of threatened Oregon coast coho that is not authorized by an incidental take permit (issued under section 10 of the Act) or an incidental take statement (issued under section 7 of the Act) issued by NMFS or FWS. *See* 16 U.S.C. § 1539; 50 C.F.R. Parts 13, 17, & 222. Activities that

¹ Critical habitat for Oregon coast coho has been designated throughout Oregon’s coast range. *Id.*

significantly degrade habitat in ways that impair the spawning, rearing, migrating, sheltering, or other essential behavioral patterns of listed coho are therefore illegal.²

The ESA take prohibition applies to all “persons,” including state government officials. 16 U.S.C. § 1532(13) (defining “person” to include any “officer, employee, agent, department, or instrumentality of the Federal Government, of any State,” or of local governments). Accordingly, the ESA citizen suit provision authorizes suits against any person, including any governmental instrumentality or agency to the extent permitted by the Eleventh Amendment, to enforce the prohibition on take. *Id.* § 1540(g)(1); *see also Ex Parte Young*, 209 U.S. 123, 159-60 (1908) (authorizing lawsuits for prospective relief against state officials acting in violation of federal law); *Cascadia Wildlands v. Kitzhaber*, 911 F. Supp. 2d 1075, 1080-81, 1085-86 (D. Or. 2012).

As a result, ODF is responsible for any ESA violations caused by logging, road building, and log hauling in the Tillamook and Clatsop state forests. Additionally, you are liable for any actions that you authorize others to undertake. *Strahan v. Coxe*, 127 F.3d 155, 163 (1st Cir. 1997), *cert. denied*, 525 U.S. 830 (1998) (holding state liable for take of endangered right whales by virtue of its licensing of private commercial fishing with equipment that caused whale entanglements and deaths); *Loggerhead Turtle v. Cty. Council of Volusia Cty.*, 148 F.3d 1231, 1251 (11th Cir. 1998), *cert. denied*, 526 U.S. 1081 (1999); *Defenders of Wildlife v. Administrator, EPA*, 882 F.2d 1294 (8th Cir. 1989); *Cascadia Wildlands*, 911 F. Supp. 2d 1075.

As noted, to avoid liability ODF may obtain an incidental take permit (“ITP”) under ESA section 10. 16 U.S.C. § 1539(a)(1)(B). To receive a permit to take Oregon Coast coho pursuant to an ITP, you will, among other requirements, need to adopt measures for minimizing the take to the greatest extent practicable, as well as develop a plan that “conserv[es]” – *i.e.*, helps facilitate the recovery of – Oregon coast coho. *Id.* §§ 1539(a)(1)(B), (a)(2)(A); *Sierra Club v. U.S. Fish and Wildlife Serv.*, 245 F.3d 434, 441-42 (5th Cir. 2001) (“[c]onservation’ is a much broader concept than mere survival” because the “ESA’s definition of ‘conservation’ *speaks to the*

² NMFS previously promulgated 4(d) rules that carved out specific exceptions from the Section 9(a)(1) prohibitions for certain conservation activities. 50 C.F.R. § 223.203; 70 Fed. Reg. 37,160 (June 28, 2005) (finalizing amendments to the ESA 4(d) protective regulations for threatened salmonid ESUs). When NMFS listed Oregon coast coho as a threatened species in 2008, it also applied the Section 9(a)(1) prohibitions to unmarked members of Oregon coast coho that have an intact adipose fin, subject to 13 previously established limits. 50 C.F.R. § 223.203(b); 73 Fed. Reg. at 7829. None of the 13 limits apply to the activities described in this notice letter or limit the applicability of the take prohibition to Oregon coast coho. Indeed, in conjunction with the 4(d) rule, NMFS issued take guidance identifying the types of activities “most likely to cause harm and thus violate this rule” and made clear that among the activities that run a “high risk of resulting in take” are certain logging activities, particularly in riparian areas. 65 Fed. Reg. 42,472-42,473 (July 10, 2000) (finalizing rule governing take of 14 threatened salmon and steelhead evolutionarily significant units (ESUs)).

recovery of a threatened or endangered species”) (emphasis added). This plan, called a Habitat Conservation Plan (“HCP”), must delineate “the impact which will likely result from such taking” and the “steps [you] will take to minimize and mitigate such impacts ...” 16 U.S.C. § 1539(a)(2)(A).

Although ODF took substantial steps toward development of an HCP, it abandoned those plans in 2010.

II. Oregon State Forest Practices and Oregon Coast Coho

A. Management of the Tillamook and Clatsop State Forests

ODF and State and District foresters manage the Tillamook and Clatsop state forests under multiple tiered management plans pursuant to ORS 526.455(5) and 526.905.

