



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office  
510 Desmond Dr. SE, Suite 102  
Lacey, Washington 98503

JUN 29 2015

In Reply Refer To:

**13410-2011-F-0067-R002**

X ref: 13410-2011-F-0067-R001  
13410-2011-F-0067

Jennifer Eberlien  
Mt. Baker-Snoqualmie National Forest  
2930 Wetmore Avenue, Suite 3A  
Everett, Washington 98021

Dear Ms. Eberlien:

Subject: Monte Cristo CERCLA Project

This letter transmits the amended Incidental Take Statement for the Monte Cristo CERCLA Project and fulfills the requirement for reinitiation of formal consultation under section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA).

The Mt. Baker-Snoqualmie National Forest (Forest) submitted changes to the project description and indicated that the determination of “likely to adversely affect” for northern spotted owl (*Strix occidentalis caurina*) (spotted owl), marbled murrelet (*Brachyramphus marmoratus*) (murrelet), bull trout (*Salvelinus confluentus*), and designated critical habitat for these three species remains unchanged, and the determination of “not likely to adversely affect” for gray wolf (*Canis lupus*) and grizzly bear (*Ursus arctos horribilis*) also remains unchanged. Your May 28, 2015 request for reinitiation was received in our office on June 1, 2015.

### Consultation History

The U.S. Fish and Wildlife Service (Service) completed formal consultation on the Monte Cristo CERCLA Project on September 16, 2011. Information concerning the status of the spotted owl, murrelet and bull trout, the environmental baseline, the effects of proposed action, and the cumulative effects were analyzed in the 2011 Biological Opinion (USFWS 2011, Service reference number 13410-2011-F-0067). The statuses of these species, the environmental baseline, and the cumulative effects have not substantially changed since 2011 and are still adequately described in that biological opinion. That consultation also included our concurrence that the proposed project is not likely to adversely affect gray wolves and grizzly bears.

The Monte Cristo CERCLA Project was reinitiated due to a Final Rule (77 FR 71876) for new locations of spotted owl critical habitat on January 9, 2013. Formal consultation was concluded on January 18, 2013 (USFWS 2013a, Service reference number 13410-2011-F-0067-R001), with the conclusion that the proposed project was not likely to destroy or adversely modify critical habitat for the spotted owl.

The Forest requested reinitiation of formal consultation for the Monte Cristo CERCLA project by letter dated May 28, 2015, and received in our office on June 1, 2015. Formal consultation was therefore initiated on June 1, 2015. The Service received additional information from the Forest by email on June 4, 2015.

### **Summary of the Proposed Action**

The majority of the project description remains unchanged, and is included in the 2011 biological opinion. The following is a summary of the changes that occurred during project implementation since 2011, and then a summary of the changes that the Forest proposed in their May 28 letter.

The Forest made several adjustments to the proposed action as the access route was designed and constructed. Presumably since the adjustments were similar to the plan that was originally consulted on but of lesser magnitude, the Forest did not reinitiate consultation. Changes implemented since 2011 included but were not limited to: 1) a shift in road design from a Maintenance Level 2 Forest Service specified road to a route that is narrower and incorporates steeper grades (resulting in fewer large diameter trees removed than anticipated), and 2) road alignment shifts with more of the constructed route following an existing road segment at Haps Hill.

The Forest is proposing changes to previously consulted-on operations to complete the Monte Cristo CERCLA Project. Proposed changes include the following:

- Helicopter landing – The location of the helicopter landing and refueling site would shift from the Monte Cristo town site to the first opening along the access route (Station 13+00).
- Slash disposal – The primary disposal of slash at the repository site would be by mechanical chipping; however any tree waste material not conducive to chipping would be disposed of by piling and burning.
- New log decking location – The logs resulting from the repository clearing would be decked primarily at the second opening (open rock area) along the access route approximately 0.25 mile from the Mt. Loop Scenic By-way (USFS 2015, p. 5).
- Time extension – There would be an extension of the time frame for project operations from two years to three years.

