UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, a Washington non-profit corporation,

Plaintiff,

v.

BARRY THOM, in his official capacity as Regional Administrator of the National Marine Fisheries Service; CHRIS OLIVER, in his official capacity as the Assistant Administrator for Fisheries of the National Marine Fisheries Service; NATIONAL MARINE FISHERIES SERVICE; WILBUR ROSS, JR., in his official capacity as Secretary of the United States Department of Commerce; and UNITED STATES DEPARTMENT OF COMMERCE,

Defendants.

No. 2:20-cv-00417

COMPLAINT

I. INTRODUCTION

1. In 1995, there were 98 Southern Resident Killer Whales. Today, there are 72. The Southern Resident Killer Whales have been listed under the Endangered Species Act ("ESA"), 16 U.S.C. §§ 1531–1544, as an endangered species since 2005.

2. In July of 2018, the nation watched spellbound as one grieving Southern Resident Killer Whale mother, Tahlequah, carried the body of her dead calf, who had died less than an hour after birth, for seventeen days and across hundreds of miles before finally letting him sink. Shortly

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thereafter in September, one of the few remaining females of reproductive age, Scarlet, was presumed dead after disappearing from view. She is believed to have sunk to the seafloor due to extreme emaciation.

3. In January and May of 2019, the first two calves to survive more than a few days after birth since 2015 were born. Despite this glimmer of hope, in August three more Southern Residents perished. In January of this year, another Southern Resident Killer Whale disappeared and is believed dead.

4. The primary cause of this rapid population decline is the declining availability of Southern Resident Killer Whale's primary prey, adult Chinook salmon, many populations of which are themselves listed as threatened species under the ESA. This lack of prey has resulted in starvation for existing Southern Residents, and a dearth of live births to sustain the population of Southern Resident Killer Whales. In addition to starvation, the Southern Residents are also adversely and cumulatively affected by toxic contaminants in their environment, vessel noise, and other disturbances.

5. Defendants the Secretary of Commerce and the National Marine Fisheries Service ("NMFS"), to which the Secretary has delegated duties, are responsible for managing fisheries within the Exclusive Economic Zones of the United States. Because Chinook salmon populations are migratory and regularly cross international borders, commercial fishing of Chinook salmon populations has been restricted by the Pacific Salmon Treaty between the United States and Canada since 1985. This Treaty has been regularly renegotiated, including in 1992, 1998, 2008, and 2019. The Pacific Salmon Treaty sets an upper limit on harvest levels in coastal and inland marine waters from Southeast Alaska to Oregon and in the Columbia and Snake Rivers. The fishery regimes established in the 2019 Pacific Salmon Treaty are effective for ten years; through 2028. Defendants are empowered to further restrict harvests under applicable federal laws, including as necessary to protect imperiled species under the ESA.

6. NMFS recently prepared a biological opinion to consider the effects of its ongoing management over, and delegation of certain authority to the State of Alaska for, the salmon

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fisheries within the Exclusive Economic Zone of Southeast Alaska pursuant to the renegotiated Pacific Salmon Treaty entitled *the Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response, Consultation on the Delegation of Management Authority for Specified Salmon Fisheries to the State of Alaska, NMFS Consultation Number: WCR-2018-10660* (April 5, 2019) ("2019 SEAK BiOp").

7. Those fisheries harvest wild- and hatchery-origin salmon originating in rivers from Oregon to Alaska, including four Chinook salmon evolutionary significant units ("ESU") that are listed as threatened under the ESA: Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon. These four Chinook salmon ESU's are failing to meet recovery standards, including those set for spawning escapement, and the fisheries in the Exclusive Economic Zone of Southeast Alaska will continue to contribute to that failure.

8. With respect to the Southern Resident Killer Whale, the 2019 SEAK BiOp did not disguise the issue. It explicitly acknowledged that the Southern Resident Killer Whale has a high risk of extinction due largely to low fecundity rates. It attributed this reduced fecundity to reduced prey abundance; primarily, Chinook salmon. It plainly stated "[u]nder the existing management and recovery regimes over the last decade, salmon availability has not been sufficient to support Southern Resident population growth." It acknowledged that a recent population viability assessment indicated that effects of prey abundance has the largest impact on the population growth rate and that Chinook abundance would need to increase by 15% to achieve the recovery target growth rate set for the Southern Resident Killer Whale.

9. The 2019 SEAK BiOp explained that attempts were made during the recent negotiations between the United States and Canada that culminated in the 2019 Pacific Salmon Treaty to reduce harvests to conserve the Southern Resident Killer Whale and Puget Sound Chinook salmon, but that those efforts were unsuccessful.

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10. The 2019 SEAK BiOp found that Chinook salmon harvests within the Exclusive Economic Zone of Southeast Alaska contemplated under the 2019 Pacific Salmon Treaty will continue to reduce Chinook salmon prey available to Southern Resident Killer Whales in various seasons and locations. NMFS estimated such reductions of prey available in coastal waters to range from 0.2% to 12.9%, with the greatest reductions occurring in July through September. Reductions in the inland waters were estimated to range from 0.1% to 2.5%, with the greatest reductions similarly occurring from July through September. Some of the Chinook salmon caught in the fishery have been identified by NMFS as priority stocks for Southern Resident Killer Whales. NMFS estimated that the fisheries in the Exclusive Economic Zone of Southeast Alaska reduce the larger Chinook salmon—those from 3 to 5 years old—from the Southern Resident's critical habitat by 0.1% to 2.5%. Available data indicate that Southern Resident Killer Whales consume mostly these larger and older Chinook salmon.

11. Instead of reducing the commercial salmon fisheries in the Exclusive Economic Zone of Southeast Alaska to protect Southern Resident Killer Whales and Puget Sound Chinook salmon, the 2019 SEAK BiOp relies on massive new and ill-defined mitigation proposals in a supposed effort to offset negative impacts of reduced prey availability to the Southern Residents. The hypothetical mitigation includes substantial increases in hatchery production of Chinook salmon, primarily in Puget Sound but also in the Columbia River and on the Washington Coast. These mitigation measures are all undeveloped and unfunded. Further, the hatchery programs themselves pose threats to wild salmonids and will suppress recovery of threatened Chinook salmon ESUs, including Puget Sound Chinook salmon. The mitigation measures that the 2019 SEAK BiOp relies upon thus require various reviews and authorizations, including under the ESA, before they can be implemented. These mitigation measures therefore may never be implemented or may be substantially altered.

12. NMFS's 2019 SEAK BiOp nonetheless assumes that the mitigation measures will meaningfully increase prey available to Southern Resident Killer Whales to support a conclusion that the Southeast Alaska salmon fisheries contemplated under the 2019 Pacific Salmon Treaty

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are not likely to jeopardize the continued existence of the Southern Resident Killer Whales or result in the adverse modification or destruction of its critical habitat. NMFS similarly found that the fisheries are not likely to jeopardize Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon. NMFS therefore included an incidental take statement in the 2019 SEAK BiOp authorizing, without reduction, the full extent of Chinook salmon harvest within the Exclusive Economic Zone of Southeast Alaska allowed under the 2019 Pacific Salmon Treaty.

13. Plaintiff Wild Fish Conservancy challenges Defendants' failure to ensure that their management and authorization of salmon fisheries within the Exclusive Economic Zone of Southeast Alaska is not likely to jeopardize threatened or endangered species or result in the adverse modification or destruction of such species' critical habitat as required under section 7(a)(2) of the ESA. Wild Fish Conservancy further challenges Defendants' failure to comply the ESA and the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321–4370m-12, in issuing the 2019 SEAK BiOp. Wild Fish Conservancy seeks declaratory and injunctive relief requiring Defendants to comply with the ESA and NEPA and to protect imperiled Southern Resident Killer Whales and Chinook salmon.

II. PARTIES

14. Plaintiff Wild Fish Conservancy is a membership-based 501(c)(3) nonprofit organization incorporated in the State of Washington with its principal place of business in Duvall, Washington. Wild Fish Conservancy is dedicated to the preservation and recovery of Washington's native fish species and the ecosystems upon which those species depend. Wild Fish Conservancy brings this action on behalf of itself and its approximately 2,400 members. Wild Fish Conservancy changed its name from "Washington Trout" in 2007. As an environmental watchdog, Wild Fish Conservancy actively informs the public on matters affecting water quality, fish, and fish habitat in the State of Washington through publications, commentary to the press, and sponsorship of educational programs. Wild Fish Conservancy also conducts field research on wild fish populations and has designed and implemented habitat restoration projects. Wild Fish

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Conservancy has lobbied, litigated, and publicly commented on federal and state actions that affect the region's native fish and ecosystems. Wild Fish Conservancy routinely seeks to compel government agencies to follow the laws designed to protect native fish species, particularly threatened and endangered species. Wild Fish Conservancy's members and representatives have met, negotiated, and worked closely with NMFS personnel concerning salmon populations, harvesting, and habitat restoration, and Southern Resident Killer Whales.