At the top tier, the Northwest Forests Management Plan (“FMP”) is a long-term plan that governs all state lands in northwestern Oregon (and the Willamette Valley). *See* ODF, Northwest Oregon State Forests Management Plan (Apr. 2010) (“FMP”). State forests were originally to be managed as a mosaic of stand structures, with a goal of maintaining 40 to 60 percent of the forest as stands that are “layered” or have “old forest structure,” and the remainder as different-aged stands at different stages of recovery from logging or other disturbances. When it revised the FMP in 2010, however, ODF lowered the targets for layered and complex forest structure to 30 to 50 percent of the landscape, and reduced protection for species of concern.

Thus, while the FMP includes protections for riparian management areas that limit cutting directly adjacent to some streams – including a no-cut zone within 25 feet of any stream and various limitations on cutting within inner (25 to 100 feet) and outer (100 to 170 feet) riparian zones, depending on stream size and whether the stream is fish-bearing – these standards are considerably lower than those applied on Federal lands and particularly inadequate for small headwater streams. The FMP also identified “Salmon Anchor Habitats” (“SAHs”), *i.e.*, areas where additional protections for salmonids, including 100-foot no-cut buffers and limitations on the overall percentage of clear-cutting in basins, but this was eliminated during the 2010 revisions to the FMP. When NMFS evaluated these standards as part of the draft HCP, it found them to be insufficient to avoid harm to coho. *See* 75 Fed. Reg. 29,489, 29,500 (May 26, 2010) (“for purposes of this assessment, we are unable to conclude that the state forest management plans will provide for OC coho salmon habitat that is capable of supporting populations that are viable during both good and poor marine conditions”). Nevertheless, ODF adopted these revisions and abandoned the HCP.

The State Forester implements the FMP through 10-year implementation plans for each district. The Tillamook District adopted an implementation plan in 2009, and the Forest Grove and Astoria districts adopted implementation plans in 2011. The Tillamook District Implementation Plan (2009) (“Tillamook IP”) governs about 70 percent of the Tillamook State Forest, which is

home to 102 miles of fish-bearing streams, core coho salmon habitat, and “rugged, steep topography.” Tillamook IP at 14, 15, 55. As of 2009, about 38 percent of the Tillamook District consisted of Salmon Anchor Habitats. Tillamook IP at 14, 15, 55. The Tillamook IP plans for an increase in clear-cutting and road-building. *Id.* at 55, 56.

The Forest Grove District Implementation Plan (2011) (“Forest Grove IP”) governs the eastern one-third of the Tillamook State Forest and a small portion of the Clatsop State Forest. The Astoria District Implementation Plan (2011) (“Astoria IP”) largely covers the Clatsop State Forest. In these plans, which were released in 2011, ODF reiterated that it would not complete an HCP, and instead would continue to rely on a purported “take avoidance policy” and a “Species of Concern Plan” to protect coho salmon, while during the same time, liquidate a substantial percentage of the districts’ complex forest stands using clear-cutting and partial-cutting. Forest Grove IP at 2; Astoria IP at 3, 19.

The Tillamook IP calls for clear-cutting 800-3,150 acres and partial cutting 850-3,450 acres annually through 2019. Tillamook IP at 61. The Forest Grove IP calls for clear-cutting 300-1,300 acres and partial cutting 850-3,450 acres per year for 10 years. Forest Grove IP at 69. The Astoria IP calls for clear-cutting 285-1,615 acres per year annually through 2021. Also through these IPs, ODF set objectives to increase the total road mileage in the Tillamook, Forest Grove, and Astoria districts by 824 miles, to more than 5,000 miles in total, with a potential decommissioning of only up to 60 miles (in the Astoria District). Tillamook IP at 16; Forest Grove IP at 34; Astoria IP at 33.

In 2013, ODF revised the FMP to eliminate some of the standards in the Species of Concern plan. In particular, ODF adopted a new term, “Aquatic Anchor” (“AA”) sites, to refer to what had been designated as Salmon Anchor Habitats, and in the process, eliminated limits on clear-cutting that varied by watersheds within Salmon Anchor Habitats. Forest Grove IP at 16. These changes set the stage for increased clear-cutting, road-building, and log-hauling in watersheds where coho salmon occur.

B. Timber Sales

In addition to the FMP and implementation plans, ODF officials plan, authorize, and/or conduct logging; road construction and maintenance; and log-hauling activities pursuant to annual operations plans (“AOP”) for the Tillamook, Forest Grove, and Astoria districts. Most of the timber sales that are authorized in recent AOPs are clear-cuts.