### Helicopter Landing

The Forest evaluated various helicopters for lift capabilities to ensure efficient operations in the clean-up operations at the Monte Cristo town site and in the wilderness. They determined that a 10,000 lb lift machine was the best choice for efficient removal of waste rock from Pride of the Woods to the Repository. Therefore, the use of a Columbia Vertol 107-II (10,000 lb payload capacity), or equivalent load-capacity helicopter, would need a tanker sized refueling truck. However, during first year operations, there was the decision for a design change in the new road construction (section from the Mt. Loop Scenic By-way to the Monte Cristo work site) which shifted the access road from a Level 2 road to a narrower route. This new route does not accommodate the size of a fuel truck needed for the large helicopter operations projected to be in the Monte Cristo town site. Therefore, the first opening along the new access route (Station 13+00, where the campsite was located during the 2013/2014 season) was selected for the helicopter re-fueling location. A Columbia Vertol 107-II would likely be used to complete the work. The Forest may still need to switch to a larger helicopter (Chinook 47d), and would like the Service to consult on the effects of the larger helicopter on listed species.

Modifications to the first opening for safe helicopter operations would include the removal of eight live trees in an isolated island with diameters ranging from 9.5 inches to 36.7 inches diameter at breast height. These trees were field reviewed on March 26, 2015, and no limbs of sufficient size or character for nesting murrelets and no cavities for nesting spotted owls were identified. The trees were isolated from the surrounding forest, with trees having an open canopy.

The 40-foot by 40-foot landing pad area will not require any additional excavation and fill. An area approximately 10-foot by 15-foot on the northwest corner of the clearing will be graded to provide safer vehicle access around what is currently a very tight corner. Vegetation in this area is limited to low brush and vine maple.

Helicopter flight operations would be restricted to occur from 2 hours after sunrise and 2 hours before sunset. Helicopter work is scheduled for approximately a month with 12 hour work days. Contingencies may occur during operations at the Monte Cristo work site, resulting in the helicopter landing a little late in the day (after 2 hours before sunset), but this would be the exception versus operating procedure. Work around the landed helicopter (pre-flight check, fueling, etc.) may occur before 2 hours after sunrise and after 2 hours after sunset. The flight path for the helicopter when taking off and landing would utilize the open avalanche chute area adjacent to the landing zone. Helicopter flights (outside of take-off and landing) would be at least 500 feet above the canopy.

### Slash Disposal

The biological assessment (USFS 2011) identified the need to clear trees from up to 3 acres of land at the repository site. The clearing of the repository site would entail cutting trees, moving trees to deck sites, and clean-up of the branches or resulting slash material from felling. The primary method for slash disposal would be through mechanical chipping of the tree waste material; however, material not conducive to chipping would be piled for burning in the

repository location. Any pile burning would occur after September 23, outside of the murrelet and spotted owl breeding season. The chipping, slash piles, and burning would be located outside of critical habitat for the spotted owl and murrelet.

### New Log Decking Location

The roadway plans used in the preparation of the biological assessment (USFS 2011) displayed open areas along the access route that would be “staging areas,” used for equipment, support operations, and log decks. However, due to the implemented change in the access route to utilize more of the previous ground-disturbed route, the access road now crosses a natural rock opening (referred to as the second opening where the saw mill operated during the 2014 season). This area, along with the first opening, were used as “staging areas” and are now proposed for the helicopter re-fueling site and log deck area. Other openings along the road (shown as staging areas in the roadway plans) (USFS 2015, p. 5) would also be considered for decking logs if so needed. The use of the second opening as the primary log deck area would not result in the need for additional clearing of trees.

### Time Extension

The Monte Cristo CERCLA Project was originally proposed to be completed in two years. Unforeseen delays prevented the Forest from completing the project within two years, and therefore the Forest is now proposing to operate in a third year to complete the proposed action. Many of the aspects of the proposed action will still only occur a single time (e.g., tree felling, bridge construction, mine reclamation, etc.) but certain activities to complete those aspects (e.g., trucks driving in the action area, presence of workers, operation of heavy equipment, etc.) would occur for an additional year (specifically, one summer/fall work season longer than originally anticipated).

### **Effects to Spotted Owls**

The following is an analysis of the anticipated effects resulting from changes to the proposed action.

