



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OR 97232-1274

July 29, 2021

Refer to NMFS No:
WCRO-2021-00488

Kevin Skerl, Acting Deputy Superintendent
National Park Service, Mount Rainier National Park
55210 238th Avenue East
Ashford, WA 98304

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Re-establishing Tread on 25 Yards of the Wonderland Trail in the Carbon River Corridor

Dear Mr. Skerl,

This letter responds to your March 10, 2021, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the subject action, Re-establishing Tread on 25 Yards of the Wonderland Trail in the Carbon River Corridor. Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species and designated critical habitat.

Thank you also for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)) for this action. However, after reviewing the proposed action, we determined that there are no adverse effects on EFH. Therefore, we are hereby concluding EFH consultation.

We reviewed the National Parks Service (NPS) consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced, but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards. We adopt and incorporate by reference the following sections of the submitted biological assessment (BA):

- *Project Location and Description* (pages 2-4): description of the proposed action.
- *Action Area* (pages 5-6): description of the action area and extent of project effects.
- *Federally Listed Fish Species and Critical Habitat*
 - *Aquatic Environmental Baseline* (pages 28-31): description of current aquatic conditions within the action area.
 - *Puget Sound Steelhead and Designated Critical Habitat* (pages 36-38): description of species and critical habitat current status in the action area.



- *Puget Sound Chinook salmon and Designated Critical Habitat* (pages 38-39): description of species and critical habitat current status in the action area.
- *Effects to Listed Fish Critical Habitat* (pages 40-46): effects and cumulative effects analysis of project impacts on species and critical habitat.

We specifically identify any discussion or information contained in the BA with which we disagree. We also supplement these sections below with summaries of the information contained in the BA and additional information and rationale where necessary to support our analysis and conclusions.

Consultation History

On March 10, 2021, NMFS received NPS’s request for concurrence that the Re-establishing Tread on 25 Yards of the Wonderland Trail in the Carbon River Corridor project ‘may affect, but is not likely to adversely affect’ (NLAA) Puget Sound (PS) Chinook salmon (*Oncorhynchus tshawytscha*) (Threatened 6/28/05; 70 FR 37160) and PS steelhead (*O. mykiss*) (Threatened 5/11/07; 72 FR 26722). NPS provided a BA, project drawings, and maps as part of the initiation package. On May 13, 2021, NMFS and NPS discussed the inclusion of electrofishing, seining, dip netting, and handling of fish in the proposed action to relocate fish from the Carbon River adjacent to the work site along the Wonderland Trail. Electrofishing, capture, and handling fish increases the likelihood of harm, injury, or mortality occurring. As such, NMFS informed NPS that fish exclusion and relocation using electrofishing is reasonably likely to harm fish, including listed species. On June 11, 2021, NPS confirmed with NMFS that electrofishing would remain in the proposed action. As such we do find that the proposed action ‘may affect, and is likely to adversely affect’ (LAA) Puget Sound Chinook salmon and Puget Sound steelhead (Table 1). This determination is based in part on the proposal to exclude and relocate fish from the work area using electrofishing equipment, seine and dip nets, as well as capturing, handling, and relocating fish. Additionally, NPS determined that the proposed action has “no effect” on critical habitat because it does not exist within the action area, where effects are expected to occur. Consultation on critical habitat effects is therefore not required. NPS requested formal consultation with NMFS on June 11, 2021.

Table 1. Effects determinations made by NPS and NMFS.

Species	NPS Listed Species Determination	NPS Critical Habitat Determination	NMFS Listed Species Determination	NMFS Critical Habitat Determination ¹
PS Chinook salmon	NLAA	No Effect	LAA	N/A
PS Steelhead	NLAA	No Effect	LAA	N/A

¹ Critical habitat is not designated in the project area and is not effected by the proposed action. As such we do not include a critical habitat effects analysis or determination.