1. Tillamook District

The 2017 Annual Operations Plan (“AOP”) for the Tillamook District prescribes logging of 2,751 net acres. This includes 611 acres of clear-cutting in Aquatic Anchors and 315 acres of partial cutting in Aquatic Anchors. Tillamook AOP (2017) at A-1. This AOP also includes approximately 15 miles of new road construction and 38 miles of road improvement. *Id.* at A-4.

The 2016 Annual Operations Plan for the Tillamook District prescribed logging of 3,089 net acres. Tillamook AOP (2016) at .pdf 49 (“Timber Harvest Operations – Financial Summary”). This included clear-cutting 1,478 acres in Aquatic Anchors. *Id.* at 8. The AOP included approximately 13.3 miles of new road construction and 40.4 miles of road improvement. *Id.* at .pdf 53 (Forest Roads Summary). This AOP included a net gain of 9.2 miles of new roads. *Id.* at pdf 21.

The 2015 Annual Operations Plan for the Tillamook District prescribed logging of 2,981 net acres. Tillamook AOP (2015) at Appendix B (Timber Harvest Operations – Financial Summary). This included clear-cutting 1,095 acres and partially cutting 66 acres in Aquatic Anchors. *Id.* at 14. This AOP included a net gain of 12.6 miles of new roads. *Id.* at 24.

The 2014 Annual Operations Plan for the Tillamook District prescribed logging of 3,131 net acres. This included clear-cutting 1,501 acres and partially cutting 932 acres in Aquatic Anchors. Tillamook AOP (2014) at 12. The AOP included the construction of 16.9 miles of new roads and 11.3 miles of road improvements. *Id.* at 20. This AOP included a net gain of 13.6 miles of new roads. *Id.*

The 2013 Annual Operations Plan for the Tillamook District prescribed partially cutting 1,234 acres and clear-cutting 2,071 acres. Tillamook AOP (2013) at 5. This AOP called for the construction of 18.75 miles of new roads and 13.4 miles of road improvement. *Id.* at 23.

The 2012 Annual Operations Plan for the Tillamook District prescribed clear-cutting 2,153 acres and partially cutting 1,030 acres. Tillamook AOP (2012) at 5. This AOP called for the construction of 24.7 miles of new roads and 6.9 miles of road improvement. *Id.* at 21.

2. Forest Grove District

The 2017 Annual Operations Plan for the Forest Grove District prescribes logging of 2,072 net acres. Forest Grove AOP (2017) at A-1. This includes clear-cutting 354 acres and partially cutting 363 acres in Aquatic Anchors. *Id.* at 12. Under this AOP, approximately 4.3 miles of new road will be constructed, and 31.3 miles of road will be improved. *Id.* at 18.

The 2016 Annual Operations Plan for the Forest Grove District prescribed logging of 2,056 net acres. Forest Grove AOP (2016) at Table B-1. This included clear-cutting 248 acres and partially cutting 634 acres in Aquatic Anchors. *Id.* at 13. This AOP allowed the construction of 8.2 miles of new road and 44.7 miles of road improvements. *Id.* at 18.

The 2015 Annual Operations Plan for the Forest Grove District prescribed logging of 2,125 net acres. Forest Grove AOP (2015) at Table B-1. This included clear-cutting 506 acres and partially cutting 723 acres in Aquatic Anchors. *Id.* at 12. This AOP allowed the construction of 12.3 miles of new roads and 22 miles of road improvements. *Id.* at 18.

The 2014 Annual Operations Plan for the Forest Grove District prescribed partially cutting 1,322 acres and clear-cutting 1,144 acres. This included clear-cutting 271 acres and partially cutting 439 acres in Aquatic Anchors. Forest Grove AOP (2014). This AOP allowed the construction of 16.1 miles of new roads and 31 miles of road improvements. *Id.* at 16.

The 2013 Annual Operations Plan for the Forest Grove District prescribed partially cutting 1,654 acres and clear-cutting 970 acres. Forest Grove AOP (2013) at 11. This AOP allows the construction of 17.8 miles of new roads and 11.4 miles of road improvements. *Id.* at 12.

The 2012 Annual Operations Plan for the Forest Grove District prescribed partially cutting 1,225 acres and clear-cutting 942 acres. Forest Grove AOP (2012) at 5. This AOP allows the construction of 14 miles of new roads and 15.2 miles of road improvements. *Id.* at 12.

The AOPs lay out and authorize particular timber sales and road construction or maintenance activities. ODF officials then auction off the timber sales and related road work.