#### Effects from Helicopter Landing

In the 2011 biological opinion, the Service concluded that 80 acres of suitable habitat for spotted owls would be exposed to disturbance from vehicles and heavy equipment (USFWS 2011, p. 20). The proposed new helicopter landing may affect spotted owls by creating loud noise and rotor wash at the landing site and along the flight path between the landing site and the mine reclamation areas. The Forest estimated that the helicopter work would expose 25 acres of suitable habitat to noise greater than 92 decibels (A-weighted) (dBA) and 2.75 acres of suitable habitat to rotor wash (USFS 2015, p. 3; Reed, *in litt.* 2015). In previous consultations, we have analyzed the effects of disturbance on spotted owls, and concluded that adverse effects may occur when noise and human activity causes a spotted owl to flush from a nest during the early nesting season (USFWS 2013b, p. 86) or when large helicopters (e.g., Chinook 47d) fly within 265 yards of known occupied spotted owl nest tree or suitable nest trees in unsurveyed nesting

habitat (USFWS 2013b, p. 82). We have also analyzed the effects of rotor wash on spotted owls, and concluded that adverse effects may occur when a hovering Chinook 47d helicopter is within 100 yards of known occupied spotted owl nest trees or suitable nest trees in unsurveyed nesting habitat (USFWS 2013b, p. 82). However, the 2011 biological opinion also considered that the nearest spotted owl activity center is 0.5 mile away from the road that would be used for the project and that there are no known potential spotted owl nest trees near that road. The actual road alignment as it was built is still 0.5 mile away from the nearest spotted owl activity center and there are no known potential spotted owl nest trees near the road. With those considerations, the determination in the 2011 biological opinion was that human activity and project activities that create noise greater than 92 dBA were extremely unlikely to flush a spotted owl from a nest because a spotted owl nest was extremely unlikely to be present (USFWS 2011, p. 20). We anticipate that, even with the additional area that would be disturbed by the new helicopter landing, nesting spotted owls are still unlikely to be present and exposed to project activities during the early nesting season. Similarly, we anticipate that rotor wash at the proposed helicopter landing is extremely unlikely to affect a spotted owl nest.

The Forest is proposing to remove eight trees to create a safe helicopter landing. Since these trees occur in a small isolated patch and none of the trees have structural characteristics sufficient for spotted owl nesting, we anticipated that effects to spotted owls from clearing them for the helicopter landing would be insignificant.

#### Effects from Slash Disposal

Slash disposal by chipping, piling, and burning may affect spotted owls by exposing them to smoke. However, the Forest's proposed action includes a conservation measure that would delay any slash pile burning until after September 1. At that time of year, adult spotted owls and recently fledged spotted owls would easily move away from the effects of smoke. Therefore, disruptions to normal spotted owl behaviors would be insignificant.

#### Effects from New Log Decking Location

Log removal from the repository and log decking at the first or second opening would not cause effects to spotted owls that were not considered in the 2011 biological opinion.

#### Effects from Time Extension

Construction/reclamation activities would occur for a duration one year longer than originally analyzed in the 2011 biological opinion. The increased duration of the action would not increase the habitat modification component of the proposed project, but it would increase the potential for disturbance from noise and human presence. In the 2011 biological opinion, we concluded that human activity and project activities were extremely unlikely to flush a spotted owl from a nest because a spotted owl nest is extremely unlikely to be present (USFWS 2011, p. 20). We anticipate that a third year of project duration would not significantly increase the probability of exposure, and therefore that the noise and human activities associated with the proposed activities would still be extremely unlikely to affect spotted owls.

## Effects to Marbled Murrelets

The following is an analysis of the anticipated effects resulting from changes to the proposed action.

### Effects from Helicopter Landing

As described above, the Forest is proposing to use the first opening along the new access route to operate as a helicopter landing for a ship as large as a Chinook 47d helicopter. The 2011 biological opinion did not address the effects of helicopter landing because at that time helicopter use and landing was only proposed for areas outside of suitable habitat for murrelets (high elevation areas). The proposed new helicopter landing may affect murrelets by creating loud noise and rotor wash at the landing site and by creating loud noise along the flight path between landing site and mine reclamation areas. Flights would occur at least twice daily for multiple weeks during the 2015 summer work season. The new helicopter landing may also affect murrelets as a result of tree removal.

### *Disturbance*

In previous consultations, we have analyzed the effects of disturbance on murrelets, and concluded that adverse effects may occur when project noise or activity causes a murrelet to become so agitated that it flushes away from a nest or perch within the vicinity of a nest site (including delay or avoidance in nest establishment), or aborts or delays a feeding attempt during incubation or brooding of nestlings (USFWS 2013b, p. 101). These responses are considered significant disruptions of normal behaviors that result in a likelihood of injury to murrelets. A flush from a nest site includes movement out of an actual nest, off of the nest branch, and away from a branch of a tree within suitable habitat during the nesting season. Such events are considered significant because they have the potential to result in reduced hatching success, fitness, or survival of juveniles and adults.

