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**Supplemental Information Report of
Updated Dungeness River Basin Coho Salmon Hatchery Program**

May 9, 2021

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1. INTRODUCTION

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On June 3, 2016, the National Marine Fisheries Service (NMFS) issued a final environmental assessment (2016 EA) and finding of no significant impact (FONSI) in connection with its determination that the Dungeness River Basin Chinook salmon, coho salmon, and pink salmon hatchery programs satisfy the requirements under Limit 6 of the Endangered Species Act (ESA) Section 4(d) Rule. NMFS is now proposing to make a new determination under Limit 6 of the 4(d) Rule for all three programs, as a result of an update to the coho hatchery program described in the 2016 EA. Because the Chinook and pink salmon programs will remain the same as that analyzed in the 2016 EA, our analysis below will focus on the changes associated with the non-ESA-listed coho program.

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The purpose of this supplemental information report is to determine whether the update to the coho salmon hatchery program is substantial enough to require a supplemental NEPA analysis. This occurs when there are changes to the proposed action that are relevant to environmental concerns evaluated in the original NEPA document or when there are new circumstances or any new information that are relevant to environmental concerns and could meaningfully alter the prior analysis of the proposed action and its impacts.

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2. BACKGROUND

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On January 18, 2013, NMFS received three hatchery and genetic management plans (HGMPs) for salmon propagation through Dungeness River hatchery programs from the Washington Department of Fish and Wildlife (WDFW). For each of these HGMPs, the Jamestown S’Klallam Tribe served as the *U.S. v. Washington* fish resource co-manager (WDFW 2013a; WDFW 2013b; WDFW 2013c). The WDFW and the Jamestown S’Klallam Tribe submitted these HGMPs seeking NMFS’ determination of whether the plans achieve the conservation standards of the ESA, as set forth in Limit 6 of the 4(d) Rule. This determination by NMFS is a Federal action requiring NEPA compliance.

Using information obtained from the ESA applications, NMFS prepared a draft EA with the cooperation of the Bureau of Indian Affairs for public review pursuant to NEPA. The draft EA, *Environmental Assessment to Analyze Impacts of NOAA’s National Marine Fisheries Service Determination that Three Hatchery Programs for Dungeness River Basin Salmon as Described in Joint State-Tribal Hatchery and Genetic Management Plans Satisfy the Endangered Species Act Section 4(d) Rule* was released for public comment on February 20, 2015 (80 Fed. Reg. 9260). NMFS received comments from two commenters during the 30-day public comment period.

After considering public comments, on June 3, 2016, NMFS issued a 2016 EA and FONSI determining that the proposed hatchery programs would meet the criteria under Limit 6 of the ESA Section 4(d) would not significantly adversely impact the quality of the human environment, and preparation of an environmental impact statement (EIS) under NEPA was not necessary (NMFS 2016a).

The final 2016 EA analyzed four alternatives: 1) a “no action” alternative of not making a determination under Limit 6 of the ESA 4(d) Rule; 2) the proposed action alternative of making a determination that the HGMPs meet the requirements under Limit 6 of the ESA 4(d) Rule; 3) making a determination that the HGMPs do not meet the requirements under Limit 6 of the ESA 4(d) Rule, resulting in termination of the hatchery salmon programs in the Dungeness River Basin; and 4) reduction of hatchery salmon release

1 levels from programs in the Dungeness River Basin. The no action and proposed action alternatives are
2 most similar to the action as proposed here with increased coho production.
3

4 On August 13, 2019, NMFS received a request from WDFW and the Jamestown S’Klallam Tribe to
5 increase releases of coho salmon yearlings from its Dungeness River coho salmon hatchery
6 program. The applicants seek NMFS’ determination that an increased annual release of 300,000
7 yearlings from the Dungeness River Hatchery located at river mile (RM) 10.5 on the Dungeness
8 River would meet all the requirements specified in Limit 6 of the ESA 4(d) Rule. In March 2020,
9 NMFS published in the Federal Register notification of the availability of its ESA 4(d) Rule
10 proposed evaluation and pending determination (PEPD) for the three joint HGMPs for public
11 review and comment (85 FR 13632, March 9, 2020). The public comment period was open for 30
12 days, closing on April 8, 2020. During the public comment period, NMFS received no comments,
13 therefore, there was no need for revisions to the documents to clarify, correct, or refine the proposed
14 action description or effects evaluation sections as a result of public input.
15