B. Oregon Coast Coho Salmon

Coho spend the initial part of their life cycle rearing and feeding in streams and small freshwater tributaries and the rest of their life in estuarine and marine waters. Coho return to their natal streams to spawn at the end of their lives. As a result, coho require navigable passage back to their natal streams; stable gravel substrates for spawning and redd (nest) building; clear, clean water for spawning and feeding; pools for sheltering and feeding; and cool stream and river temperatures.

Oregon coast coho salmon populations have declined since European settlement, with steep declines since the 1950s, and habitat degradation from logging, roads, and log-hauling is largely attributed to this decline. *See, e.g.*, 60 Fed. Reg. at 38,011 (proposed Oregon coastal coho listing); 65 Fed. Reg. at 42,422 (“past and ongoing destruction of freshwater and estuarine habitats” are key factors for the decline of coho); Final ESA Recovery Plan for Oregon Coast Coho Salmon (*Oncorhynchus kisutch*) (Dec. 2016). In the final recovery plan for Oregon Coast coho salmon, NMFS reiterated ongoing concerns about the inadequacy of ODF’s rules to protect coho salmon from logging and road maintenance on state forest lands. Coho Recovery Plan at 3-22 to 3-24.

III. State Logging Activities in the Tillamook and Clatsop State Forests Significantly Increase Delivery of Sediment to Streams, Resulting in Take of Oregon Coast Coho.

By planning, approving, authorizing, and conducting activities that increase sediment loads in Oregon coast coho-bearing streams, you are causing take. Increased erosion and corresponding increases in sediment delivery and sedimentation contribute to channel simplification, including losses in the depth, frequency, and quality of pools and off-channel habitat critical for fish rearing (Murphy 1995). Increased sedimentation also leads to increased levels of fine sediment,

which greatly reduces salmonid survival from egg to fry (Sear et al. 2008, Jensen et al. 2009). Additionally, elevated sediment increases turbidity that impairs salmonid sight-feeding and cause gill damage, which are factors in mortality (Rhodes et al. 1994, Lloyd et al. 1987, Newcombe and Jensen 1996).

As noted in the Kilchis Watershed Analysis:

The negative effects of increased sediment generation include: fine sediment deposition in spawning gravels that can smother salmonid eggs, reduce intergravel oxygen, increased turbidity in the water column that can interfere with sight-feeding by salmonids, direct burial of macroinvertebrate insects and their habitat, and bed aggradation throughout the stream network including accumulation of sediment in low gradient channels causing bank erosion and impairing navigation (TBNEP, 1998b).

Increased sediment delivery also harms coho by leading to increased width/depth ratios in sensitive streams (Miller and Benda 2000; Hoffman and Gabet 2007), which increases water temperatures in the summer even without the loss of shade (Beschta et al., 1987; McCullough, 1999).

Sedimentation fills rearing pools, silts spawning beds, and decreases channel stability. Accelerated sedimentation increases fine sediments in spawning gravels, which reduces the survival rates of emerging salmon fry. Sedimentation also reduces the available rearing space for juvenile salmon due to increased cobble embeddedness. When sediment fills pools and creates broader, shallower channels, salmon feeding and rearing can be disrupted, vital over-wintering habitat can be lost, and stream temperature problems can be exacerbated.

A. Landslides from Logging and Road Work at High-Risk Sites Increases Sediment Delivery to Streams.

ODF officials plan, authorize, and conduct logging, road-building, log-hauling, and maintenance activities on high-risk sites that result in sediment deposition in coho-bearing streams. Logging high-risk sites significantly increases the risk of landslides and debris flows.

Clear-cutting – particularly in the rugged, steep topography of the Tillamook State Forest—dramatically increases the occurrence of shallow landslides and debris flows that deliver sediment to streams utilized by coho (Gresswell *et al.* 1979, Swanson et al. 1987, Benda and Dunne, 1997, Robison *et al.* 1999, Montgomery *et al.* 2000, Guthrie 2002, May 2002). Studies have found that landslides are anywhere from 2 to 24 times more frequent following logging as compared to forested areas (Swanson & Lienkaemper 1978, Guthrie 2002). During infrequent, high magnitude (>100-yr recurrence interval) as well as frequent, low magnitude (2 to 10-yr recurrence interval) storms, shallow landslide densities are higher on clearcut than forested slopes (Montgomery et al., 2000; Turner et al., 2010).

Mass wasting events also deliver sediment to streams. Compared to landslides in forested areas, landslides in clear-cuts are more likely to deliver sediment to streams and impair water quality with episodic and chronic sedimentation (May 2002, Guthrie 2002). Debris flows in clear-cuts travel farther than debris flows in forested environments (Ketcheson and Froelich 1978, Guthrie 2002, May 2002), which increases the likelihood of sediment delivery to streams and channel impacts.