Specifically, we previously concluded that the extent of significant disturbance caused by a Chinook 47d helicopter when landing, hovering, and taking off is likely to have radius of 265 yards (based on the 92 dBA contour) (Newman et al. 1984, *in* USFWS 2013b, p. 103). Additionally, we anticipated that murrelets may be adversely affected by rotor-wash within a 100-yard radius of a Chinook 47d helicopter when landing, hovering, or taking off (USFWS 2013b, p. 103). However, when Chinook 47d helicopters were flying overhead, Newman and others (1984, Appendix A) measured lower maximum noise levels than when the same helicopter was landing, hovering, and taking off. Using the same methodology we used to calculate the extent of disturbance for landing, hovering, and taking off (USFWS 2009, pp. 46-48; USFS 2009), we calculated the 92 dBA contour for Chinook 47d overflights and concluded that the extent of significant disturbance was likely to have a radius of 324 feet (Appendix A).

The proposed helicopter work may disturb murrelets within 265 yards of the new landing site. Since the proposed helicopter flights (outside of take-off and landing) would occur at least 500 feet above the canopy (Reed, *in litt.* 2015), we conclude that noise from the helicopter would not significantly affect nesting murrelets. The flight path for the helicopter when taking off and

landing would utilize the open avalanche chute area adjacent to the landing zone, so not all habitats within the helicopter glide path or operating radius are suitable nesting habitat for murrelets. Based on aerial photograph and review of habitat within 265 yards of the helicopter fueling site, the Forest estimated that there would be a potential for noise disturbance within 25 acres of mature to old forest adjacent to the helicopter landing (USFS 2015, p. 3). We agree that any murrelets within these 25 acres of mature to old forest are reasonably certain to be disturbed by helicopter operations.

The Forest has a proposed conservation measure limiting most helicopter flights to the period of time between 2 hours after sunrise and 2 hours before sunset. Unavoidable contingencies (technical difficulties, unanticipated weather, etc.) may result in some helicopter flights during restricted hours. Given the complicated nature of CERCLA cleanups in wilderness areas, we anticipate that at least one unavoidable contingency is reasonably certain to occur. We are therefore considering the adverse effects of some helicopter flights during restricted hours in this analysis. However, even when the proposed helicopter work adheres to the period of time between 2 hours after sunrise and 2 hours before sunset, this conservation measure would reduce but not eliminate the probability of interrupting feeding of nestlings (USFWS 2013b, Appendix A).

The Forest has proposed on-the-ground work around the landed helicopter (pre-flight check, fueling, etc.) that may occur earlier or later than the period of time between 2 hours after sunrise and 2 hours before sunset. However, we do not anticipate that work at this one location would significantly increase the risk of exposure described above because the proposed helicopter landing is located outside of immediate suitable murrelet habitat (over 35 yards to suitable nesting trees), much of the vicinity (within 100 meters) is an avalanche chute, and much of the vicinity is already within 100 meters of the Mountain Loop Highway (a high-use open road).

#### *Rotor Wash*

As described above, murrelets may be adversely affected (injury or mortality) by rotor-wash within a 100-yard radius of a Chinook 47d helicopter when landing, hovering, or taking off (USFWS 2013b, p. 103). Rotor wash is a column of high velocity air forced downward by a helicopter's blade rotation (Slijepcevic and Fogarty 1998, p. 1). Helicopter rotor wash can cause saplings, decaying trees, and loose debris from tree tops to fall, and can create hazardous conditions from dust and flying debris underneath the ship (WCB 2005, p. 19). The Forest estimated that 2.75 acres of suitable habitat for murrelets would be exposed to significant rotor wash during the nesting season in 2015 (Reed, *in litt.* 2015). Because murrelets occupy Washington State forests at a very low density, we cannot be reasonably certain that murrelets would be exposed to these adverse effects in only 2.75 acres of suitable habitat.

### *Tree Removal*

The Forest is proposing to remove eight trees to create a safe helicopter landing. Since these trees occur in a small isolated patch, none of the trees have structural characteristics sufficient for murrelet nesting, none of these trees have intermingled branches with other trees that have structural characteristics sufficient for murrelet nesting, and edge effects to other forest stands would not occur, we anticipate that effects to murrelets from clearing these trees would be insignificant.