16 In reviewing the updated hatchery program specific to coho salmon yearling releases, NMFS must
17 consider whether the action “is not likely to appreciably reduce the likelihood of survival and recovery”
18 (65 Fed. Reg. 42422, July 10, 2000) of listed salmon and steelhead under the ESA.
19

20 3. CHANGES TO THE PROPOSED ACTION

21 The updated proposed action would provide ESA coverage to the funding and operation of the Dungeness
22 River coho salmon hatchery program specific to an annual increase of 300,000 yearlings to its existing
23 program release of 500,000 yearlings. This differs from the alternative considered but not analyzed in the
24 EA to increase hatchery salmon release levels beyond using raceways that were not previously used
25 (Section 2.5.5). This increase of coho salmon yearlings is within the capacity of the Dungeness River
26 Hatchery, which is unlike the increased production alternative that was eliminated in the 2016 EA. The
27 2016 EA included increases in Chinook salmon, coho salmon, and pink salmon, and was beyond the
28 hatchery capacity. Of note, the following summarizes the proposed changes from the 2016 proposed
29 action. We, then, analyze whether these changes require a supplement to the 2016 EA.
30

31 The Dungeness River coho salmon hatchery program is ongoing and is intended to function as a
32 segregated program that provides harvest benefits. The current Dungeness River Basin coho salmon
33 hatchery program has targeted annual juvenile release levels of 500,000 yearlings, 2,000 fry, and 1,900
34 eyed eggs. The applicants request to change this program to increase the release numbers of the yearling
35 component to an annual release of 800,000 yearlings. There would be no other changes to the overall
36 program schedule or to its water source (Dungeness River); broodstock origin (returning Dungeness River
37 hatchery-origin coho salmon); adult collection (Dungeness River Hatchery off-channel adult pond);
38 incubation, rearing, and acclimation (Dungeness River Hatchery); marking (100 percent of yearlings
39 receive an adipose-fin clip and 50,000 also receive a CWT, fry are released unmarked); and release sites
40 (volitional release at Dungeness River Hatchery earthen pond). Facilities are sufficiently maintained and
41 operated to accommodate the increase in yearling production. Therefore, no analysis will be performed on
42 those aspects of the program that will not change.
43

44 3.1. Consideration of New Circumstances and Information

45 The 2016 EA analyses of cultural resources, human health and safety, and environmental justice remain
46 applicable because under the updated, increased hatchery production would have no effect on these
47 resource areas. Of note are the following resource areas where the increased number of coho salmon
48 yearling releases may result in direct and indirect effects.
49

1 **Direct and Indirect Effects on Water Quantity and Water Quality**

2 The 2016 EA analyzed water quantity effects from the hatchery programs at the Dungeness Hatchery
3 (Chinook salmon, winter-run steelhead, coho salmon, and fall-run pink salmon). The hatchery has a
4 surface water withdrawal permit, and the hatchery will be required to meet the same permit conditions
5 with the increased production of 300,000 coho salmon yearlings. Likewise, the hatchery must also
6 comply with its National Pollutant Discharge Elimination System (NPDES) permit conditions with the
7 additional coho salmon yearling production. Thus, the impact of the increased coho salmon yearling
8 production would not be different than that analyzed in the 2016 EA because the hatchery will continue to
9 comply with its applicable Washington State water withdrawal permit (which limits the amount of water
10 allowed to be withdrawn for hatchery operations) and its NPDES permit (which limits the amount of
11 pollutants that can be discharged into receiving waters). As a result, the effect would be the same as
12 described in the 2016 EA as the operators would not exceed their water rights.
13

14 *Cumulative Impacts on Water Quantity and Quality*

15 There are no other past, present, and foreseeable future actions that would be different for water quantity
16 and water quality from those analyzed in the 2016 EA. Because the water quantity and quality limits
17 would not change with the proposed increase of production, there would be no change to the contribution
18 to cumulative impacts from those analyzed in the 2016 EA.
19

20 **Direct and Indirect Effects on Salmon and Steelhead**

21 Salmon and steelhead that occur in the Dungeness River include listed Chinook salmon, summer-run
22 chum salmon, and steelhead. Their listing status is unchanged from that described in the 2016 EA. Other
23 non-listed salmon present in the Dungeness River include coho salmon, fall-run chum salmon, summer-
24 run and fall-run pink salmon, and sockeye salmon. Effects to salmon and steelhead from release of an
25 additional hatchery production of 300,000 coho salmon yearlings are described in this section.
26