Sediment delivery to streams via mass wasting events drastically alters aquatic habitat. Where landslides reach coho streams, they can cause mortalities and/or impair coho behavioral functions. The delivery of sediment to salmon-bearing reaches smothers salmon eggs, adversely affects salmon migration, and severely degrades spawning and rearing habitat (Spence et al. 1996). Debris flows elevate turbidity downstream and negatively affect aquatic species (Cederholm & Lestelle 1974). Turbidity reduces the distance within which juvenile coho can detect prey (Spence et al. 1996).

By authorizing and conducting logging, road building, and log-hauling on high-risk or slide prone sites you are causing take of coho salmon from the resulting sediment deposition in coho-bearing streams.

B. Log Hauling on Hydrologically Connected Roads Increases Sediment Delivery to those Streams.

ODF officials plan; authorize; and conduct road construction, improvement, and maintenance; and authorize the use of forest roads for log-hauling. These activities increase sedimentation and stream turbidity, detrimentally affecting stream health and aquatic habitat (Brown and Krygier, 1971, Furniss et al. 1991, Trombulak and Frissell 2000, Gucinski et al. 2001, Ziegler et al. 2001).

In the western United States, roads are the primary source of sediment from forest management activities (Reid et al. 1981, Ketcheson and Megahan 1996). Much forestry-related sediment is delivered episodically via stormwater runoff or road-related landslides. Roads, road construction, and logging all cumulatively elevate peak flows, erosion, sediment delivery, turbidity, and sedimentation (Reid et al. 1981, Rhodes et al. 1994, Beschta et al. 2000, Jones et al. 2000, Trombulak and Frissell 2000).

Much of the road system in the Tillamook and Clatsop state forests was constructed decades ago. Forest Grove AOP (2013) at 12 (“The district’s primary road network is an established system that has been in place for about twenty years.”). These logging roads were intentionally designed to discharge stormwater directly into streams, utilizing ditches, channels, and culverts to move stormwater off the road and into the existing stream network. Consequently, a significant amount of the road network in most watersheds remains hydrologically connected to streams (e.g. Duck Creek Associates, Inc. 2008). Roads on steep slopes or next to streams pose the greatest risk of sediment delivery and the resulting adverse impacts to stream habitats. Moreover, “the single greatest factor affecting generation of sediment from road surfaces is the

amount of traffic” (Reid and Dunne, 1984). The greater the disturbance area and proximity to streams, the greater the risk of sediment delivery.

You are causing take of Oregon coast coho salmon by authorizing and/or participating in the construction of forest roads, by maintaining a road system with hydrologically connected roads that are delivering sediment to coho-bearing streams, and by authorizing log-hauling on these roads. Sediment covers redds, killing eggs and/or juvenile fish, and reduces the utility of the habitat for feeding, breeding, and sheltering, thereby causing injury or death to coho.

C. Inadequate Riparian Buffers Allow Increased Sediment Delivery to Streams.

ODF officials are causing take of Oregon coast coho salmon by planning and authorizing logging in areas near small and medium fish-bearing streams and small perennial and seasonal nonfish-bearing streams. Logging in these areas destabilizes soils and hillsides, accelerating sediment delivery and increasing sedimentation. Statistically significant increases in suspended sediment follow clear-cutting of stream-side areas (Jackson et al. 2001, Zegre et al. 2008). Streams that have been clear-cut exhibit chronic sediment delivery and deposition, with depths of fine sediment several centimeters thick (Jackson et al. 2001, Rashin et al. 2006). In fact, the length of the unbuffered riparian zone in otherwise clear-cut basins is a good predictor of sediment yield that is independent of road area (Lewis et al. 2001).

Riparian buffers filter surface water flow from upland areas and limit ground disturbance, both of which are important processes that prevent chronic sediment delivery to streams (Gomi et al. 2005). Sufficient buffers can prevent direct physical disturbance and sediment and slash delivery to streams if they include limits on yarding practices (Rashin et al. 2006, Jackson et al. 2001). If riparian buffers are not implemented for non-fish-bearing streams, they become a source of excess sediment to perennial, fish-bearing channel networks as sediment is transported downstream (Gomi et al. 2005, Rashin et al. 2006). Thus, the effectiveness of the overall system of riparian management zones in maintaining sufficiently low turbidity is diminished at a watershed scale due to inadequate buffers in headwater basins (Rashin et al. 2006).