### Effects from Slash Disposal

Slash disposal by chipping, piling, then burning may affect murrelets by exposing them to smoke. However, the Forest proposed to limit slash pile burning until after September 1. We anticipate that murrelets in the action area are extremely unlikely to be exposed to smoke from burning slash piles after September 1 because: 1) Slash piles would be burned only during approved atmospheric conditions that lead to vertical smoke movement and quick smoke dissipation (pursuant to Washington State Department of Natural Resources smoke permit approval), and 2) we assume that approximately 95 percent of the expected murrelet nestlings would have previously fledged (USFWS 2013b, Appendix A). Therefore, we anticipate that murrelets are extremely unlikely to be exposed to smoke from burning slash piles and the effects of slash treatment on murrelets would be discountable.

### Effects from New Log Decking Location

Log removal from the repository and log decking at the first or second opening are not anticipated to cause effects on murrelets that were not considered in the 2011 biological opinion.

### Effects from Time Extension

Construction/reclamation activities would occur for one year longer than originally analyzed in the 2011 biological opinion. The increased duration of the action would not increase the habitat modification component of the proposed project, but it would increase the potential for disturbance from noise and human presence. In the 2011 biological opinion, the Service concluded that 43 acres of suitable habitat for murrelets would be exposed to disturbance from vehicles and heavy equipment for two years (USFWS 2011, p. 40).

Since the 2011 biological opinion was signed for the Monte Cristo CERCLA project, the Service has revised the analyses that were used to describe the potential adverse effects to murrelets from noise and human presence, specifically the operation of heavy equipment. Reconsideration of the best available science led the Service to conclude that significant behavioral responses of murrelets to noise and human activity could occur at distances up to 100 meters during the nesting season (USFWS 2013b, Appendix H). Accordingly, we are revising the analysis for disturbance to evaluate a greater area of exposure and a longer duration of exposure. The Forest estimated that there are 106 acres of suitable murrelet habitat within 100 meters of the new road alignment (Reed, *in litt.* 2015). Those acres have been affected by the project for the past two years and are proposed to be affected for a third year.

In the 2011 biological opinion, the Service concluded that the combination of increased numbers of corvids along the road corridor and disturbance from project activities could result in the loss of a single murrelet nesting attempt due to predation of the egg or young (USFWS 2011, p. 40). This affect was anticipated to occur within a 43-acre area (USFWS 2011, p. 40). Even though the area in which disturbance may occur is now believed to be 106 acres, and the duration of noise and human presence is now 3 years, we still anticipate that the proposed action would lead to the loss of a single murrelet nesting attempt because murrelets occupy Washington State forest at a very low densities.

#### Summary of New Effects to Marbled Murrelets

The effects of changes associated with slash disposal, the new decking location, tree removal at the helicopter landing, and helicopter overflights on murrelets are anticipated to be insignificant or not reasonably certain to result in significant disruptions of normal behavior or death/injury of murrelets. The proposed relocation of the helicopter landing and the extended duration of the proposed activities would be reasonably certain to significantly disrupt the normal behavior of murrelets associated with 131 acres of suitable habitat (106 acres along the road, and 25 acres at the helicopter landing, with some overlap). The anticipated rotor wash may injure or kill nesting murrelets within 2.75 acres of suitable habitat, but we do not consider injure or death of murrelets to be reasonably certain to occur in this case. These effects would occur during the additional 2015 work season.

#### **Effects to Bull Trout and Bull Trout Critical Habitat**

The new helicopter landing site, the new method of slash disposal, and the new log decking location would not affect bull trout or bull trout critical habitat. Since the proposed time extension would not increase the number of stream crossings built or removed or the number of fish salvage operations, we anticipate that the effects of the proposed would not be altered, other than occurring in 2015 instead of 2014. Therefore, the analysis in the biological opinion for effects to bull trout and bull trout critical habitat remains accurate and the take statement need not be amended.

#### **Effects to Spotted Owl Critical Habitat**

The Service published a final revised critical habitat designation for the spotted owl on December 4, 2012 (77 FR 71875); the rule became effective on January 3, 2013. The primary constituent elements (PCEs) are the specific characteristics that make habitat areas suitable for nesting, roosting, foraging, or dispersal (77 FR 71876:71884). The PCEs identified in the revised spotted owl critical habitat rule include 1) forest types in early-, mid-, or late-seral stages that support the spotted owl across its geographic range; 2) nesting and roosting habitat; 3) foraging habitat; and 4) dispersal habitat (77 FR71876:72051-72052). The Project is located within Unit 04: West Cascades North: WCN1 of designated critical habitat for the spotted owl. The subunit contains 438,255 acres of critical habitat in Whatcom, Skagit, and Snohomish Counties, Washington, and comprises lands managed by the USFS and the State of Washington.