15. Wild Fish Conservancy's members regularly spend time in areas in and around the waters occupied by Southern Resident Killer Whales, including waters around the San Juan Islands, Strait of Juan de Fuca, and along the Pacific Coast. Wild Fish Conservancy's members also regularly spend time in and around waters occupied by Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon. Wild Fish Conservancy' members intend to continue to visit these areas on a regular basis, including in the coming months and beyond. These members observe, study, photograph, and appreciate wildlife and wildlife habitat in and around these waters. These members also fish in and around these waters. Wild Fish Conservancy's members would like to fish in these waters for wild Chinook salmon if those species were able to recover to a point where such activities would not impede the species' conservation and restoration.

16. Wild Fish Conservancy's members derive scientific, educational, recreational, health, conservation, spiritual, and aesthetic benefits from the Southern Resident Killer Whales and wild native Chinook species in those waters and from the existence of natural, wild and healthy ecosystems.

17. The past, present, and future enjoyment of Wild Fish Conservancy's interests and those of its members, including the recreational, aesthetic, spiritual, and scientific interests, have been, are being, and will continue to be harmed by Defendants' failures to comply with the ESA and NEPA as described herein and by Wild Fish Conservancy's members' reasonable concerns related to Defendants' violations. These injuries include reduced enjoyment of time spent in and around these areas, fewer visits to those areas than would otherwise occur, and refraining from

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engaging in certain activities while visiting these areas, such as fishing, than would otherwise occur. These injures also include an inability or unwillingness to fish for wild salmonids due to their depressed status.

18. Wild Fish Conservancy and its members have suffered procedural and informational harms connected to their substantive, conservation, recreational, and scientific activities resulting from Defendants' violations. Wild Fish Conservancy and its members rely, in part, on adequate ESA consultation and NEPA evaluation processes to provide information, protect threatened and endangered species, and prevent environmental harms. Defendants' failure to comply with these statutes has deprived Wild Fish Conservancy and its members of public comment opportunities and information, thereby harming their efforts to effectively advocate for and protect their interests.

19. Wild Fish Conservancy's injuries and those of its members are actual, concrete and/or imminent, and are fairly traceable to Defendants' violations of the ESA and NEPA as described herein that the Court may remedy by declaring that Defendants' actions are illegal and issuing statutory and injunctive relief vacating Defendants' actions and requiring Defendants to comply with their statutory obligations.

20. Defendant Barry Thom is the West Coast Regional Administrator of NMFS and is being sued in that official capacity. Regional Administrator Thom has responsibility at the regional level for ensuring that NMFS complies with applicable legal requirements. NMFS's West Coast Region issued the 2019 SEAK BiOp challenged herein.

21. Chris Oliver is the Assistant Administrator for Fisheries of the NMFS and is being sued in that official capacity. Assistant Administrator Oliver is responsible for ensuring that NMFS complies with applicable legal requirements.

22. Defendant NMFS is an office within the National Oceanic and Atmospheric Administration, which is an agency within the United States Department of Commerce. NMFS has been delegated responsibilities by the Secretary of Commerce to manage fisheries and to protect imperiled species under the Magnuson-Stevens Fishery Conservation and Management

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Act ("Magnuson-Stevens Act"), 16 U.S.C. §§ 1801–1891d, and the ESA. NMFS issued the 2019 SEAK BiOp challenged herein.

23. Defendant Wilbur Ross is the Secretary of Commerce and is being sued in that official capacity. The Secretary is vested with authority to manage fisheries and to protect imperiled species under the Magnuson-Stevens Act and the ESA. The Secretary has the duty and authority to conserve and recover the Southern Resident Killer Whales and threatened Chinook salmon and is responsible for the violations alleged in this case. Secretary Ross is responsible for ensuring that the United States Department of Commerce, including the agencies within the Department, complies with applicable legal requirements.

24. The United States Department of Commerce in an executive department of the United States. The Department of Commerce, through its Secretary, is responsible for managing fisheries and protecting imperiled species under the Magnuson-Stevens Act and the ESA.

III. JURISDICTION & VENUE

25. This Court has jurisdiction under the Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701–706, section 11(g) of the ESA, 16 U.S.C. § 1540(g), and 28 U.S.C. § 1331 (federal question). The requested relief is proper under the ESA, 16 U.S.C. § 1540(g)(1)(A), the APA, 5 U.S.C. § 706, 28 U.S.C. § 2201 (declaratory relief), and 28 U.S.C. § 2202 (injunctive relief). As required by the ESA citizen suit provision, 16 U.S.C. § 1540(g)(2)(A)(i), Wild Fish Conservancy provided sixty days' notice of its intent to sue through a letter dated and postmarked January 9, 2020. A copy of that letter is attached as Exhibit 1 to this Complaint.

26. The ESA, 16 U.S.C. § 1540(g)(1)(A), and the APA, 5 U.S.C. § 702, waive the sovereign immunity of the Defendants for these claims.

27. The Western District of Washington is the proper venue under 28 U.S.C. § 1391(e) and 16 U.S.C. § 1540(g)(3)(A) because the violations alleged, and/or substantial parts of the events and omissions giving rise to the claims, occurred and are occurring within such District. For example, Defendants actions jeopardize the continued existence of the endangered Southern Resident Killer Whales and will adversely modify its critical habitat within the Salish Sea in the

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Western District of Washington. Likewise, Defendants' actions jeopardize the continued existence of, among others, threatened Puget Sound Chinook salmon that rear in rivers within the Western District of Washington. Additionally, the 2019 SEAK BiOp challenged herein requires massive increases in Chinook salmon production in Puget Sound within the Western District of Washington, programs that would themselves hinder recovery of the threatened Puget Sound Chinook salmon ESU.

IV. FACTS

A. Statutory Background

1. The Endangered Species Act

28. When Congress enacted the Endangered Species Act, it recognized that some species of fish, wildlife, and plants have been "so depleted in numbers that they are in danger of or threatened with extinction." 16 U.S.C. § 1531(a)(2). It stated that "these species of fish, wildlife, and plants are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people." *Id.* § 1531(a)(3).

29. Congress enacted the ESA, in part, to provide a "means whereby the ecosystems upon which endangered species and threatened species depend may be conserved." *Id.* § 1531(b). The ESA established that it is "the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act." *Id.* § 1531(c)(1). The ESA defines "conservation" to mean "the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary." *Id.* § 1532(3).

30. The ESA charges the Secretaries for the United States Departments of Commerce and Interior with administering and enforcing the ESA, who have delegated such responsibilities to NMFS and the United States Fish and Wildlife Service ("FWS"), respectively. 50 C.F.R. § 402.01(b). NMFS generally has ESA authority for marine and anadromous species, while FWS has jurisdiction over terrestrial and freshwater species. *See id.* §§ 17.11, 223.102, 224.101.

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31. The ESA seeks to protect imperiled species, defined to include a "distinct population segment of any vertebrate species that interbreeds when mature," by listing them as "endangered" or "threatened" and by designating their critical habitat. 16 U.S.C. §§ 1532(16), 1533(a); 50 C.F.R. § 424.02. A species is "endangered" if it "is in danger of extinction throughout all or a significant portion of its range." *Id*. § 1532(6).

32. Section 9 of the ESA generally makes it unlawful for "any person" to "take" an endangered species. *Id.* § 1538(a)(1). The take prohibition has been applied to certain species listed as threatened under the statute though regulations promulgated by NMFS under section 4(d) of the ESA, 16 U.S.C. § 1533(d). *See* 50 C.F.R. §§ 223.102, 223.203(a). Section 9 of the ESA prohibits a violation of those regulations. 16 U.S.C. § 1538(a)(1)(G).

33. A "person" includes private parties as well as local, state, and federal agencies. 16 U.S.C. § 1532(13). The ESA defines "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." *Id.* § 1532(19). "Harm" is defined broadly by regulation as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 222.102.

34. Section 7 of the ESA imposes a substantive obligation on all federal agencies to "*insure* that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of" habitat that has been designated as critical for such species. *See* 16 U.S.C. § 1536(a)(2) (emphasis added); *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).

35. ESA regulations define "[j]eopardize the continued existence of" as "to engage in an action that reasonably would be expected, either directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." 50 C.F.R. § 402.02. Destruction or adverse

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modification of critical habitat occurs where there is a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species. *Id.* Recovery is defined as "improvement in the status of listed species to the point at which listing is no longer appropriate." *Id.*

36. When an agency (the "action agency") determines that its proposed action "may affect listed species," section 7(a)(2) of the ESA requires that it consult with NMFS and/or FWS (the "consulting agency") for the species at issue using "the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.14(a). This interagency consultation process is intended to assist the action agencies in complying with their substantive section 7(a)(2) duty to guard against jeopardy to listed species or destruction or adverse modification of critical habitat.

37. Consultation under section 7(a)(2) of the ESA requires the consulting agency to review all relevant information; evaluate the current status of the listed species and/or critical habitat; evaluate the effects of the action and cumulative effects on the listed species and/or critical habitat; formulate a biological opinion as to whether the action, taken together with cumulative effects, is likely to jeopardize the continued existence of listed species and/or result in the destruction or adverse modification of critical habitat; identify reasonable and prudent alternatives if such jeopardy or adverse modification is found; and formulate an incidental take statement ("ITS"). 50 C.F.R. § 402.14(g); *see also* 16 U.S.C. § 1536(b)(3)(A), (b)(4).