Proposed Action

The proposed action is described in NPS's consultation request letter and in the Biological Assessment (pages 2-4). In summary, NPS proposes to re-establish 25 yards of the Wonderland Trail along the Carbon River in Mount Rainier National Park. Re-establishing the trail would require removing loose soil and rocks, blasting, and drilling. Conservation measures to minimize impacts to ESA listed PS Chinook salmon and PS steelhead include completing work during a designated in-water work windows (July 16 – August 15), relocating fish from a pool adjacent to the work area prior to commencing construction activities, preventing fish access to the pool using block nets, and removing post-blast material from the hillslope. NPS has proposed to remove fish from the adjacent pool using seine nets, dip nets, and electrofishing equipment to minimize fish exposure from falling rocks. Block nets would be installed following removal at the top and bottom ends of the pool to prevent fish from reentering during the work period.

The proposed action is expected to occur over the course of a few days and would require drilling, blasting, and moving rock manually along the hillslope above the Carbon River. Site preparation would require about one day of work and would include removing loose soil and rocks by hand, creating depressions and cavities for surface blasts, and drilling boreholes in bedrock. Blasting preparations and blasting would occur after the initial site preparation described above (likely the following day) and would include placing up to fourteen 1/2- to 20-pound blasting charges along the 25-yard section of trail. Blasting is expected to last less than 30 minutes. NPS crews would remove and redistribute fractured rock by hand to re-establish tread on the new trail and minimize delivery of rock to the river. Approximately 15 cubic yards of fractured rock is expected to be generated by blasting activities.

We considered, under the ESA, whether or not the proposed action would cause any other impacts than those described here and in the BA and determined that it would not.

Action Area

“Action area” means all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). The aquatic action area pertaining to ESA-listed PS Chinook salmon and PS steelhead is described by NPS to extend a half mile downstream of the blasting site on the Carbon River, a major tributary to the Puyallup River in Mount Rainier National Park. The half mile designation accounts for any sediment plumes or changes in the channel configuration that may result from blasting above the channel and is the maximum extent of all physical or biological effects of the proposed action. NMFS concurs with NPS's Action Area designation and that effects are highly unlikely to occur greater than a half mile downstream of the work area. PS Chinook salmon and PS steelhead critical habitat does not exist in the action area and is designated approximately 5.5 river miles downstream of the work area. Given the “no effect” determination made by NPS and that critical habitat does not exist in the action area, where effects are expected to occur, we do not include an evaluation of effects to critical habitat in this biological opinion.

Environmental Baseline

The “environmental baseline” refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical

habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of state or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR 402.02). We independently reviewed and incorporated information provided in the BA to determine the "environmental baseline" conditions in the action area (pages 28-30). In summary, the Carbon River has high levels of suspended sediments due to its origin at the Carbon Glacier at Mount Rainier. The Carbon River also carries a very high bedload due to active sources of coarse sediment from glacial outwash. The river channel in the action area is braided and naturally unstable. Extreme peak flows are common and have caused the channel to widen and migrate over time. Since the early 1980's the Carbon Glacier has been actively retreating.

Species Status

We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. We independently reviewed and incorporated information provided in the BA (pages 36-39) to examine the status of PS Chinook salmon and PS steelhead throughout the action area. We also considered information in the most recent recovery plans and status reviews for PS Chinook salmon (Shared Strategy 2007, NWFSC 2015, NMFS 2017) and PS steelhead (NMFS 2019, NWFSC 2015, NMFS 2017) which provide important information on the listed species' status, presence, abundance, density or periodic occurrence, and the condition and location of habitat, including critical habitat.

Effects of the Action

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

The BA provides a detailed discussion and comprehensive assessment of the effects of the proposed action in the *Effects to Listed Fish and Critical Habitat* section (pages 40-46) and are adopted here pursuant to 50 CFR 402.14(h)(3). NMFS has evaluated this section and after our independent, science-based evaluation determined it meets our regulatory and scientific standards. PS Chinook salmon and PS steelhead present in the action area during the work window are likely to be exposed to, and respond to, short-term construction effects including elevated turbidity during fish relocation efforts and trail blasting, delivery of fractured rocks from blasting efforts, and increased underwater noise from blasting. Listed species present in the action area would also be exposed to electrofishing, seining, dip netting, capture, and handling during fish relocation efforts described on page 41 of the BA.