The only new effect to spotted owl critical habitat from the proposed Monte Cristo CERCLA project that was not previously considered is the removal of eight trees for the safe helicopter landing at the first opening along the new access route. Removal of those eight trees would occur in critical habitat for spotted owls. The portion of the project area where the additional tree removal would occur is within a larger matrix of forest patches that meet the definition of PCE 1, and some forest patches in vicinity are considered suitable habitat (PCEs 2 or 3). However the individual trees to be removed occur in a small isolated patch of non-suitable habitat and none of the trees have structural characteristics sufficient for spotted owl nesting. We therefore anticipate that effects to spotted owl critical habitat from clearing these eight trees for the helicopter landing would be insignificant to PCE 1 and would have no effect on PCEs 2, 3, or 4.

All other effects of the proposed action on spotted owl critical habitat, including adverse effects, were described and analyzed in the first reinitiation of the 2011 biological opinion (Service reference number 13410-2011-F-0067-R001).

### **Effects to Marbled Murrelet Critical Habitat**

In the 2011 revised Final Rule designating critical habitat for the murrelet (76 FR 61599:61607 [October 5, 2011]), the Service identified PCEs essential to provide and support suitable nesting habitat for successful reproduction of the murrelet, and thus its conservation. These are 1) individual trees with potential nesting platforms (PCE 1), and 2) forested areas within 0.5 mile of individual trees with potential nesting platforms, and with a canopy height of at least one half the site-potential tree height (PCE 2).<sup>1</sup> Areas with just PCE 1, or both PCE 1 and 2, are considered to be critical habitat by definition. Also, activities that occur within or adjacent to lands designated as critical habitat may still have an effect on PCEs, depending on the particular aspects of the Federal action involved.

The only new effect to murrelet critical habitat from the proposed Monte Cristo CERCLA project that was not previously considered is the removal of eight trees for safety at the helicopter landing at the first opening along the new access route. Removal of those eight trees would occur in critical habitat for murrelets. The trees proposed to be removed do not have structural characteristics sufficient for murrelet nesting, and are therefore not PCE 1s. These trees are, however, likely to be within 0.5 mile of a PCE 1 and some of these eight trees are at least one half the canopy height of a site-potential tree, and therefore meet the definition of PCE 2. We anticipate that the effects of removing up to eight PCE 2s in an isolated patch of murrelet critical habitat would be insignificant, given the very small number of trees to be removed and the minimal support function that these trees provide when not connected to a contiguous closed-canopy forest. Removal of these trees would expand the size of a natural opening and not significantly degrade the function of murrelet critical habitat at the site scale or any larger scale.

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<sup>1</sup> *The Washington Fish and Wildlife Office has enumerated these as discrete PCEs for convenience; the Federal Registers (1996 and 2011) do not identify these PCEs with discrete numbers.*

All other effects of the proposed action on murrelet critical habitat, including adverse effects, were previously addressed in the 2011 biological opinion.

## **Conclusion**

After reviewing the current status of bull trout, spotted owl, and murrelet, the environmental baseline for the action area, the effects of the proposed Monte Cristo CERCLA Project and the cumulative effects on bull trout, spotted owl, and murrelet and their critical habitat, it is the Service's Opinion that the action, as proposed, is not likely to jeopardize the continued existence of these species and is not likely to destroy or adversely modify designated critical habitats.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the ESA and federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. *Harm* is defined by the Service as an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering (50 CFR 17.3). *Harass* is defined by the Service 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 CFR 17.3). Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the (agency) so that they become binding conditions of any grant or permit issued to the (applicant), as appropriate, for the exemption in section 7(o)(2) to apply. The (agency) has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Forest 1) fails to assume and implement the terms and conditions or 2) fails to require the (applicant) to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Forest must report the progress of the action and its impact on the species to the Service as specified in this Incidental Take Statement [50 CFR 402.14(i)(3)].

## **AMOUNT OR EXTENT OF TAKE**

The anticipated incidental take for bull trout has not changed from the 2011 biological opinion, other than the year in which it occurs. Incidental take of spotted owls was not anticipated in the 2011 biological opinion and is still not anticipated as a result of the proposed changes to the action. Therefore, this revised take statement only applies to murrelets. Two years of project activities have already occurred; therefore this incidental take statement is for the third year of activities that the Forest has proposed to conduct.