Clear-cutting riparian areas also increases the probability of debris flows and sediment delivery to streams due to the accumulation of slash debris. In western Washington, Jackson et al. (2001) showed that 94 percent of the length of headwater streams was covered or buried by up to 2.3 meters of slash debris after being clear-cut. Many landslides in clear-cut units occur adjacent to streams and incipient drainages loaded with slash debris (Gresswell et al. 1979). Small, mobile slash debris introduced into stream channels creates jams that are more susceptible to catastrophic failure than larger debris accumulations (MacDonald and Ritland 1989).

By planning and authorizing logging of riparian areas, you are causing take of coho salmon.

IV. State Logging Activities in the Tillamook and Clatsop State Forests Significantly Reduce Delivery of Large Woody Debris to Streams and Cause “Take” of Oregon Coast Coho.

By planning and authorizing logging in riparian areas and areas near streams, ODF officials are diminishing the abundance of large woody debris in coho-bearing streams and causing take. Loss of large woody debris is widely recognized as one of the primary factors in the loss and degradation of coho habitat, and it was named as one of the leading reasons the species needed protection under the Endangered Species Act. *See* 60 Fed. Reg. at 38,024; 69 Fed. Reg. 33,142; 69 Fed. Reg. at 74,597.

Large woody debris serves a number of critical roles in the formation and maintenance of coho habitat. It is considered a “primary determinant” of channel form in streams, creating cover and pools that provide essential winter rearing habitat for juvenile coho (Bilby and Bisson 1998, Sedell et al. 1988). By slowing flow, creating stair steps and waterfalls, and stabilizing banks, large wood creates pool habitat where juvenile coho can maintain position, feed, and find cover from predators while expending minimal energy (Bilby and Bisson 1998). Large woody debris also stores sediment and organic matter that improves water quality and is an important food source for macro-invertebrates, which are in turn a source of food for juvenile coho (Bilby and Bisson 1998).

Coho abundance is significantly lower in streams where woody debris has been removed by clearing or logging (Dolloff 1986, House and Boehne 1986, Fausch and Northcote 1992, Bilby and Bisson 1998). House and Boehne (1986), for example, compared two sections of Tobe Creek—which is just south of the Tillamook State Forest and flows from the Oregon Coast Range to the Pacific Ocean—including a “young-alder stream section logged and cleared of large debris 20 years ago” and a “mature mixed-conifer section unlogged and containing large amounts of large woody debris,” and concluded that “three times as many coho salmon and trout fry were living in the mature-conifer stream section,” finding “a positive correlation between coho salmon numbers and the presence of large woody debris.”

The primary limitation of large woody debris is caused by logging, particularly in riparian areas. Logging in riparian areas decreases large woody debris in streams by removing the source of woody debris; reducing the size of large woody debris and therefore their longevity in streams; and increasing the frequency of debris flows, which can remove large woody debris from streams (Swanson and Lienkaemper 1978, Ralph et al. 1994, Bilby and Bisson 1998).

Numerous studies have found a negative association between logging and the amount and size of large wood in Pacific Northwest streams (Bisson et al. 1987, Bilby and Ward 1991, Ralph et al. 1994, Bilby and Bisson 1998, Burnett et al. 2006). Swanson and Lienkaemper (1978), for example, determined that “management activities also reduce stream debris loading by thinning and harvest operations which remove standing trees, the future source of large debris for streams.” In particular, they point to logging in headwater streams as problematic.

Ralph et al. (1994) found that large woody debris had a smaller average diameter and that it was more often found above the water level in summer in watersheds with moderate to intensive logging compared to watersheds with old growth forests. This resulted in a reduction in pool frequency and depth and an increase in fast water habitats, which are all harmful to salmonids (Ralph et al. 1994).

According to an “Independent Multidisciplinary Science Team” (“IMST”) the Governor of Oregon appointed, levels of large woody debris on non-Federal lands in Oregon—including the Tillamook and Clatsop state forests—have been lower than necessary for adequate salmon habitat, and current management is not correcting this situation.³ IMST (1999) found that existing riparian buffers are not adequate for wood recruitment because too much cutting of large trees is allowed within buffers; buffers are not consistently applied to all streams, namely non-fish bearing and intermittent streams; and because upland areas with unstable slopes are not provided sufficient protection.

ODF has authorized and/or carried out logging, road building, and road maintenance activities in the Tillamook and Clatsop state forests that have caused a lack of large woody debris, and its current management continues to limit input of additional woody debris, which is reducing winter survival and otherwise harming coho. Future logging in riparian and unstable upslope areas of the Tillamook and Clatsop state forests will harm coho salmon in violation of the Endangered Species Act.