38. The jeopardy analysis requires the consulting agencies to consider the aggregate effect of past and ongoing human activities that affect the current status of the species and its habitat ("environmental baseline"); the indirect and direct effects of the proposed action, including the effects of interrelated and interdependent activities ("effects of the action"); and the effects of future state and private activities that are reasonably certain to occur ("cumulative effects"). 50 C.F.R. §§ 402.02, 402.14(g).

39. The consulting agency's biological opinion must include a summary of the information upon which the opinion is based, a detailed discussion of the effects of the action, and

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if jeopardy or adverse modification is found, reasonable and prudent alternatives to the action that will avoid jeopardy and/or adverse modification. 50 C.F.R. § 402.14(h).

40. If the consulting agency concludes the action will not jeopardize listed species or adversely modify their critical habitat, the consulting agency must include with the biological opinion an incidental take statement. 16 U.S.C. § 1536(b)(4); 50 C.F.R. § 402.14(i)(1). An incidental take statement must specify the impact of the action by setting a numeric limit on take (or an appropriate surrogate if a numeric cap is impractical to establish), identify "reasonable and prudent measures" that will minimize impacts to protected species, and "terms and conditions" to implement these measures. 16 U.S.C. § 1536(b)(4)(C)(i)–(ii), (iv); 50 C.F.R. § 402.14(i)(1)(i)–(ii), (iv). The incidental take statement must including monitoring and reporting requirements for the incidental take resulting from the action. *See* 50 C.F.R. § 402.14(i)(3); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 531–32 (9th Cir. 2010).

41. The take of a listed species in compliance with the terms of a valid incidental take statement is not prohibited under Section 9 of the ESA. 16 U.S.C. § 1536(o)(2); 50 C.F.R. § 402.14(i)(5).

42. Section 7 of the ESA imposes a continuing duty on the agencies following consultation to insure that the action will not jeopardize species. *See Wild Fish Conservancy*, 628 F.3d at 525. Agencies must reinitiate consultation for actions where "discretionary Federal involvement or control over the action has been retained or is authorized by law" if, *inter alia*, "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 . . . [,]" or where "a new species is listed or critical habitat designated that may be affected by the identified action." 50 C.F.R. § 402.16(a)–(d).

2. <u>The National Environmental Policy Act</u>

43. The purpose of NEPA is, inter alia, to declare a national policy that will encourage productive and enjoyable harmony between man and his environment, to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and

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welfare of man, and to enrich the understanding of the ecological systems and natural resources important to the Nation. 42 U.S.C. § 4321.

44. NEPA requires federal agencies to undertake processes to "insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken" and that are "intended to help public officials make decisions that are based on understanding of environmental consequences." 40 C.F.R. §§ 1500.1(b) and (c).

45. To accomplish these purposes, NEPA requires federal agencies to prepare a "detailed statement" regarding all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C).

46. The "detailed statement," commonly known as an environmental impact statement ("EIS"), must describe the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, alternatives to the proposed action, the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

47. If a proposed action is neither one that normally requires an EIS or that normally does not require an EIS, the agency must prepare an environmental assessment ("EA") to determine whether an EIS is required. 40 C.F.R. § 1501.4(a), (b).

48. If the agency determines through the EA process that an EIS is not required for the proposed action, then the agency is required to issue a finding of no significant impact ("FONSI"). 40 C.F.R. § 1501.4(e).

49. Regulations promulgated by the Council on Environmental Quality ("CEQ") direct agencies to consider certain factors when considering whether a particular proposed action requires preparation of an EIS, including, inter alia, whether the action may adversely affect an endangered or threatened species listed under the ESA or its critical habitat. 40 C.F.R. § 1508.27.

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50. NEPA further provides that agencies "shall . . . study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E).

51. Agencies must supplement a prior EIS or EA if there are "substantial changes in the proposed action that are relevant to environmental concerns" or "significant new circumstances or information relevant to environmental concerns and bearing on the action or its impacts." 40 C.F.R. § 1502.9(c)(1); *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1152 (9th Cir. 1998), *overruled on other grounds*, *Lands Council v. McNair*, 537 F.3d 981, 997 (9th Cir. 2008). "As a rule of thumb . . . , if the EIS concerns an ongoing problem, EISs that are more than 5 years old should be carefully reexamined to determine if the criteria in [the NEPA regulations on supplementation] compel preparation of an EIS supplement." Council on Envtl. Quality, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18,026, 18,035 (Mar. 23, 1981).

3. The Magnuson-Stevens Act

52. The Magnuson-Stevens Act seeks to "conserve and manage the fishery resources found off the coasts of the United States." 16 U.S.C. § 1801(b)(1).

53. The statute establishes exclusive federal management over fisheries within the Exclusive Economic Zones of the United States. *Id.* § 1811(a). The Exclusive Economic Zone, referred to as "federal waters," generally consists of those waters from three nautical miles from the coastline to 200 nautical miles from the coastline. *See id.* § 1802(11); Presidential Proclamation 5030, 48 Fed. Reg. 10,605 (Mar. 14, 1983).

54. The statute assigns implementation responsibilities to the Secretary of Commerce, who has generally delegated responsibilities to NMFS. *See, e.g.,* 16 U.S.C. §§ 1854, 1855(d); U.S. Dep't of Commerce, *Department Organization Order* 10-15, § 3.01(aa) (Dec. 12, 2011);[1] U.S.

[1] *Available at* http://www.osec.doc.gov/opog/dmp/doos/doo10_15.html.

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Dep't of Commerce, *NOAA Organizational Handbook Transmittal No. 61*, Part II(C)(26).[2] The statute also provides for Regional Fishery Management Councils. 16 U.S.C. § 1852(a)(1).

55. The Regional Fishery Management Councils are to prepare fishery management plans and amendments to such plans for each fishery under their respective jurisdiction and submit the plans to NMFS. *Id.* § 1852(h)(1). The fishery management plans must contain, inter alia, management measures necessary to prevent overfishing and that are consistent with other applicable laws. *Id.* § 1853(a)(1).

56. NMFS must review all fishery management plans, including amendments thereto, to determine whether they are consistent with the Magnuson-Stevens Act "and any other applicable law." *Id.* § 1854(a)(1)(A). The fishery management plans are to be approved, disapproved, or partially approved by NMFS. *Id.* § 1854(a)(3).

57. The Regional Fishery Management Councils are also to submit proposed regulations to NMFS designed to implement the fishery management plans, which NMFS will promulgate if it deems them to be consistent with the plans and other applicable laws. *Id.* §§ 1853(c), 1854(b).

58. The statute assigns primary responsibility in carrying out and implementing fishery management plans to NMFS. *See id.* § 1855(d).

59. The Magnuson-Stevens Act provides that a State may regulate a fishing vessel outside the boundaries of the State—i.e., in the Economic Exclusive Zone—where a fishery management plan delegates such authority to the State and the State's fishing laws and regulations are consistent with the fishery management plan. *Id.* § 1856(a)(3)(B). If NMFS determines that the State's laws or regulations do not comply with the fishery management plan, NMFS shall provide the State notice and an opportunity to correct the deficiency. *Id.* If the inconsistency is not corrected, the delegation of authority to the State "shall not apply until [NMFS] and the appropriate Council find that the State has corrected the inconsistencies." *Id.*

[2] A*vailable at* http://www.corporateservices.noaa.gov/ames/delegations_of_authority/.

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4. The Administrative Procedure Act

60. The APA governs the judicial review of certain federal agency actions. 5 U.S.C. §§ 701–706.

61. Under the APA, courts shall "compel agency action unlawfully withheld or unreasonably delayed," *id*. § 706(1), and "hold unlawful and set aside agency action, findings, or conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" or made "without observance of procedure required by law." *Id*. § 706(2)(A), (D). Agency action includes an agency's "failure to act." *Id*. § 551(13).

62. An agency action is "arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n. v. State Farm Mutual Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

63. Under the APA, a court must also "hold unlawful and set aside" any agency action taken that is "in excess of statutory jurisdiction, authority, or limitations, or short of statutory right." 5 U.S.C. § 706(2)(C).

B. The Endangered and Threatened Species

1. Southern Resident Killer Whales

64. Southern Resident Killer Whales, also known as orcas, are charismatic black and white marine mammals that are an icon of the Pacific Northwest. They are intelligent, social animals that live in highly organized groups known as pods. These killer whales form strong social bonds and have been observed sharing the responsibilities of caring for the young, sick, and injured.

65. NMFS listed the Southern Resident Killer Whales as an endangered species in 2005. 70 Fed. Reg. 69,903 (Nov. 18, 2005); *see also* 50 C.F.R. § 224.101(h). Critical habitat was

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designated for this species the following year. 71 Fed. Reg. 69,054 (Nov. 29, 2006); *see also* 50 C.F.R. § 226.

66. This salmon-dependent whale population typically congregates in the inland waters of Puget Sound in the summer, fall, and late spring months but it also ranges all along the coast of Washington, Oregon, and California, as far south as Monterey Bay, particularly in the winter and spring in search of Chinook salmon, its preferred prey.