Incidental take of murrelets is difficult to detect because the species is cryptic and murrelet nests are located rarely. However, based on the documented history of murrelet occupancy behaviors in the South Fork Sauk River watershed, and adjacent watersheds, suitable murrelet nesting habitat in the project area is reasonably certain to be occupied. Therefore the amount of nesting habitat that would be exposed to actions that would result in take provides a reasonable surrogate measure for this species.

In this revised take statement, we determined that noise and activity associated with use of motorized equipment and helicopters in the action area during this third year of construction and clean-up period (2015), coupled with increases in densities of corvids, will result in the incidental take of murrelets nesting within the 131 acres of suitable habitat in proximity to the new road and helicopter landing site. This take is in the form of harassment through significant disruption of normal nesting behaviors that creates a likelihood of injury due to decreased fitness of chicks from missed feedings for a third year and the increased possibility of predation by corvids in perpetuity (which was described in the 2011 biological opinion).

## **EFFECT OF THE TAKE**

In the 2011 biological opinion and this revised take statement, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

## **REASONABLE AND PRUDENT MEASURES**

The conservation measures negotiated in cooperation with the Service and included as part of the proposed action constitute all of the reasonable measures necessary to minimize the impacts of incidental take. On that basis, no Reasonable and Prudent Measures (RPMs) except for monitoring and reporting requirements are included in this Incidental Take Statement. This RPM is a revision of RPM 2 for murrelets in the 2011 biological opinion. RPM 1 for murrelets remains unchanged.

RPM 2: Monitor the nature and extent of activities that are likely to result in incidental take of murrelets. Report the results of such monitoring.

## TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the ESA, the Forest must comply with the following terms and conditions, which implement the reasonable and prudent measure described above and outline required reporting/monitoring requirements. These terms and conditions are non-discretionary.

The following term and condition is required for implementation of RPM 2.

1. In order to monitor the impacts of the proposed action and the implementation of the RPMs, the Forest shall prepare a report describing the progress of the proposed action, including implementation of the associated terms and conditions, and impacts to the murrelet. The report shall be submitted to the consulting biologist or branch manager of the Washington State Office on or before January 31, annually until project completion. Electronic correspondence is acceptable for the reporting. The monitoring report shall include the following:
  - a) The quantity of suitable murrelet habitat acres that are within 100 meters of noise and human activity (particularly operation of heavy machinery) and the quantity suitable murrelet habitat acres that are within 265 meters of helicopter operations at the landing site shall be reported.

The Service believes that murrelets associated with no more than 131 acres of suitable habitat will be incidentally taken as a result of the proposed action. The reasonable and prudent measure, with its implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

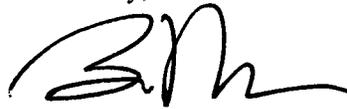
The Service is to be notified within three working days upon locating a dead, injured or sick endangered or threatened species specimen. Initial notification must be made to the nearest U.S. Fish and Wildlife Service Law Enforcement Office. Notification must include the date, time, precise location of the injured animal or carcass, and any other pertinent information. Care should be taken in handling sick or injured specimens to preserve biological materials in the best possible state for later analysis of cause of death, if that occurs. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at (425) 883-8122, or the Service's Washington Fish and Wildlife Office at (360) 753-9440.

**REINITIATION NOTICE**

This concludes formal consultation on the actions outlined in the reinitiation request. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding the Opinion, the amended take statement, or our shared responsibilities under the ESA, please contact Zach Radmer at 360-753-4325 or Carolyn Scafidi at 360-753-4068.

Sincerely,



*pm* Eric V. Rickerson, State Supervisor  
Washington Fish and Wildlife Office

cc:

Mt. Baker National Forest, Everett, WA (J. Plumage)

Mt. Baker National Forest, Everett, WA (L. Everest)

Mt. Baker National Forest, Everett, WA (P. Reed)

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Reed, P. 2015. Wildlife Biologist/Environmental Coordinator, Mt. Baker-Snoqualmie National Forest, Darrington. Email to Zachary Radmer, Fish and Wildlife Biologist, U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, Lacey. Topic: June 4, 2015, email transmitting clarifications to the changed proposed action for the Monte Cristo CERCLA Project.

## APPENDIX A

In a previous biological opinion (USFWS 2009) we analyzed available data to determine the 92 dBA contour of a Chinook 47d helicopter. However, the previously analyzed sound recordings were taken during landing and take-off, and may not be comparable to the noise generated by a helicopter flying overhead. We used a more appropriate sound measurement from the same data set (Newman et al. 1984) to analyze the effects of helicopter overflights in the proposed action. Below, we describe how we followed the same methodology used in our previous biological opinion (USFWS 2009) but started with a different sound measurement.