27 The general effects of increasing the number of coho salmon yearlings released from the Dungeness
28 Hatchery on listed salmon and steelhead via hatchery facility impacts, genetics, masking, incidental
29 fishing effects, population viability, and disease transfer remain the same as those analyzed under the
30 Proposed Action alternative in the 2016 EA. A hatchery production increase of 300,000 coho salmon
31 yearlings, in addition to the current releases of 500,000 coho salmon yearlings, would not result in a
32 meaningful increase or change in these general hatchery effects described in the 2016 EA. This is because
33 the coho production increase would not alter hatchery operations, result in a change to genetic effects on
34 ESA-listed species, alter the marking of juvenile salmon, change fishing regulations, result in a change to
35 population viability in the Dungeness River Basin, nor result in changes to potential disease transfer
36 between hatchery-origin and natural-origin fish. The Dungeness River is not believed to support a
37 summer-run chum salmon population, although these fish have been periodically observed in the
38 Dungeness River during September and October as described in the 2016 EA. WDFW's SalmonScape
39 does not show this species as occurring in the river system. Thus, the proposed increase in coho salmon
40 yearling releases would not result in an effect to summer-run chum salmon for either competition or
41 predation, and effects would be the same as described under the Proposed Action alternative in the 2016
42 EA. Low numbers of spawning sockeye salmon are also periodically observed in the watershed.
43 However, the status of sockeye salmon in the river is unknown, and the effect of increased hatchery
44 production updated on sockeye salmon in fresh water would be the same as described in the 2016 EA.
45

46 *Broodstock Collection*

47 As described in the 2016 EA, the Dungeness River coho salmon population is likely a mixture of the
48 native stock and non-native coho salmon stocks introduced through hatchery transplanting between 1952
49 and 1981. Coho salmon broodstock sustaining the WDFW hatchery program are localized returns to the
50 Dungeness River Hatchery trap. There is sufficient broodstock available annually to accommodate the
51 increased annual production of 300,000 yearlings. There would be no change in timing and location of

1 broodstock collection or methods used to collect broodstock as all hatchery coho volunteer to the hatchery
2 and are either used as broodstock or surpluses. Thus, the effect from broodstock collection would be the
3 same as described in the 2016 EA.
4

5 Returning hatchery-origin coho salmon that are in excess of broodstock requirements have been used by
6 the Dungeness Hatchery for nutrient enhancement through deposition of carcasses along streams.
7 However, the release of an additional 300,000 yearlings would not result in a meaningful change to the
8 amount of excess coho salmon used for nutrient enhancement, which would result in a similar effect as
9 described in the 2016 EA. This is because nutrient enhancement from the coho salmon carcasses would
10 occur in the same areas as previously analyzed in a similar manner (i.e., depending on adult return levels
11 and the amount decided by applicants to use), and this benefit would not alter the ecological benefits of
12 nutrient enhancement already occurring from marine-derived nutrients as the increase in adult carcasses
13 available for nutrient enhancement will not rise to a measurable effect.
14

15 *Competition and Predation*

16 Ecological interactions between hatchery-origin and natural-origin fish may occur during both juvenile
17 and adult life-history stages. Hatchery-origin fish released into freshwater habitats where natural-origin
18 salmon and steelhead juveniles rear may compete with or prey on natural-origin fish. Returning hatchery-
19 origin adults may also compete with natural-origin salmon and steelhead for spawning sites.
20

21 **Competition from Hatchery-origin Coho Salmon Yearlings.** When the Dungeness Hatchery releases
22 coho salmon yearlings, other natural-origin salmon and steelhead juveniles that are out-migrating in the
23 Dungeness River include Chinook salmon, steelhead, natural-origin coho salmon, and pink salmon as
24 described in the 2016 EA. These salmon species would be susceptible to negative effects from
25 competition. The proposed changes would result in a slight increase in those effects.
26