67. In 2008, NMFS issued a recovery plan for Southern Resident Killer Whales under section 4(f) of the ESA, 16 U.S.C. § 1533(f). The recovery plan identified prey availability as a threat to the killer whales. The plan prioritized the management of this threat through salmon restoration efforts in the region, including habitat, harvest, and hatchery management considerations, and the continued use of existing authorities under the ESA and Magnuson-Stevens Act "to ensure an adequate prey base." The 2008 recovery plan specified that an important criteria for evaluating whether recovery has been achieved will be if NMFS has sufficient knowledge of the foraging ecology of Southern Residents "to determine that established fishery management regimes are not likely to limit the recovery of the whales." The plan elaborates that this would include "[f]isheries management programs that adequately account for predation by marine mammal populations when determining harvest limits, hatchery practices, and other parameters."

68. Today, fifteen years since their listing, and twelve years since the institution of the recovery plan, the Southern Resident Killer Whale population continues to decline, and remain in a perilous state. This decline is so significant that in 2016 NMFS announced that the Southern Resident Killer Whale is one of eight "Species in the Spotlight," a designation designed to call special attention to marine species most likely to go extinct in the near future, unless immediate action is taken. As this designation made clear, the threats that led to the whales' initial listing persist, and indeed have worsened.

69. In this context, federal agencies' careful and thorough consideration of potential impacts to the species is of paramount importance. Indeed, in biological opinions prepared for

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other activities, NMFS has repeatedly concluded that "the loss of a single individual, or the decrease in reproductive capacity of a single individual, is likely to reduce the likelihood of survival and recovery of the species." *See, e.g.*, "Biological Opinion and Conference Opinion on the Long-Term Operations of the Central Valley Project and State Water Project" at 573 (June 4, 2009).

70. Southern Resident Killer Whales are distinct from other killer whales. They are residents of the Salish Sea and have a unique dialect and diet. Their diet consists entirely of fish, primarily mature Chinook salmon.

71. The major threats that led to the Southern Resident Killer Whale's population decline and subsequent listing under the ESA are (1) the decline of salmon, their primary prey; (2) noise and vessel impacts; and (3) habitat destruction and pollution including the presence of toxins in the environment and in their food.

72. Scientists have concluded that insufficient availability of prey is a critical factor causing poor body condition, nutritional stress, and the decline of the Southern Resident Killer Whale. Nutritional stress leads to fat metabolism and the subsequent release of stored toxins, which can contribute to further stress and reproductive failure.

73. In 2017, scientists conducted a population viability assessment that considered the sub-lethal effects and cumulative impacts of contaminants, acoustic disturbance, and prey abundance and tested a range of scenarios. They concluded that the effects of prey abundance on fecundity and survival had the largest impact on the Southern Resident Killer Whale's population growth rate.

2. <u>Chinook Salmon</u>

74. Chinook salmon are the largest of the Pacific salmon, with some individuals growing to more than 100 pounds.

75. Chinook salmon are found from the Arctic, northwest to northern Pacific: drainages from Point Hope, Alaska down to Ventura River, California. They are also found in Honshu Japan, the Sea of Japan, the Bering Sea and the Sea of Okhotsk.

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76. The Puget Sound Chinook salmon evolutionary significant unit ("ESU") has been listed as a threatened species under the ESA since 1999. 64 Fed. Reg. 14,308 (March 24, 1999); *see also* 50 C.F.R. § 223.102(e).

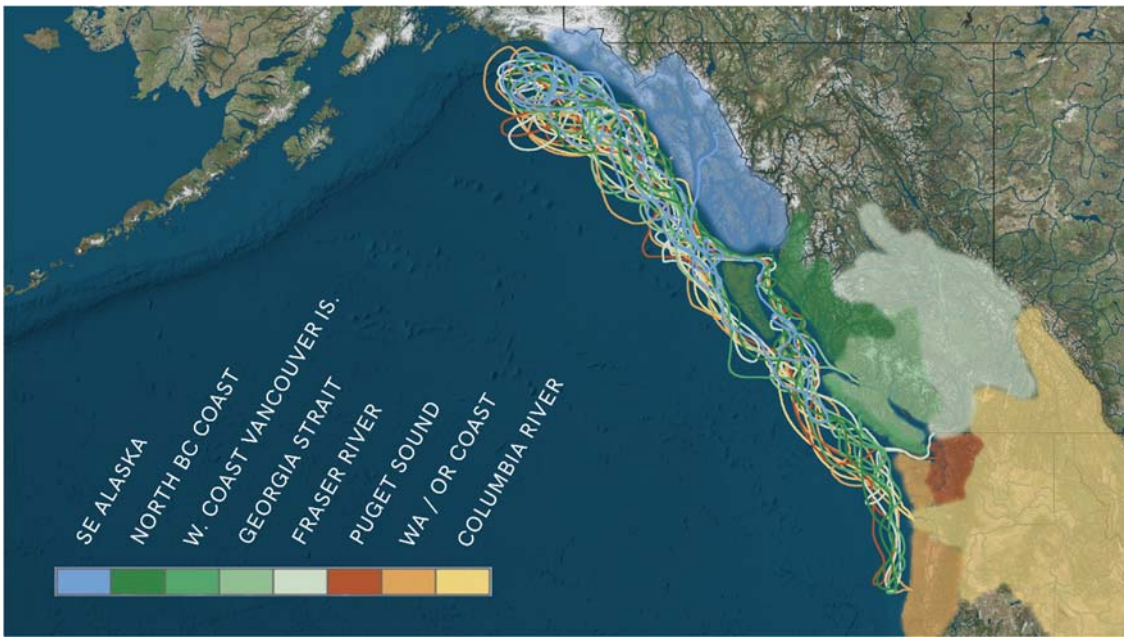
77. The Lower Columbia River Chinook salmon ESU was listed as a threatened species in 1999. 64 Fed. Reg. 14,308 (March 24, 1999); *see also* 50 C.F.R. § 223.102(e).

78. The Upper Willamette River Chinook salmon ESU was also listed as threatened species in 1999. 64 Fed. Reg. 14,308 (March 24, 1999); *see also* 50 C.F.R. § 223.102(e).

79. The Snake River fall-run Chinook salmon ESU was listed as a threatened species in 1992. 57 Fed. Reg. 14,653 (April 22, 1992); *see also* 50 C.F.R. § 223.102(e).

80. All four of these ESUs are failing to meet recovery standards.

81. All four of these ESUs spend at least part of their life cycle in the Southern Resident Killer Whale's primary hunting grounds.



C. The Southeast Alaska Salmon Fisheries

82. The North Pacific Fishery Management Council ("Council"), created under the Magnuson-Stevens Act, is assigned certain fishery responsibilities for the Arctic Ocean, Bering

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Sea, and Pacific Ocean seaward of Alaska. 16 U.S.C. § 1852(a)(1)(G). The Council first developed a salmon fishery management plan for Alaska in 1979 and has since issued numerous amended plans, the most recent of which was completed in 2018. Fishery Management Plan for the Salmon Fisheries in the Exclusive Economic Zone Off Alaska i–ii (Oct. 2018) ("2018 Fishery Management Plan").

83. The 2018 Fishery Management Plan provides for two salmon fisheries: a commercial troll salmon fishery and a sport fishery. *Id.* at 8–9. Both fisheries are conducted in Southeast Alaska; there are no longer commercial salmon fisheries in the Western Alaska area. *Id.* at 9.

84. The 2018 Fishery Management Plan delegates management authority over these fisheries to the State of Alaska. *E.g.*, *id.* at 14. NMFS, however, retains ongoing oversight authority of the State of Alaska's management of these federal fisheries. *Id.* at 54–58. For example, the State of Alaska must provide NMFS with information on the State's fishery management measures, NMFS must determine whether the measures are consistent with the Fishery Management Plan, the Magnuson-Stevens Act, and other applicable laws, and NMFS is to take appropriate corrective action, if necessary. *Id.* NMFS also provides funds to the State of Alaska to manage and monitor the fisheries.

85. The commercial troll fishery harvests primarily Chinook and coho salmon, although chum, sockeye, and pink salmon are also harvested. 2018 Fishery Management Plan 33. The commercial Chinook salmon fishery is divided into two seasons: a winter season and a general summer season; the summer season is further divided into a spring fishery and a summer fishery. *Id.* The winter troll season is defined as October 11 through April 30 and is managed not to exceed a guideline harvest level of 45,000 Chinook salmon. *Id.* The spring troll fishery, which begins after the winter season closes, does not occur within the Exclusive Economic Zone and is not subject to the Fishery Management Plan. *Id.* The summer troll fishery opens on July 1 and targets all remaining Chinook salmon available under the annual quota set pursuant to the Pacific Salmon

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Treaty between the United States and Canada. *Id.* at 34. The regulatory period for coho salmon retention in the troll fishery is June 15 through September 20. *Id.*

86. Salmon fisheries in Alaska are also subject to the Pacific Salmon Treaty, first entered in March of 1985 between the United States and Canada to cooperate in the management, research and enhancement of Pacific salmon stocks of mutual concern. The Treaty was intended to prevent overfishing, provide for optimum production, and ensure that countries receive benefits equal to the production of salmon originating in their waters.