³ IMST found that:

Surveys of about 2,000 stream miles on non-Federal lands show there are fewer pieces of large wood in the stream channels than specified in the current Oregon benchmarks. About 40 percent of the stream-miles surveyed are considered adequate or good with regard to the presence of large wood, but 60 percent are considered poor. Probably more important to the long-term recovery of wild salmonids is the finding that 94 percent of the riparian areas (a potential source of future large wood in streams) are themselves ranked as poor with regard to the presence of large conifers (ODF 1999). We conclude that Oregon streams and adjacent forests currently contain much lower levels of larger wood than they did historically, and under the current management practices, the potential for recruitment will not result in its replenishment.

IMST (1999).

V. Oregon Department of Forestry Officials Plan, Authorize, and Conduct Logging, Hauling, and Road Construction and Maintenance Activities on the Tillamook and Clatsop State Forests that Take Coho Salmon.

You are causing, and will continue to cause, unlawful take of coho by creating and adopting your various forest plans, offering specific timber sales, building roads, maintaining roads, and allowing travel and hauling on hydrologically connected roads. Specifically, you have planned, continue to plan, and/or offer recent timber sales in landslide-prone areas in the Tillamook and Clatsop state forests where coho are present. You also plan for logging roads in landslide-prone areas and/or authorize or conduct road maintenance in landslide-prone areas where coho are present. These logging and road activities result in various mass wasting events throughout the forests. These events deposit sediment in coho-bearing streams with deleterious consequences for the survival of coho redds and juveniles, as well as the habitat upon which coho depend for spawning, rearing, and sheltering. For example, the upper Cook Creek Road, above Tin Shack Road, in the Tillamook District “was severely damaged during a significant rain event in November 2012.” Tillamook AOP (2014) at 21. The Forest Grove District is still repairing damage that resulted from 2007 storm events. Forest Grove AOP (2013) at 12. Furthermore, your logging authorizations and road construction in riparian areas are causing and contributing to the loss of large woody debris in coho-bearing streams.

Additionally, ODF officials have planned and continue to plan timber sales that require the use of hydrologically connected roads. Use of these segments of the road system also results in the deposition of sediment and other pollutants to coho-bearing streams.

Logging, road building and maintenance, and log-hauling in slide-prone areas modifies coho habitat to such an extent that it causes injuries or death and otherwise results in take of coho in particular watersheds. These timber sales, road work activities, and resulting log-hauling that ODF officials permit will continue to kill, injure, harm, harass, and otherwise take coho salmon by contributing sediments to streams, increasing risk of landslides, and removing large woody debris, which is a key component of coho salmon habitat.

A. Take of Coho in the Wilson Management Basin

The Wilson River Basin is the largest in the Tillamook District, covering 65,998 acres of state forest. Tillamook IP (2009). ODF measured the hydrologic connectivity for the Wilson watershed at 16 percent. *Id.*⁴ Salmon Anchor Habitats and Aquatic Anchors have been designated in the Little North Fork Wilson, Cedar Creek, and Ben Smith sub-basins” in the Wilson basin. Tillamook IP (2009). Additionally, “[t]he Wilson River basin and the Trask River Basin have the heaviest OHV use and the majority of the designated OHV trails (180 miles) on the district.” *Id.* The Upper Wilson, Middle Wilson, Lower Wilson River, North Fork Wilson

⁴ Only two watersheds have been measured or had results published.

River, and Jordan Creek watersheds contain designated critical habitat for Oregon coast coho, ODFW mapped coho habitat, and Oregon coast coho.

In the Wilson Management Basin, since our 2014 NOI, you have planned at least 13 additional timber sales or units of timber sales in landslide-prone areas. These include but are not limited to: Ax Ridge, Between Wolves, Bling Ridge, Tres Hembres, Broken Arrow, Lobo Canyon, Knot Berry, Odin's Blade, Red Buzzard, High Standards, Feldshaw, and The Gilmore. We provide notice regarding these and any other similar past, present, or future similarly situated sales. Additionally, units of the Between Wolves, Bling Ridge, Three Little Ridges, Broken Arrow, Lobo Canyon, Odin's Blade, Red Buzzard, High Standards, and The Gilmore and any other sales using similar routes require travel and hauling on hydrologically connected road segments.