27 The majority of coho salmon yearlings released from the Dungeness Hatchery out-migrate rapidly due to
28 the short distance from the hatchery to marine water (10.5 miles). Because these yearlings are released as
29 smolts with an expected brief freshwater residence, as described in Tatara et al. (2016), they have a
30 limited temporal overlap with natural-origin fish. As described in the 2016 EA, hatchery-origin coho
31 salmon yearling competition with other salmon and steelhead species in the Dungeness River is limited
32 because the hatchery-origin fish are released as smolts close to marine waters and they are volitionally
33 released as smolts that are physiologically ready to quickly move downstream. As a result, we expect that
34 no more than 10 percent of the migrants in the Dungeness River would be comprised of hatchery-origin
35 coho salmon 10 days after the release. We anticipate that this will not have a measurable increase in
36 competition beyond the extent analyzed in the 2016 EA because other natural-origin fish (salmon and
37 non-salmon) and hatchery-origin Chinook salmon are also present to contribute to the competition effect.
38

39 However, some natural-origin salmon and steelhead juveniles are currently lost to competition with the
40 release of hatchery-origin coho salmon yearlings, particularly when there is overlap in time and space.
41 Coho salmon will have already left the system or will be at the end of their emigration while the age 1+
42 steelhead will remain for another year. There will be potential for competition but this will be minimized
43 as the coho yearlings will be rapidly migrating out and will not remain in the system for a long time after
44 they are released from the hatchery. The number of steelhead spawning naturally in the Dungeness River
45 Basin is low and distributed over 18 miles of the Dungeness River as well as ~8 miles of the Gray Wolf
46 River and other tributaries, thereby limiting the extent of competition, while over 2,000 natural-origin
47 coho salmon spawn throughout the Dungeness River, which increases their potential for competition with
48 hatchery-origin coho salmon.
49

50 The same situation that results in competition between hatchery-origin and natural-origin juveniles can
51 also cause predation risk. The hatchery-origin coho salmon yearlings would be expected to prey on

1 smaller fish, including salmon, as they out-migrate from the Dungeness River. These smaller natural-
2 origin fish include Chinook salmon subyearlings, winter-run steelhead fry and parr overwintering in the
3 river, as well as out-migrating fall chum and even-year pink salmon as described in the 2016 EA. Pink
4 salmon are not at increased risk of predation by hatchery-origin coho salmon yearlings because the
5 majority of pink salmon have completed their outmigration before coho salmon are released. Chinook
6 salmon are also at low risk of predation by hatchery-origin coho salmon because Chinook salmon will be
7 60-65 mm long when hatchery-origin coho salmon are released. This is ½ of the length of the average
8 hatchery coho with reduces the potential for predation. However, although predation in fresh water may
9 increase with the additional release of 300,000 coho salmon yearlings, effects from this increase are not
10 expected to be different from effects described in the 2016 EA because of the short outmigration distance
11 and the coho salmon yearlings would out-migrate rapidly (mostly within 10 days) from the Dungeness
12 River as smolts.

13
14 Releases of large numbers of hatchery-origin fish affect natural-origin juvenile salmon and steelhead by
15 attracting other predators, such as birds and non-salmonid fish predators (Steward and Bjornn 1990). On
16 the other hand, ongoing releases of hatchery-origin fish may protect natural-origin fish by providing prey
17 to predators that may have otherwise preyed on natural-origin fish. However, as described above, the
18 hatchery-origin coho salmon yearling release would occur over a short period of time and, as smolts, the
19 yearlings would rapidly out-migrate from the Dungeness River. Thus, effects would be similar to those
20 described in the 2016 EA.

21
22 **Competition from Hatchery-origin Coho Salmon Adults.** Spawning and holding site competition and
23 redd superimposition may occur between hatchery-origin fish and natural-origin fish that return to rivers
24 and streams as adults and spawn during the same time of year. Most hatchery-origin coho salmon adults
25 return directly to the Dungeness Hatchery trap. These adults are either captured for broodstock or used as
26 surplus for local food banks and for nutrient enhancement. However, some hatchery-origin coho salmon
27 would be expected to spawn naturally near the Dungeness Hatchery. The proposed changes would result
28 in a slight increase in those effects.

29
30 Adult hatchery-origin coho salmon could superimpose their eggs on top of redds from natural-origin
31 salmon and steelhead adults that return to spawn in the vicinity of the hatchery, including Chinook
32 salmon, natural-origin coho salmon, and fall-run chum salmon. This could occur due to their similar
33 spawning time periods and locations as coho salmon. Steelhead and pink salmon spawn at different times
34 of the year and would not be susceptible to redd superimposition by returning adult hatchery-origin coho
35 salmon as described in the 2016 EA. A total release of 800,000 hatchery-origin coho is expected to result
36 in an increase of 147 adult naturally spawning hatchery-origin coho above that analyzed in the 2016 EA.
37 This increase is anticipated to affect less than 2 percent of the outmigrating juvenile Chinook salmon
38 (NMFS no date), the risk of redd superimposition from the release of an additional 300,000 coho salmon
39 yearlings would be minimally more than that analyzed in the 2016 EA.