87. The Treaty expired in 1992, and was reauthorized in 1999, establishing 10-year fishery regimes.

88. Following completion of the 1999 Pacific Salmon Treaty, NMFS prepared a programmatic EIS under NEPA to evaluate, inter alia, the effects of its ongoing delegation of authority to the State of Alaska to manage salmon fisheries, NMFS's ongoing review of the State of Alaska's fishery decisions, and the effects of NMFS's issuance of an incidental take statement for the 10-year fishery regimes set in the 1999 Pacific Salmon Treaty. Final Programmatic Environmental Impact Statement for Pacific Salmon Fisheries off the Coasts of Southeast Alaska, Washington, Oregon, and California, and in the Columbia River Basin (Nov. 2003) ("2003 Programmatic EIS"); *see id.* at 1-6 ("The primary federal action being considered under [the North Pacific Fishery Management Council's] jurisdiction in the Southeast Alaska fishery is the annual decision regarding continuing deferral of management to the State and the issuance of an [incidental take statement] through the Section 7 consultation process.").

89. The current iteration of the Pacific Salmon Treaty became effective in 2019 and amended Chapters 1, 2, 3, 5, 6, and Attachment E to Chapter 7 of Annex IV. Treaties and Other International Acts Series 19-503. These amendments are effective from 2019 through 2028. Chapter 3 of Annex IV to the 2019 Pacific Salmon Treaty defines a management regime for the Chinook salmon fisheries.

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D. The 2019 SEAK BiOp

90. NMFS's 2019 SEAK BiOp consulted under section 7(a)(2) of the ESA on the effects of NMFS's ongoing management over, and delegation of authority to Alaska for, the salmon fisheries within the Exclusive Economic Zone of Southeast Alaska. This intra-agency consultation, where NMFS was both the action agency and the consulting agency, evaluated the impacts of the 10-year fishery regime established in the 2019 Pacific Salmon Treaty.

91. These fisheries harvest wild- and hatchery-origin salmon originating in rivers from Oregon to Alaska, including threated Puget Sound Chinook salmon, threatened Lower Columbia River Chinook salmon, threatened Upper Willamette River Chinook salmon, and threatened Snake River fall-run Chinook salmon. The fisheries in the Exclusive Economic Zone of Southeast Alaska will continue to contribute to the failure of these threatened species to meet recovery goals.

92. The 2019 SEAK BiOp explains that attempts were made during the recent negotiations that culminated in the current 2019 Pacific Salmon Treaty to reduce harvests to conserve Puget Sound Chinook salmon and the Southern Resident Killer Whales. Those efforts were unable to achieve the reductions needed to protect those species: "[T]here was a practical limit to what could be achieved through the bilateral negotiation process. As a consequence, and in addition to the southeast Alaska, Canada, and SUS fishery measures identified in the 2019 [Pacific Salmon Treaty], the U.S. Section generally recognized that more would be required to mitigate the effects of harvest and other limiting factors that contributed to the reduced status of Puget Sound Chinook salmon and [Southern Resident Killer Whale] . . . ." 2019 SEAK BiO at 10.

93. NMFS repeatedly explains in the 2019 SEAK BiOp that the Pacific Salmon Treaty merely sets an upper limit on harvest limits and that NMFS can further restrict harvests in the Exclusive Economic Zone of Southeast Alaska to protect imperiled species under the ESA.

94. NMFS's 2019 SEAK BiOp nonetheless includes an incidental take statement that authorizes incidental take of ESA-listed species from the fisheries in the Exclusive Economic Zone of Southeast Alaska in a manner that enables the full extent of Chinook salmon harvest allowed under the Pacific Salmon Treaty.

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95. The 2019 SEAK BiOp does not adequately disclose or analyze the impact of the fisheries on the spawning escapement for the four threatened Chinook salmon ESUs, leaving unclear the extent to which these fisheries are harming the survival and recovery of Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon.

96. The 2019 SEAK BiOp did find that the Southern Resident Killer Whale has a high risk of extinction due largely to low fecundity rates. This reduced fecundity is primarily attributed to reduced prey abundance; largely, Chinook salmon. "Under the existing management and recovery regimes over the last decade, salmon availability has not been sufficient to support Southern Resident population growth." A recent population viability assessment indicated that effects of prey abundance has the largest impact on the population growth rate and that Chinook abundance would need to increase by 15% to achieve the recovery target growth rate set for the Southern Resident Killer Whales.

97. The 2019 SEAK BiOp indicates that the fisheries in the Exclusive Economic Zone of Southeast Alaska will continue to reduce Chinook salmon prey available to the Southern Resident Killer Whales in various seasons and locations. The 2019 SEAK BiOp estimates such reductions of prey available in coastal waters to range from 0.2% to 12.9%, with the greatest reductions occurring in July through September. Reductions in the inland waters are estimated to range from 0.1% to 2.5%, with the greatest reductions similarly occurring from July through September. Some of the Chinook salmon caught in the fishery are identified by NMFS as priority stocks for the Southern Resident Killer Whales. NMFS estimates that the fisheries in the Exclusive Economic Zone of Southeast Alaska reduce the larger Chinook salmon—those from 3 to 5 years old—from the Southern Resident's critical habitat by 0.1% to 2.5%. Available data indicate that Southern Residents consume mostly these larger and older Chinook salmon.

98. The 2019 SEAK BiOp nonetheless concludes that the Southeast Alaska fisheries in federal waters are not likely to jeopardize the continued existence of the Southern Resident Killer Whale or result in the adverse modification or destruction of its critical habitat. The 2019

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SEAK BiOp similarly finds that the fisheries are not likely to jeopardize Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon.

99. In reaching these conclusions, the 2019 SEAK BiOp relies on mitigation measures consisting of three funding initiatives.

100. First, NMFS proposes to provide $3.06 million per year would for Puget Sound Chinook salmon "conservation" hatcheries; specifically, there would be increased funding for existing hatchery programs on the Nooksack, Dungeness, and Stillaguamish Rivers and funding for a new program in mid-Hood Canal.

101. Second, NMFS proposes to provide approximately $31.2 million for habitat recovery projects intended to benefit Puget Sound Chinook salmon in the Nooksack, Dungeness, and Stillaguamish Rivers and Hood Canal.

102. Third, NMFS proposes to fund dramatic increases in Chinook salmon hatchery production to provide a "meaningful increase"—4% to 5%—in prey availability for Southern Resident Killer Whales. NMFS estimates this will cost "no less than $5.6 million per year" and generate 20 million hatchery smolts each year, with five to six million released from Puget Sound hatcheries and the remainder from facilities on the Columbia River and the Washington Coast. *Id.* at 11.

103. These mitigation proposals are unfunded, are to be implemented by entities over whom NMFS has no control, lack any specifics or deadlines, are generally undeveloped, and require reviews and authorizations that may result in the projects being denied or substantially altered. The hatchery programs proposed as mitigation will themselves have harmful impacts on wild salmon populations, including threatened Chinook salmon ESU's, which NMFS has yet to analyze under the ESA or NEPA; such "mitigation" may result in greater harm than benefit. The mitigation measures may never be implemented or may be significantly changed from that contemplated in the 2019 SEAK BiOp. NMFS's reliance on mitigation measures in the 2019 SEAK BiOp was arbitrary, capricious, an abuse of discretion, and inconsistent with the ESA.

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104. The 2019 SEAK BiOp also fails to use the best available scientific and commercial data available and it does not fully and adequately evaluate the effects of the entire action, interrelated and interdependent actions, and the cumulative actions. For example, NMFS fails to appropriately address climate change impacts and impermissibly assumes the benefits from proposed increases to hatchery production without also addressing the harmful impacts to ESA-listed species from such increases. NMFS also fails to adequately evaluate whether the fisheries will harm the Southern Resident Killer Whales by threatening the survival and recovery of Chinook salmon populations that spawn in Canadian waters, such as those in the Fraser River.

105. The 2019 SEAK BiOp does not adequately evaluate whether the Southeast Alaska salmon fisheries will, directly or indirectly, reduce appreciably the likelihood of both the survival and recovery of ESA-listed species in the wild by reducing the reproduction, numbers, or distribution of the species.

106. The 2019 SEAK BiOp does not adequately summarize the information on which the opinion is based or adequately detail the effects the Southeast Alaska salmon fisheries have on listed species and their critical habitat.

107. NMFS failed to draw a rational connection in the 2019 SEAK BiOp between the facts found and its determination that the salmon fisheries are not likely to jeopardize the continued existence of ESA-listed species or result in the destruction or adverse modification of their critical habitat.

108. The incidental take statement included in the 2019 SEAK BiOp is legally deficient because, inter alia, it does not adequately specify the impact or extent of the incidental taking of species, relies on inappropriate surrogates in lieu of numeric take limits, does not include appropriate reasonable and prudent measures to minimize impacts, does not include adequate terms and conditions to implement reasonable and prudent measures, and does not include requirements sufficient to monitor the incidental take of ESA-listed species or to trigger the reinitiation of consultation if the anticipated impacts are exceeded. For example, NMFS impermissibly set the take limit for the Southern Resident Killer Whales to be coextensive with

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the Southeast Alaska salmon fisheries themselves such that even if more take than anticipated occurred, the safe harbor provisions of the incidental take statement would remain in effect and there would not be an obligation to reinitiate consultation.