Presence/exposure

The likelihood of PS Chinook salmon and PS steelhead being present in the action area during the construction period is relatively low. The majority of Chinook salmon and steelhead are known to spawn in the lower Carbon River downstream of the action area and national park boundary. However, spawning habitat does exist in the vicinity of the action area. While spawning fish have not been observed within the park boundaries, systematic spawning surveys have not been consistently completed. Juvenile rainbow/steelhead trout have been documented in the Carbon River near the project site as well as in Ipsut, Chennis, and Ranger creeks. However, while the likelihood of Chinook salmon or steelhead being present in the Carbon River near the project site is low, we cannot rule out the possibility of individuals occupying the area during construction.

Effects of the Action on Listed Species

Following our own independent assessment of the proposed action included in the BA (pages 3-4), NMFS believes that the proposed action may cause short-term direct effects to listed fish species from in-water noise, fish exclusion and relocation efforts, water quality impacts, and sediment delivery. In addition, we also believe that stabilizing and re-establishing the Wonderland Trail would result in indirect long-term effects including reduced long-term erosion and sediment delivery to the stream. Except for the long-term reduction in erosion and sediment delivery, our effects analysis identified the same mechanistic pathways as the NPS analysis, although we draw slightly different conclusions based on the anticipated impact of each of those effects, as articulated below.

Fish Exclusion and Relocation: NPS has proposed to remove and relocate fish from a large pool adjacent to the work area using seine, dip, and block nets and electrofishing in order to prevent fish from being exposed to fractured rocks deposited into the river as a result of trail blasting. The pool would be cordoned off following relocation efforts to prevent fish from re-entering the area. As described on page 41 of the BA, capture and handling induced stress can increase plasma levels of cortisol and glucose, decrease growth, decrease reproductive capabilities, increase vulnerability to predation, and increase the likelihood of mortality. Electrofishing significantly increases the chance of harm, injury, or mortality. Additionally, given the high turbidity common in the Carbon River, visibility would be low and monitoring fish response and recovery to electrofishing would be difficult and increase the risk of injury. Electrofishing should only be employed if conditions are conducive. NPS has agreed to exhaust other fish removal and relocation efforts before implementing electrofishing. Because of the risks of electrofishing, capture, and handling we find it reasonably certain that any juvenile or adult PS Chinook salmon and PS steelhead that are in the vicinity at the time of the work and exposed to fish exclusion and relocation efforts will be harmed, injured, or killed. While we acknowledge and agree with NPS that the likelihood of encountering PS Chinook salmon or PS steelhead during exclusion and relocation efforts is low, based on the best available science and data we cannot rule out the possibility that listed fish would be captured and handled; even a small number of handled PS Chinook salmon or PS steelhead would constitute an adverse effect.

In-Water Noise: The proposed action includes blasting to re-establish tread along a 25-yard portion of the Wonderland Trail. Blasting activities would cause a brief period of acoustic disturbance to fish residing in the Carbon River. The noise generated would startle fish and cause

them to avoid the area. NPS estimates blasting would take approximately one hour to complete. At most, fish residing in the Carbon River adjacent to the work area may temporarily avoid habitat in that section of river. The exposure to in-water noise would cause no measurable effect on the fitness, nor meaningful changes in the normal behaviors of exposed individuals. We find these effects to be insignificant.

Water Quality, Turbidity: The project may temporarily impact water quality in the area adjacent to and immediately downstream of the work area. Specifically, fine sediment deposited on the channel bottom may become suspended in the water column as a result of fish relocation efforts. Additionally, turbidity may increase briefly during and following blasting activities as bank sediments may be delivered to the stream. Washington state regulations (WAC 173-201A-200) require that construction activities in areas where salmonids rear or migrate must not increase turbidity more than 10 nephelometric turbidity units (NTU) over background levels when the background levels are 50 NTUs or less. In streams where background turbidity is 50 NTUs or higher instream work must not increase turbidity by more than 20 percent. Turbidity in the Carbon River measured between July and August 2011 ranged from 60-198 NTUs (Samora et al. 2011). State regulations would limit the proposed action to a 20 percent increase in turbidity relative to background conditions to protect rearing or migrating salmonids. It is extremely unlikely that the proposed fish relocation efforts and the blasting activity would increase turbidity greater than 20 percent relative to background conditions. Moreover, increases in turbidity are expected to remain below levels that would injure or disturb fish and dissipate quickly. Therefore, the effects of increased turbidity on PS Chinook salmon and PS steelhead are insignificant.