40 41 *Cumulative Impacts on Salmon and Steelhead*

42 As discussed above, increasing hatchery releases by 300,000 coho salmon yearlings updated release level
43 would primarily result in effects on salmon and steelhead within the Dungeness River Basin and adjacent
44 marine areas. Effects from these updated release levels in the Dungeness River Basin would be localized
45 and not expected to have a cumulative impact, taken together with hatchery production elsewhere in
46 Puget Sound, on salmon and steelhead that occur within Puget Sound since over 167 million hatchery fish
47 are released (NMFS 2019), and the total of 800,000 coho salmon yearlings released from the Dungeness
48 Hatchery would represents less than 1 percent of total Puget Sound hatchery releases. There are no other
49 past, present, and foreseeable future effects that would be different from those analyzed in the 2016 EA.
50 Currently, the primary factor that has limited salmon and steelhead populations in the Dungeness River
51 Basin is degraded habitat, rather than effects from releases of hatchery-origin fish. Thus, the increased

1 hatchery production under updated proposed action would not have substantially different cumulative
2 impacts on salmon and steelhead than that analyzed in the 2016 EA.

3
4 **Direct and Indirect Impacts on Other Fish**

5 Other fish, outside of salmon and steelhead, may prey on, be a predator of, or compete with coho salmon
6 for food and cover. The production increase of 300,000 coho salmon yearlings from the Dungeness
7 Hatchery would not affect their relationship with other fish because hatchery-origin coho salmon
8 yearlings represent a small portion of the diet of other fish. Hatchery-origin coho salmon yearlings prey
9 on a diversity of invertebrates and small fish, and competition between other fish and hatchery-origin
10 coho salmon for cover and space is limited since hatchery-origin coho salmon yearlings move rapidly into
11 marine waters. Thus, the effects described for other fish remain unchanged as described in the 2016 EA.

12
13 Since publication of the 2016 EA, there have been no new additions to listings of federally threatened and
14 endangered fish, although the listing status of some species has changed (i.e., rockfish species). One
15 federally threatened fish species, bull trout, occurs in the Dungeness River Basin, and effects from an
16 increase in hatchery-origin coho salmon yearlings would provide additional prey for bull trout, which is a
17 benefit. However, bull trout feed on a variety of fish, and the prey benefit of an additional 300,000 coho
18 salmon yearlings would not be different than described in the 2016 EA. Adult bull trout accidentally
19 caught in the Dungeness hatchery trap are immediately removed and returned to the river, and these
20 impacts are not expected to be different because the broodstock collection duration and intensity will
21 remain the same. Other effects include the potential of redd superimposition at bull trout spawning sites
22 from coho salmon adults. However, the increased production is not anticipated to have a detectable
23 additional impact on redd superimposition (USFWS 2018) because the redd superimposition effect of the
24 original 500,000 coho yearling release level was minimal (USFWS 2016).

25
26 *Cumulative Impacts on Other Fish*

27 The cumulative effects of increasing hatchery releases by 300,000 coho salmon yearlings on fish other
28 than salmon and steelhead, when considered along with existing hatchery production across Puget Sound
29 and other human activities in the Dungeness Basin and elsewhere in the Salish Sea, would be
30 undetectable when considering the large number of other fish within the Dungeness River Basin and
31 adjacent marine area. This finding takes into account the number of fish species, overall abundance, and
32 the range of coho salmon in marine waters. The 2016 EA did not find significant cumulative impacts from
33 the existing coho program, when added to other hatcheries and human activities in the region, as the
34 existing hatchery contributed relatively few fish to the marine water environment, limiting its impacts to
35 the direct impacts in the basin. There are no other past, present, and foreseeable future effects on other
36 fish that would be different from those analyzed in the 2016 EA.

37
38 **Direct and Indirect Impacts on Wildlife**

39 The increase of 300,000 hatchery-origin coho salmon yearlings from the Dungeness Hatchery would be a
40 slight benefit for those wildlife species that prey on coho salmon. However, because these smolts out-
41 migrate rapidly from fresh water and then intermingle with a large assortment and abundance of other fish
42 (including other natural-origin and hatchery-origin salmon) within the Dungeness River, the hatchery-
43 origin coho salmon yearlings represent a small component of the diet of wildlife species. Wildlife
44 predators that would primarily benefit from an increase in hatchery-origin coho salmon yearlings in the
45 marine environment are marine mammals and many marine bird species.