109. Following issuance of the 2019 SEAK BiOp, NMFS adopted and is implementing that BiOp and the incidental take statement included therewith with respect to its ongoing management over salmon fisheries in the Exclusive Economic Zone of Southeast Alaska, including NMFS's ongoing delegation of authority and funding to the State of Alaska for management and monitoring of the fisheries. For example, the State of Alaska exercised its delegated authority on or about February 11, 2020 in setting the 2020 salmon catch limits for Southeast Alaska to the full extent permitted under the 2019 Pacific Salmon Treaty.[3] Consistent with the 2019 SEAK BiOp, NMFS has not taken any action with respect to that announcement, thereby allowing those limits to become effective under the 2018 Fishery Management Plan.

110. NMFS's issuance of the incidental take statement included in the 2019 SEAK BiOp is a major federal action significantly affecting the quality of the human environment for which an EIS was required under NEPA before the incidental take statement was issued; at a minimum, an EA was required to evaluate whether an EIS is needed.

111. NMFS's adoption and implementation of the 2019 SEAK BiOp and the incidental take statement is a major federal action significantly affecting the quality of the human environment for which an EIS was required; at a minimum, an EA was required to evaluate whether an EIS is needed. Notably, the incidental take statement in the 2019 SEAK BiOp requires that NMFS fund initiatives for massive new hatchery programs that will significantly affect wild salmonids, including ESA-listed Chinook salmon ESUs. Similarly, in adopting the 2019 SEAK BiOp, NMFS has decided to exercise its authority to manage fisheries in the Exclusive Economic Zone of Southeast Alaska to allow the full extent of harvest permitted under the 2019 Pacific Salmon Treaty for the 10-year regime, as it has done with respect to the State of Alaska's February

[3] *See* https://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr&release=2020_02_11; *and* https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1133944615.pdf.

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11, 2020 catch limit announcement, which will significantly affect Southern Resident Killer Whales.

112. There have been significant new circumstances and information relevant to environmental concerns and bearing on the salmon fisheries in the Exclusive Economic Zone of Alaska and the fisheries' impacts since the 2013 Programmatic EIS. These include the 2019 SEAK BiOp and its incidental take statement, NMFS's adoption of the new 10-year fishery regimes in the 2019 Pacific Salmon treaty, the listing and precipitous decline of the Southern Resident Killer Whale, studies on the cause of that decline and on the impacts of climate change, and NMFS's massive mitigation proposals required under the 2019 SEAK BiOp.

113. NMFS did not prepare a new or supplemental EIS, EA, FONSI, or any other NEPA document for its issuance or adoption of the 2019 SEAK BiOp and the incidental take statement.

FIRST CAUSE OF ACTION

Failure to Ensure No Jeopardy Under Section 7(a)(2) of the ESA

114. Defendants Barry Thom, Chris Oliver, NMFS, Wilbur Ross, and the United States Department of Commerce (collectively, "Defendants") are violating of section 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), by adopting and implementing the 2019 SEAK BiOp and its incidental take statement and by continuing to authorize and manage salmon fisheries in the Exclusive Economic Zone of Alaska without ensuring that such fisheries will not jeopardize the continued existence of the endangered Southern Resident Killer Whale, the threatened Puget Sound Chinook salmon ESU, the threatened Lower Columbia River Chinook salmon ESU, the threatened Upper Willamette River Chinook salmon ESU, and the threatened Snake River fall-run Chinook salmon ESU, or destroy or adversely modify the endangered Southern Resident Killer Whale's critical habitat.

115. These violations of the ESA are reviewable under section 11(g) of the ESA, 16 U.S.C. § 1540(g).

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SECOND CAUSE OF ACTION

The 2019 SEAK BiOp is Arbitrary, Capricious, and Not in Accordance with Law

116. NMFS's 2019 SEAK BiOp, including the incidental take statement provided therewith, does not comply with ESA standards and is arbitrary, capricious, an abuse of discretion and not in accordance with law.

117. These violations are reviewable under the APA, 5 U.S.C. §§ 701–706.

THIRD CAUSE OF ACTION

NMFS's Failure to Conduct NEPA Analyses for Issuance/Adoption of 2019 SEAK BiOp

118. NMFS violated NEPA by issuing and/or adopting and implementing the 2019 SEAK BiOp and the incidental take statement included therein without preparing a new or supplemental EIS. Alternatively, NMFS violated NEPA by issuing and/or adopting and implementing the 2019 SEAK BiOp and the incidental take statement included therein without preparing a new or supplemental EA to evaluate whether an EIS is required.

119. This violation is reviewable under the APA, 5 U.S.C. §§ 701–706.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Wild Fish Conservancy prays for the following relief:

A. Issue a declaratory judgment declaring that Defendants are in violation of section 7(a)(2) of the ESA by adopting and implementing the 2019 SEAK BiOp and its incidental take statement and by continuing to authorize and manage salmon fisheries in the Exclusive Economic Zone of Alaska without ensuring that such fisheries will not jeopardize the continued existence of the endangered Southern Resident Killer Whale, the threatened Puget Sound Chinook salmon ESU, the threatened Lower Columbia River Chinook salmon ESU, the threatened Upper Willamette River Chinook salmon ESU, and the threatened Snake River fall-run Chinook salmon ESU, or destroy or adversely modify the endangered Southern Resident Killer Whale's critical habitat;

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B. Issue a declaratory judgment declaring that NMFS's 2019 SEAK BiOp, including the incidental take statement provided therewith, does not comply with ESA standards and is arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with law;

C. Issue a declaratory judgment declaring that NMFS violated NEPA by issuing and/or adopting and implementing the 2019 SEAK BiOp and the incidental take statement included therein without preparing a new or supplemental EIS, or, alternatively, without preparing a new or supplemental EA to evaluate whether an EIS is required;

D. Issue a mandatory injunction requiring Defendants to comply with the ESA and NEPA;

E. Set aside NMFS's 2019 SEAK BiOp, including the incidental take statement issued therewith;

F. Enjoin NMFS from authorizing take associated with salmon fisheries in the Exclusive Economic Zone of Alaska until NMFS complies with the ESA and NEPA;

G. Enjoin Defendants from continuing to delegate authority to the State of Alaska to manage salmon fisheries in the Exclusive Economic Zone of Alaska, from continuing to allow the State of Alaska to implement salmon fisheries in the Exclusive Economic Zone of Alaska, from providing funding to the State of Alaska to manage and monitor salmon fisheries in the Exclusive Economic Zone of Alaska, and from otherwise continuing to allow salmon fisheries in the Exclusive Economic Zone of Alaska until Defendants comply with the ESA and NEPA;

H. Grant such preliminary and/or permanent injunctive relief as Wild Fish Conservancy may from time to time request during the pendency and resolution of this case;

I. Award Wild Fish Conservancy its reasonable litigation expenses, including attorney fees, expert witness fees, Court costs, and other expenses as necessary for the preparation and litigation of this case under section 11(g)(4) of the ESA, 16 U.S.C. § 1540(g)(4), the Equal Access to Justice Act, 28 U.S.C. § 2412 *et seq.*, and/or as otherwise authorized by law; and

J. Grant such additional relief as the Court deems just and proper.

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RESPECTFULLY SUBMITTED this 18th day of March, 2020.

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EXHIBIT 1

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January 9, 2020

Via Certified Mail – Return Receipt Requested

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Secretary Wilbur L. Ross, Jr.
U.S. Department of Commerce
1401 Constitution Ave. N.W.
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RE: Notice of Intent to Sue U.S. Department of Commerce and National Marine Fisheries Service for Failing to Ensure that their Authorization of the Southeast Alaska Salmon Fisheries does not Jeopardize the Continued Existence of the Southern Resident Killer Whale and Four Chinook Salmon Species

Dear Honorable Civil Servants:

This letter provides notice of Wild Fish Conservancy's ("Conservancy") intent to sue the United States Department of Commerce and its Secretary (collectively, "Commerce") and the National Marine Fisheries Service, its Assistant Administer for Fisheries, and its West Coast Regional Administrator (collectively, "NMFS") for violations of section 7 of the Endangered Species Act ("ESA").[1] Commerce and NMFS are violating section 7 of the ESA by failing to ensure that the salmon fisheries in the Exclusive Economic Zone of Southeast Alaska are not likely to jeopardize the continued existence of the Southern Resident Killer Whale, Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon or destroy or adversely modify the Southern Resident Killer Whale's critical habitat. This letter is provided under section 11(g) of the ESA.[2] If the ESA violations described herein are not remedied before the expiration of the sixty day notice period, the Conservancy intends thereafter to file suit to protect these species.

[1] 16 U.S.C. § 1536.
[2] *Id.* § 1540(g).