The San Dimas Technology and Development Center, in San Dimas, California (San Dimas) was contracted by the Olympic National Forest to analyze sound levels of two helicopters often used for logging in Washington and Oregon. San Dimas measured sound levels of two different helicopters during a helicopter logging operation in Oregon. The study (USFS 2009) reported sound measurements of the Kaman KMAX, a helicopter with a 5,000 lb “on hook” lifting capacity, and the Boeing Vertol 107 (Chinook 46 military equivalent) helicopter with a lifting capacity (assuming an external hook and not internal load) of 10,000 lbs. The average maximum sound level readings of noise at different distances were determined. The data showed that the KMAX was below the target level of 92 dBA level at almost all distances. However, the Vertol 107 exceeded 92 dBA levels at some distances. San Dimas generated a power regression curve (where  $R^2=0.8467$  and  $Y=134.88X$ ) to predict the 92 dBA level threshold. The regression curves were consistent with the theoretical relationship of the decrease in sound pressure level as distance increases, specifically 6 dBAs with every doubling of distance over “soft” surfaces (i.e., grass fields or brush) (Piercy and Daigle 1991, p. 3.7). The USFS San Dimas Technical Development Centers study (Simonson 2009, Results Chapter, p. 7) reported an attenuation rate that more closely fell within 4 dBA to 6 dBAs with every doubling of distance between sound meter and helicopter. Since the study area was located in the forest setting during an active logging operation, this attenuation range should be appropriate for application to the proposed action.

San Dimas’ final figure for the Vertol 107 was 92 dBA at about 225 ft. Although this figure uses the 6 dBA attenuation model, sound measurements were close enough to the helicopter (less than 150 ft) that the difference between that and the 8 dBA attenuation model would be insignificant. San Dimas added two standard deviations to that figure to achieve a 97.5 percent confidence interval that resulted in a 92 dBA level at a distance of 450 feet.

This analysis focuses on a study conducted by the Federal Aviation Administration (Newman et al. 1984) that measured sound levels of a Chinook 47d helicopter. Measurements were taken during take-off and approach at different speeds, fly-overs, hovering, and idling on the ground. Noise was measured from various angles and distances from the helicopter. Both sound exposure levels (SEL) and dBA levels were recorded. However, the study occurred at an airport and the Chinook 47d was not hauling a load as was the case in the San Dimas study.

Sound Exposure Level is the total noise energy produced from a single noise event. The SEL is a metric used to describe the total sound energy measured in a specific time period and can be computed from measured dBA sound levels. It is an integration of all the acoustic energy

contained within an event. However, few studies concerning wildlife disturbance report findings in SEL, particularly those in the air environment. Our injury analyses were based on determining a level of sound and the threshold of its detection by murrelets, and not necessarily the accumulation of sound energy over time. Further, SEL maximums can exceed the highest dBA level recorded over an event. For this project, we are more interested in novel noise events in an otherwise natural setting and decided that maximum dBA sound levels are more appropriate as a metric for analysis.

We used the highest recorded noise level from an overflight in the study as a reasonable worst case scenario for our injury threshold distance calculations. The highest recorded noise for the helicopter overflight was at a speed of 135 knots and with a “military trim,” or a helicopter pitch of about 6 degrees from the horizon, apparently a more aggressive (and louder) angle of flight and therefore presumably less comfortable to passengers than a typical helicopter pitch of 3 degrees from the horizon. A microphone was positioned 492 feet from the helicopter and directly in line with the flight path. Other microphones were positioned to the right and left of the flyover also in line with the flight path.

The average dBA max measurement for these overflights was 86 dBA ( $n = 4$ , std. dev. = 1.2). To create a 97.7 percent confidence interval, we added 2 standard deviations to the average maximum dBA (following San Dimas 2008) for a value of 88.4 dBA. We next choose the attenuation rate of 6 dB per doubling of distance because we considered the action area a “soft” site. Our calculations resulted in the 92 dB injury threshold level reached at 324 feet (approximately 108 yards). Our calculations do not account for the noise level of a helicopter lifting a load. Little data exists for this difference in noise levels. We assumed that the 97.7 percent confidence interval would account for any increase in noise generated from a helicopter with a load.

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