B. Take of Coho in the Trask Management Basin

The Trask River Basin is the third largest in the Tillamook District, encompassing 56,380 acres of state forest. Tillamook IP (2009). Additionally, “[t]he Wilson River basin and the Trask River Basin have the heaviest OHV use and the majority of the designated OHV trails (180 miles) on the district.” *Id.* Salmon Anchor Habitats/Aquatic Anchors have been designated in the Elkhorn and East Fork of the South Fork Trask River in the Trask Basin. *Id.* “Coho salmon core areas are located in the North Fork, South Fork, and East Fork of the Trask River.” *Id.* The Upper Trask River, East Fork of the South Fork Trask, and South Fork Trask River watersheds contain designated critical habitat for Oregon Coast coho, ODFW mapped coho habitat, and Oregon Coast coho.

In the Trask Management Basin, during the last three years you have planned at least nine timber sales or units of timber sales in landslide-prone areas. These sales or units include but are not limited to: Clay Pigeon, Clear Silence, Fireworks, King Kong, The Simms, Brimstone, Doghouse, Little Bumps, Rocky Road, and Schetky Anew. We provide notice regarding these and any other similar past, present, or future similarly situated sales. Additionally, units of the Clay Pigeon, King Kong, The Simms, Doghouse, Little Bumps, and Rocky Road sales and any other sales using similar routes require travel and hauling on hydrologically connected road segments, which also entails prohibited take.

C. Take of Coho in the Rogers Management Basin

The Rogers Basin is used heavily for recreation and encompasses 20,834 acres of state forest. Forest Grove IP (2011). “There are four important salmonid streams” in this basin: “Devils Lake Fork, Elliot Creek, Deyoe Creek, and South Fork of the Wilson” and “[a]pproximately 6,000 acres of the Devils Lake Fork Wilson River Aquatic Anchor is located in the eastern portion of this basin.” *Id.* The Lower Devils Lake Fork of the Wilson River and South Fork Wilson River watersheds contain designated critical habitat for Oregon coast coho, ODFW mapped coho habitat, and Oregon coast coho.

In the Rogers Management Basin, during the last three years you have planned timber sales or units of timber sales that require travel and hauling on hydrologically connected road segments including. These include but are not limited to Cedar Flats, Chicken of the Tree, Shining C, Camp View, and Woods Way.

D. Take of Coho in the Kilchis Management Basin

The Kilchis Management Basin encompasses 33,695 acres of state forest in the Tillamook District. This basin includes core salmon areas and designated Salmon Anchor Habitat/Aquatic Anchors. Tillamook (2009). The Middle Kilchis basin and the North Fork Kichis watersheds contain designated critical habitat for Oregon coast coho, ODFW mapped coho habitat, and Oregon coast coho.

In the Kilchis Management Basin, during the last three years you have planned the Old Bungee timber sale, or units thereof, in landslide-prone areas. We provide notice regarding this and any other similar past, present, or future similarly situated sales. Additionally, units of the Old Bungee sale and any other sales using a similar route(s) require travel and hauling on hydrologically connected road segments.

E. Take of Coho in the Lower Nehalem Management Basin

The Lower Nehalem Management Basin is the second largest in the Tillamook District, totaling 59,634 acres of state forest. Salmon Anchor Habitat/Aquatic Anchors have been designated in the Foley Creek, Cook Creek and South Fork Salmonberry River sub-basins; core coho salmon areas are located within this basin; and the Salmonberry sub-basin is recognized as an important wild fish stream. Tillamook IP (2009). The Lower Nehalem Management Basin contains designated critical habitat for Oregon Coast coho and ODFW mapped coho habitat.

In the Lower Nehalem Management Basin, timber sale units, including from the Red Shack and High N Dry timber sales, have been planned in landslide-prone areas. We provide notice regarding these and any other similar past, present, or future similarly situated sales.

CONCLUSION

This notice provides the grounds upon which the Parties may file suit. The Parties intend, at the close of the 60-day notice period, to file a citizen suit against you under Section 11 of the Endangered Species Act for these and any and all similar violations, through which we will seek declaratory and injunctive relief, as well as fees and costs.

The Parties remain willing to discuss settlement terms and effective remedies for the violations in this letter during the 60-day notice period. If you wish to pursue such discussions in the absence of litigation, please contact me or my counsel (cc'd below).

Sincerely,

David Noah Greenwald
Endangered Species
Program Director
Center for Biological
Diversity

Josh Laughlin
Executive Director
Cascadia Wildlands

Glen Spain
Executive Director
Pacific Coast Federation of
Fishermen's Associations
Institute for Fisheries
Resources

cc: Amy R. Atwood, Endangered Species Legal Director, Center for Biological Diversity
Wilbur Ross, Secretary, Department of Commerce
Samuel D. Rauch, III, Assistant Administrator for Fisheries, Department of Commerce
Ryan Zinke, Secretary, Department of Interior
Jim Kurth, Acting Director, U.S. Fish and Wildlife Service

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