Delivery of fractured rocks to river channel: Blasting activities to re-establish tread on the Wonderland Trail are likely to transport pieces of fractured bedrock to the Carbon River and pose a direct injury or death risk by crushing or burying fish. NPS estimates approximately 15 cubic yards of rock would be produced by the blasting activities. NPS expects the majority of fractured rock would remain on the hillslope and be relocated by hand to stabilize and re-tread the new trail. Blasting would occur following fish relocation efforts and thus it is unlikely that fish would be exposed to fractured rock during blasting. Therefore, we find the risk of injury to PS Chinook salmon or PS steelhead as a result of fractured rock delivery to the river to be discountable.

Habitat Impacts: The proposed action may cause indirect effects on listed fish through habitat impacts. Specifically, minor instream habitat modifications may occur due to the deposition of fine sediment and fractured bedrock from blasting activities. However, these impacts are expected to be immeasurable. Due to the hydrologic characteristics of the Carbon River any sediment delivered to the river is expected to be dispersed and flushed out shortly following implementation of the project during the next high flow event. We also expect retreading the trail would result in a reduction of erosion and delivery of sediment over time, providing a small benefit to instream habitat conditions.

Cumulative Effects

“Cumulative effects” are those effects of future state or private activities, not involving federal activities, that are reasonably certain to occur within the action area of the federal action subject

to consultation (50 CFR 402.02 and 402.17(a)). Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The *Cumulative Effects* section on page 44 of the BA was reviewed and incorporated by reference and identifies federal and non-federal forest practices occurring on the forested landscape adjacent to the Carbon River as a mechanism that would continue to adversely affect listed fish species. In addition to NPS's assessment of cumulative effects, we also expect climate change to negatively impact listed species through habitat loss, increased severity and frequency of low flows, and decreased annual snowpack.

Integration and Synthesis

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and critical habitat, to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

PS Chinook salmon and PS steelhead are threatened species and within the Carbon River basin populations are most prevalent in the lower river downstream of the action area. The proposed action is expected to have minor, localized effects that would negatively affect present listed fish species for a short period of time. The temporary effects including increased turbidity, delivery of fractured rocks and sediment, and increased in-water noise do not occur at an intensity that would further limit the action area's role for growth, maturation, or movement of any fishes between important habitats. Fish capture, handling, and electrofishing may cause harm, injury, or mortality to occur; although we expect very few fish will be handled and harmed. The long term effects may provide a small incremental improvement to habitat that could result in a small conservation benefit. Specifically, improving the stability of the Wonderland Trail may decrease sediment delivery from recreational trail use over time.

Conclusion

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS's biological opinion that the proposed action is not likely to jeopardize the continued existence of PS Chinook salmon and PS steelhead, or destroy or adversely modify their designated critical habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a 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 further defined by regulation to include significant

habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). “Incidental take” is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

- Harm of PS Chinook salmon and PS steelhead from electrofishing, seining, dip netting, capture, and handling associated with fish exclusion and relocation efforts.

Work area isolation is a conservation measure intended to reduce adverse effects from in-water work activities. However, PS Chinook salmon and steelhead may be present in the action area and would be exposed to exclusion and relocation efforts which could cause harm or death. Due to uncertainty in potential abundance and density we based our analysis on a maximum of 50 juvenile (including smolts) and 5 adult PS Chinook salmon and 50 juvenile (including smolts) and 5 adult PS steelhead that would be captured and handled during the isolation and relocation efforts. However, we anticipate that the likely number of fish handled would be much lower than these estimates. If the number of PS Chinook salmon or PS steelhead captured and handled exceeds the above numbers then the amount of take would be exceeded, and the reinitiation provisions of this opinion would be triggered. NPS will notify NMFS within 24 hours of take violations.

Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species, or destruction or adverse modification of critical habitat.

Reasonable and Prudent Measures

“Reasonable and prudent measures” are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

1. NPS shall minimize incidental take of listed species resulting from handling, capture, and electrofishing.
2. NPS shall implement a monitoring and reporting plan to confirm that RPM’s are implemented as required and take exemption for the proposed action is not exceeded, and that the terms and conditions are effective at minimizing incidental take.

Terms and Conditions

The terms and conditions described below are non-discretionary, and NPS or any applicant must comply with them in order to implement the RPMs (50 CFR 402.14). NPS or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. The following terms and conditions implement RPM 1:
 - a. Take all appropriate steps to minimize the amount and duration of handling during capture and release operations, including the following:
 - i. NPS fish biologists, their subordinate staff, or certified contractors must conduct all fish capture, handling, and electrofishing operations, unless otherwise approved in writing by NMFS.
 - ii. Conduct a spawner/redd survey prior to starting work to ensure spawning adults or redds are not present in the action area.
 - iii. If electrofishing is used to capture fish for relocation, NMFS's electrofishing guidelines will be followed (NMFS 2000). Those guidelines are available from the NMFS West Coast Region, Protected Resources Division, Portland, Oregon.²
 - iv. Do not use seining or electrofishing equipment if water temperatures exceed 18°C, or are expected to rise above 18°C.
 - v. ESA-listed fish must be handled with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
 - vi. Water quality conditions must be adequate in tanks, buckets, or in sanctuary nets that hold water to transport fish by providing circulation of clean, cold water, using aerators to provide DO, and minimizing holding times. DO and temperature should be periodically monitored in transport containers.
 - vii. Fish must be released into a safe location as quickly as possible, and as near as possible to capture sites.
2. The following terms and conditions implement reasonable and prudent measure 2:
 - a. Before work begins, all contractors working on site must receive a complete list of NPS's permit special conditions, this biological Opinion's ITS, including the RPMs and terms and conditions intended to minimize the amount and extent of take resulting from in-water work.
 - b. On the start date of the construction, NPS shall notify NMFS that construction has commenced: This notification should be sent to projectreports.wcr@noaa.gov and include:
 - i. Email subject line: "NOTIFICATION OF START DATE WCRO-2021-00488"
 - ii. Date project construction began

² <https://media.fisheries.noaa.gov/dam-migration/electro2000.pdf>

- c. → Report to NMFS the total number of PS Chinook salmon and PS steelhead encountered, captured, killed, and relocated within 30 days of completing fish exclusion and relocation work. This notification should be sent to projectreports.wcr@noaa.gov and include:¶
- i. → Email subject line: “NOTIFICATION OF FISH EXCLUSION WORK COMPLETED WCRO-2021-00488”¶
 - ii. → Date fish exclusion work completed. ¶

Conservation Recommendations

Section 7(a)(1) of the ESA directs federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02). NPS should identify and implement habitat restoration activities along the Carbon River within the Mt. Rainier National Park boundaries that:

1. Improve riparian habitat and increase cover and forage for juvenile migration and rearing; and
2. Improve instream habitat through restoration projects that increase spawning and juvenile rearing habitat.

Please notify NMFS if NPS carries out this recommendation so that we will be kept informed of actions that are intended to improve the conservation of listed species or their designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by NPS or by NMFS, where discretionary federal involvement or control over the action has been retained or is authorized by law and (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or if (4) a new species is listed or critical habitat designated that may be affected by the identified action.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository <https://repository.library.noaa.gov/>. A complete record of this consultation is on file at the Oregon Washington Coastal Office in Lacey, Washington.

Please direct questions regarding this letter to Forrest Carpenter, forrest.carpenter@noaa.gov, (360) 790-0222.

Sincerely,

Kim W. Kratz, Ph.D.
Assistant Regional Administrator
Oregon Washington Coastal Office

cc: Sallie Beaver, NPS
Teri Tucker, NPS

References

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