I. Legal Framework.

When the ESA was passed in 1973 it "represented the most comprehensive legislation for the preservation of endangered species ever enacted by any nation."[3] The purpose of the statute is to conserve threatened and endangered species and to protect the ecosystems upon which those species depend.[4]

The ESA assigns implementation responsibilities to the Secretaries for Commerce and the U.S. Department of Interior, who have delegated duties to NMFS and the United States Fish and Wildlife Service ("FWS"), respectively.[5] NMFS generally has ESA authority for marine and anadromous species, while FWS has jurisdiction over terrestrial and freshwater species.[6]

Section 4 of the ESA prescribes mechanisms by which NMFS and FWS list species as endangered or threatened and designate "critical habitat" for such species.[7] Species is defined to include "any distinct population segment of any vertebrate species that interbreeds when mature."[8] Section 9 of the ESA makes it unlawful to "take" ESA-listed species.[9] "Take" is defined broadly to include harass, harm, wound, kill, trap, or capture a protected species.[10]

Section 7 of the ESA imposes a substantive obligation on each federal agency to "*insure* that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of" habitat that has been designated as critical for such species.[11] Jeopardy results where an action reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species.[12] Destruction or adverse modification of critical habitat occurs where there is a direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.[13]

In fulfilling the substantive mandates of section 7 of the ESA, federal agencies planning to fund, authorize, or undertake an action (the "action agency") that "may affect" ESA-listed species or their critical habitat are required to consult with NMFS (the "consulting agency") regarding the effects of the proposed action.[14] Formal consultation concludes with

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[3] *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978).
[4] 16 U.S.C. § 1531(b).
[5] *See* 50 C.F.R. § 402.01(b).
[6] *See id.* §§ 17.11, 223.102, 224.101.
[7] 16 U.S.C. §§ 1532(16), 1533(a).
[8] 50 C.F.R. § 424.02.
[9] *See* 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 223.203(a).
[10] 16 U.S.C. § 1532(19).
[11] *See id.* § 1536(a)(2) (emphasis added); *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990).
[12] 50 C.F.R. § 402.02.
[13] *Id.*
[14] *Id.* § 402.14(a).

NMFS's issuance of a biological opinion determining whether the action is likely to jeopardize ESA-protected species or result in the destruction or adverse modification of critical habitat.[15] If NMFS determines that jeopardy is not likely, or that reasonable and prudent alternatives to the proposed action will avoid jeopardy and that any taking of listed species incidental to the proposed action will not violate section 7(a)(2) of the ESA, NMFS must issue an incidental take statement with its biological opinion.[16] The incidental take statement includes reasonable and prudent measures considered by NMFS as necessary or appropriate to minimize impacts on ESA listed species.[17]

Federal agencies have a continuing duty under section 7 of the ESA after consultation is concluded to insure that their actions will not jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. The agencies must reinitiate consultation whenever "the amount or extent of taking specified in the incidental take statement is exceeded," "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," where the action in question is "subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion," or where "a new species is listed or critical habitat designated that may be affected by the identified action."[18] "The duty to reinitiate consultation lies with both the action agency and the consulting agency."[19]

II. Factual Background.

A. Affected Species and its Critical Habitat.

NMFS listed the Southern Resident Killer Whale distinct population segment as an endangered species under the ESA in 2005.[20] Critical habitat was designated for this species the following year.[21] NMFS is currently proposing a rule that would expand critical habitat for the endangered Southern Resident Killer Whale.[22]

"[T]he Southern Resident [Killer Whale] population has declined to historically low levels."[23] The three pods that make up this species—the J, K, and L pods—consist of only 74 whales as of December 2018.[24] "There are currently 26 reproductive age females (aged 11–42

[15] *Id.* § 402.14(h)(3).
[16] 16 U.S.C. § 1536(b)(4).
[17] *Id.* § 1536(b)(4)(C)(ii); 50 C.F.R § 402.14(i)(1)(ii).
[18] 50 C.F.R. § 402.16(a)–(d).
[19] *Salmon Spawning & Recovery Alliance v. Gutierrez*, 545 F.3d 1220, 1229 (9th Cir. 2008).
[20] 70 Fed. Reg. 69,903 (Nov. 18, 2005).
[21] 71 Fed. Reg. 69,054 (Nov. 29, 2006).
[22] 84 Fed. Reg. 49,214 (Sept. 19, 2019).
[23] Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response, Consultation on the Delegation of Management Authority for Specified Salmon Fisheries to the State of Alaska, NMFS Consultation Number: WCR-2018-10660, p. 84 (April 5, 2019) ("2019 SEAK BiOp").
[24] *Id.*

years), of which only 14 have successfully reproduced in the last 10 years, and there have been no viable calves since the beginning of 2016."[25]

A primary limiting factor for this species is prey availability.[26] In addition to contributing to premature mortality, limited prey availability reduces fecundity of Southern Resident Killer Whales.[27] Southern Resident females are producing a low number of surviving calves over the course of their reproductive life span, with late onset of sexual maturity and a long average reproductive interval of 6.1 years.[28] "[T]his reduced fecundity is largely due to nutritional limitation."[29] Indeed, a recent population viability assessment found that "the effects of prey abundance on fecundity and survival had the largest impact on the population growth rate" for this species.[30]

While Southern Resident Killer Whales consume a variety of fish species and one species of squid, Chinook salmon are their primary prey.[31] Available data indicate that salmon and steelhead make up to 98 percent of the whales' diet.[32] Moreover, the whales consume mostly larger (i.e., older) Chinook salmon; with upwards of around 80 to 90 percent of the species' diet consisting of Chinook salmon.[33] This preference for Chinook salmon persists despite much lower abundance than other salmonids in some areas and during certain periods.[34]

The Puget Sound Chinook salmon evolutionary significant unit ("ESU"), the Lower Columbia River Chinook salmon ESU, and the Upper Willamette River Chinook salmon ESU were each listed as threatened species in 1999.[35] NMFS listed the Snake River fall-run Chinook salmon ESU as a threatened species in 1992.[36] NMFS has applied the ESA's take prohibition to each of these four Chinook salmon ESUs.[37]

B. Commerce's and NMFS's Management of Salmon Fisheries in the Exclusive Economic Zone of Southeast Alaska.

The Magnuson-Stevens Fishery Conservation and Management Act ("Magnuson-Stevens Act") was enacted to "conserve and manage the fishery resources found off the coasts of the United States.[38] The statute establishes exclusive federal management over fisheries

[25] *Id.* at 242.
[26] *Id.* at 90.
[27] *Id.* at 84, 94–95, 242.
[28] *Id.* at 84.
[29] *Id.*
[30] *Id.* at 86.
[31] *Id.* at 90–91.
[32] *Id.* at 91.
[33] *Id.*
[34] *Id.*
[35] 64 Fed. Reg. 14,308 (March 24, 1999); *see also* 70 Fed. Reg. 37,160 (June 28, 2005); 79 Fed. Reg. 20,802 (April 14, 2014); 50 C.F.R. § 223.102(e).
[36] 57 Fed. Reg. 14,653 (April 22, 1992); *see also* 70 Fed. Reg. 37,160 (June 28, 2005); 79 Fed. Reg. 20,802 (April 14, 2014); 50 C.F.R. § 223.102(e).
[37] *See* 50 C.F.R. § 223.203(a).
[38] 16 U.S.C. § 1801(b)(1).

within the Exclusive Economic Zones of the United States.[39] The Exclusive Economic Zone, sometimes referred to as "federal waters," generally consists of those waters from 3 nautical miles from the coastline to 200 nautical miles from the coastline.[40]

The statute assigns various implementation responsibilities to the Secretary of Commerce.[41] The Secretary has generally delegated such responsibilities to NMFS, a division of the National Oceanic and Atmospheric Administration, which is itself an agency within the U.S. Department of Commerce.[42] The Magnuson-Stevens Act also provides for the creation of Regional Fishery Management Councils, including the North Pacific Fishery Management Council.[43]

The Councils are to prepare fishery management plans and amendments to such plans for each fishery under their respective jurisdiction and submit the plans to NMFS.[44] The fishery management plans must contain, *inter alia*, management measures necessary to prevent overfishing and that are consistent with other applicable laws.[45] NMFS must review all fishery management plans, including amendments thereto, to determine whether they are consistent with the Magnuson-Stevens Act "and any other applicable law."[46] The fishery management plans are to be approved, disapproved, or partially approved by NMFS.[47] The statute also directs the Councils to submit proposed regulations to NMFS to implement the fishery management plans, which NMFS will promulgate if it deems them to be consistent with the plans and other applicable laws.[48] The statute assigns primary responsibility in carrying out and implementing fishery management plans to NMFS.[49]

The Fishery Management Plan for the Salmon Fisheries in the Exclusive Economic Zone Off Alaska, developed by the North Pacific Fishery Management Council, provides for two salmon fisheries: a commercial troll salmon fishery and a sport fishery.[50] Both fisheries are conducted in Southeast Alaska; there are no longer commercial salmon fisheries in the Western Alaska area.[51] The Fishery Management Plan has been amended numerous times, most recently in October 2018, and approved by NMFS.[52] The Fishery Management Plan delegates management authority over these fisheries in the Exclusive Economic Zone of

[39] *Id.* at § 1811(a).
[40] *See* id. at § 1802(11); Presidential Proclamation 5030 (March 10, 1983); 48 Fed. Reg. 10,605 (March 14, 1983).
[41] *See, e.g., id.* at §§ 1854, 1855(d).
[42] *See* U.S. Dep't of Commerce, *Department Organization Order* 10-15, § 3.01(aa) (Dec. 12, 2011), *available at* http://www.osec.doc.gov/opog/dmp/doos/doo10_15.html; U.S. Dep't of Commerce, *NOAA Organizational Handbook Transmittal No. 61*, Part II(C)(26), *available at* http://www.corporateservices.noaa.gov/ames/delegations_of_authority/.
[43] *Id.* at § 1852(a)(1)(F).
[44] *Id.* at § 1852(h)(1).
[45] *Id.* at § 1853(a)(1).
[46] *Id.* at § 1854(a)(1)(A).
[47] *Id.* at § 1854(a)(3).
[48] *Id.* at §§ 1853(c), 1854(b).
[49] *See id.* at § 1855(d).
[50] Fishery Management Plan for the Salmon Fisheries in the Exclusive Economic Zone Off Alaska 8–9 (Oct. 2018) ("2018 Fishery Management Plan").
[51] *Id.* at 9.
[52] *E.g., id.* at 1–5; 2019 SEAK BiOp 6.