46
47 Marine mammals, such as harbor seals and Stellar and California sea lions would individually benefit
48 from the additional Dungeness Hatchery coho salmon production. Harbor seals are the main marine
49 mammal species that occurs in Dungeness Bay (USFWS 2014) and feed on salmon (Jeffries et al. 2018).
50 Their local population has been estimated at 100 to 500 individuals (Jeffries et al. 2000) at haul outs in the
51 Dungeness Bay vicinity with observed population increases in the Strait of Juan de Fuca within the past

1 10 years (Jeffries et al. 2018). Harbor seals are considered opportunistic feeders based on diet analyses in
2 south Puget Sound (Jeffries et al. 2018; Lance and Jeffries 2009), with coho salmon representing a small
3 component of their diet that consisted of more than 50 fish species. Thus, although harbor seals may prey
4 on coho salmon juveniles and adults, they would not be expected to substantially predate on the increased
5 coho salmon hatchery production. Effects to marine mammals would be the same as described in the
6 2016 EA.

7
8 The Southern Resident killer whale prefers Chinook salmon as prey but will feed on coho salmon when
9 Chinook salmon are not available. Adult coho salmon are important in the Southern Resident killer
10 whales' diet in inland waters in late summer (Ford et al. 2016). Adult salmon from hatchery releases in
11 Puget Sound have partially compensated for declines in natural-origin salmon and may have benefited
12 Southern Resident killer whales (Chasco et al. 2017). Because Southern Resident killer whales are food
13 limited, the contribution of hatchery programs in the Dungeness River Basin to the prey base for Southern
14 Resident killer whales is small but may be biologically meaningful. Due to competition and predation,
15 increased coho production may result in a slight reduction in the number of Chinook salmon produced in
16 the Dungeness River available to Southern Resident killer whales. This reduction in Chinook salmon is
17 expected to be minimal because hatchery coho are expected to migrate quickly to marine areas which
18 reduces the opportunity for these interactions. Over the past 20 years, Southern Resident killer whales
19 have decreased in abundance, and as of January 2019, the Southern Resident killer whale population
20 comprised 75 individuals (Center for Whale Research 2019) with the projected trend in population growth
21 over the next 50 years as downward (NMFS 2016b). During the spring, summer, and fall, the whales
22 spend a substantial amount of time in inland waterways of the Strait of Georgia, Strait of Juan de Fuca,
23 and Puget Sound (Bigg 1982; Ford et al. 2000; Hanson and Emmons 2010; Hauser et al. 2007; Krahn et
24 al. 2002). There are a low number of whale sightings in the Strait of Juan de Fuca near the Dungeness
25 River throughout the year (Network 2018; NMFS 2008).

26
27 The estimated annual return of hatchery-origin coho salmon to the Strait of Juan de Fuca from an increase
28 of 300,000 Dungeness Hatchery coho salmon yearlings is 4,875 adults (Haggerty 2019). This anticipates
29 the expected natural and harvest mortality of adults returning from the Pacific Ocean. The returning adult
30 coho salmon are available for consumption by Southern Resident killer whales and other marine
31 mammals, are available for harvest, and may incur other incidental mortality. In combination with other
32 coho salmon adult mortality in the Strait of Juan de Fuca, the increased hatchery production would result
33 in a similar benefit to wildlife as described in the 2016 EA.

34
35 Coho salmon prey on invertebrates (amphipods, decapods, euphausiids) and fish. The increase in coho
36 salmon yearlings within the Dungeness River may slightly decrease the availability of these prey, but the
37 rapid outmigration of coho salmon yearlings would result in the same conclusion as that described in the
38 2016 EA, which is an unsubstantial effect on coho salmon prey. Coho salmon do not compete with
39 wildlife for food.

40 41 *Cumulative Impacts on Wildlife*

42 With ongoing climate variability and resulting effects on the environment due to climate change, wildlife
43 populations will change slightly from year to year with some wildlife populations increasing and others
44 decreasing. The production of additional coho salmon yearlings would not cause a cumulative impact to
45 wildlife when taken together with other impacts including expected effects to wildlife from climate
46 change. There are no other past, present, and foreseeable future activities that could change conditions
47 within the Dungeness River Basin and adjacent marine environment or affect wildlife abundance and
48 presence. As a result, the 300,000 additional coho salmon yearlings from the Dungeness Hatchery would
49 have no additional cumulative impacts on wildlife that would be different from those analyzed in the 2016
50 EA.

1 **Direct and Indirect Impacts on Socioeconomics**

2 Coho salmon from the increased production will also be available for harvest, particularly in the Strait of
3 Juan de Fuca and Dungeness River Basin terminal areas. As described in the 2016 EA, Jamestown
4 S’Klallam tribal commercial, ceremonial, and subsistence fisheries for Dungeness River Basin coho
5 salmon occur seasonally in Dungeness Bay and the lower Dungeness River. A WDFW-managed non-
6 Indian commercial skiff gillnet fishery in Dungeness Bay also targets returning coho salmon surplus to
7 escapement needs. These tribal and WDFW net fisheries predominantly harvest hatchery-origin coho
8 salmon produced by the Dungeness River Hatchery, but natural-origin coho salmon also contribute to
9 annual harvests.

10
11 Recreational fisheries for coho salmon managed by WDFW also occur in the Dungeness River and
12 Dungeness Bay. WDFW’s most recent sport fishing regulations for the Dungeness River and Marine Area
13 6 (adjacent to the Dungeness River mouth) have size limits, daily limits, and require the release of
14 natural-origin coho salmon (WDFW 2018). The coho salmon program also contributes to regional
15 fisheries outside the Dungeness River Basin.

16
17 The increased production would slightly increase the number of coho salmon available in the marine
18 environment, thus resulting in a potential increase in coho salmon available for harvest. The coho salmon
19 fishery in the Strait of Juan de Fuca represents 23 percent of the gross economic value of the salmon and
20 steelhead fishery for the Strait of Juan de Fuca (\$859,499), while the total Dungeness fishery represents 3
21 percent of the total commercial fishery value in the Strait of Juan de Fuca (NMFS 2014). However, as
22 described in the 2016 EA, the overall socioeconomic effects under existing conditions for harvest of all
23 salmon and steelhead species in Dungeness Bay and Dungeness River are unsubstantial, generating less
24 than \$25,000 per year for the commercial fishery and an unknown value for the recreational fishery. The
25 values are smaller when only considering the hatchery-origin coho salmon fishery. Thus, the adult coho
26 salmon resulting from increased production would provide for a negligible beneficial increase in harvest
27 since these adult salmon would be available for both harvest and natural mortality as the adult fish enter
28 the Puget Sound. Effects to socioeconomics from increased production would not be substantially
29 different than analyzed in the 2016 EA.

30
31 The Dungeness River Hatchery also employs staff to manage and operate the hatchery. The increase in
32 work effort for the additional 300,000 coho salmon yearlings would not result in changes in employment
33 or hatchery operations that are different than those described in the 2016 EA. Thus, effects on
34 employment and expenditures at the hatchery from the updated action of increased hatchery production
35 are the same as described in the 2016 EA.

36
37 *Cumulative Impacts on Socioeconomics*

38 No other past, present, and foreseeable future activities have been identified that could have a cumulative
39 effect when combined with the anticipated slight increase in returns of Dungeness Hatchery coho salmon
40 with the updated action of increased hatchery production. As a result, there are no socioeconomic
41 cumulative impacts that would be different from those analyzed in the 2016 EA.

42
43 **4. CONCLUSION**

44 After considering the available new information and circumstances, and the updated action, NMFS has
45 determined that there is no need to supplement the 2016 EA because: (1) the updates to the proposed
46 action that are relevant to environmental considerations are not substantial; and (2) the new circumstances
47 or information relevant to environmental concerns and bearing on the updated proposed action or its
48 impacts are not significant under NEPA. As discussed above, the increase in coho hatchery production
49 will cause slight to negligible impacts to salmon and steelhead species in the Dungeness River, as well as
50 negligible impacts to other species in marine waters as well as wildlife. However, none of those changes

1 are substantially beyond the impacts analyzed in the 2016 EA that would warrant a supplemental EA or
2 reconsideration of the 2016 FONSI. Consequently, the 2016 EA and FONSI remain valid and NMFS will
3 continue to rely on them with respect to the proposed action, including the changes discussed herein.
4

5 5. LIST OF PREPARERS

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