Southeast Alaska to the State of Alaska.[53] NMFS, however, retains ongoing oversight authority of the State of Alaska's management of these federal fisheries.[54] The State of Alaska must provide NMFS with information on the State's fishery management measures, NMFS must determine whether the measures are consistent with the Fishery Management Plan, the Magnuson-Stevens Act, and other applicable laws, and NMFS is to take appropriate corrective action, if necessary.[55] NMFS also provides funds to the State of Alaska to manage and monitor the fisheries.[56]

The commercial troll fishery harvests primarily Chinook and coho salmon, although chum, sockeye, and pink salmon are also harvested.[57] The commercial Chinook salmon fishery is divided into two seasons: a winter season and a general summer season; the summer season is further divided into a spring fishery and a summer fishery.[58] The winter troll season is defined as October 11 through April 30 and is managed not to exceed a guideline harvest level of 45,000 Chinook salmon.[59] The spring troll fishery, which begins after the winter season closes, does not occur within the Exclusive Economic Zone and is not subject to the Fishery Management Plan.[60] The summer troll fishery opens on July 1 and targets all remaining Chinook salmon available under the annual quota set pursuant to the Pacific Salmon Treaty between the United States and Canada.[61] The regulatory period for coho salmon retention in the troll fishery is June 15 through September 20.[62]

C. NMFS's 2019 Biological Opinion on Southeast Alaska Salmon Fisheries.

NMFS recently prepared a biological opinion to consider the effects of its ongoing management over, and delegation of authority to Alaska for, the salmon fisheries within the Exclusive Economic Zone of Southeast Alaska: the Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response, Consultation on the Delegation of Management Authority for Specified Salmon Fisheries to the State of Alaska, NMFS Consultation Number: WCR-2018-10660 (April 5, 2019) ("2019 SEAK BiOp"). Those fisheries harvest wild- and hatchery-origin salmon originating in rivers from Oregon to Alaska, including Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon.[63] These four Chinook salmon ESU's are failing to meet recovery standards, including those set for spawning escapement, and the fisheries in the Exclusive Economic Zone of Southeast Alaska will continue to contribute to that failure.

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[53] *E.g.*, 2018 Fishery Management Plan 14.
[54] *E.g., id.* at 54–58
[55] *Id.* at 54–58.
[56] 2019 SEAK BiOp 6.
[57] 2018 Fishery Management Plan 33.
[58] *Id.*
[59] *Id.*
[60] *Id.*
[61] *Id.* at 34.
[62] *Id.*
[63] *See, e.g.*, 2019 SEAK BiOp 12.

The 2019 SEAK BiOp explains that attempts were made during the recent negotiations that culminated in the current iteration of the Pacific Salmon Treaty, entered into in 2019 between the United States and Canada, to reduce harvests to conserve Puget Sound Chinook salmon and the Southern Resident Killer Whale.[64] Those efforts were unable to achieve the reductions needed to protect those species:

> [T]here was a practical limit to what could be achieved through the bilateral negotiation process. As a consequence, and in addition to the southeast Alaska, Canada, and SUS fishery measures identified in the 2019 [Pacific Salmon Treaty], the U.S. Section generally recognized that more would be required to mitigate the effects of harvest and other limiting factors that contributed to the reduced status of Puget Sound Chinook salmon and [Southern Resident Killer Whales] . . . .[65]

NMFS repeatedly explains in the 2019 SEAK BiOp that the Pacific Salmon Treaty merely sets an upper limit on harvest limits and that NMFS can further restrict harvests in the Exclusive Economic Zone of Southeast Alaska to protect imperiled species under the ESA.[66] NMFS nonetheless continues to authorize and manage the fisheries in the Exclusive Economic Zone of Southeast Alaska in a manner that enables the full extent of Chinook salmon harvest allowed under the Pacific Salmon Treaty.

Unfortunately, the 2019 SEAK BiOp does not adequately disclose or analyze the impact of the fisheries on the spawning escapement for the four threatened Chinook salmon ESU's. It is therefore unclear in the 2019 SEAK BiOp the extent to which these fisheries are harming the survival and recovery of Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon.

NMFS's 2019 SEAK BiOp found that the Southern Resident Killer Whale has a high risk of extinction due largely to low fecundity rates.[67] This reduced fecundity is primarily attributed to reduced prey abundance; primarily, Chinook salmon.[68] "Under the existing management and recovery regimes over the last decade, salmon availability has not been sufficient to support Southern Resident population growth."[69] A recent population viability assessment indicated that effects of prey abundance has the largest impact on the population growth rate and that **Chinook abundance would need to increase by 15%** to achieve the recovery target growth rate set for the Southern Resident Killer Whale.[70]

The 2019 SEAK BiOp indicates that the fisheries in the Exclusive Economic Zone of Southeast Alaska will continue to **reduce Chinook salmon prey available** to the Southern

[64] *Id.* at 9–10.
[65] *Id.* at 10.
[66] *E.g., id.* at 2, 20
[67] *E.g., id.* at 84–86, 242.
[68] *Id.* at 84, 242.
[69] *Id.* at 311.
[70] *Id.* at 86, 311.

Resident Killer Whale in various seasons and locations.[71] NMFS estimates such reductions of prey available in coastal waters to range from 0.2% to 12.9%, with the greatest reductions occurring in July through September.[72] Reductions in the inland waters are estimated to range from 0.1% to 2.5%, with the greatest reductions similarly occurring from July through September.[73] Some of the Chinook salmon caught in the fishery are identified by NMFS as priority stocks for the Southern Resident Killer Whale.[74] NMFS estimates that the fisheries in the Exclusive Economic Zone of Southeast Alaska reduce the larger Chinook salmon—those from 3 to 5 years old—from the Southern Resident's critical habitat by 0.1% to 2.5%.[75] Available data indicate that Southern Resident Killer Whales consume mostly these larger and older Chinook salmon.[76]

NMFS's 2019 SEAK BiOp nonetheless concludes that the Southeast Alaska fisheries are not likely to jeopardize the continued existence of the Southern Resident Killer Whale or result in the adverse modification or destruction of its critical habitat.[77] NMFS similarly found that the fisheries are not likely to jeopardize Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon.[78] In reaching these conclusions, NMFS relies on mitigation in the form of funding proposed for increased hatchery production and habitat restoration, both of which are supposed to eventually increase salmon, including Puget Sound Chinook salmon, available to the Southern Resident Killer Whale.[79] However, no decisions have been made as to location, timing, or scope of these supposed mitigation efforts, required authorizations have not been issued, and there is uncertainty as to whether Congress will fund them.[80] Moreover, the hatchery programs proposed as mitigation will themselves have harmful impacts on wild salmon populations, including the four threatened Chinook salmon ESU's, which NMFS has yet to analyze; such "mitigation" may result in greater harm than benefit.

Additionally, even though the 2019 SEAK BiOp acknowledges that "salmon availability has not been sufficient to support Southern Resident population growth,"[81] the mitigation effects "will not take place for at least four to five years."[82] Instead of accounting for this delay in mitigation, and the un-mitigated reduction in prey availability during the first few years of the proposed action, the 2019 SEAK BiOp does not anticipate heightened negative impacts during the first few years of the proposed action.[83] As the Southern Resident Killer Whales continue to be adversely affected by prey availability, Commerce and NMFS have failed to announce the location, timing, or scope of the supposed mitigation and delayed effects.

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[71] *E.g., id.* at 244.
[72] *Id.* at 247–48.
[73] *Id.* at 248.
[74] *Id.* at 251–53.
[75] *Id.* at 315.
[76] *Id.* at 91.
[77] *Id.* at 310–16, 325.
[78] *Id.* at 298, 302, 305, 309.
[79] *Id.* at 305–16.
[80] *See, e.g., id.* at 11, 255.
[81] *Id.* at 311.
[82] *Id.* at 11.
[83] *Id.* at 314–16.

NMFS provided an incidental take statement with the 2019 SEAK BiOp allowing take of Southern Resident Killer Whales, Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, Snake River fall-run Chinook salmon, and two other species resulting from the Southeast Alaska fisheries.[84]

III. Commerce's and NMFS's Violations of the ESA.

Commerce and NMFS are in violation of section 7(a)(2) of the ESA for failing to insure that their ongoing actions on the Southeast Alaska salmon fisheries are not likely to jeopardize the endangered Southern Resident Killer Whale, Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon or destroy or adversely modify the Southern Resident Killer Whale's critical habitat. Such actions include all those by Commerce and NMFS authorizing, managing, funding, and enabling the salmon fisheries in the Exclusive Economic Zone of Southeast Alaska, including: (1) implementation, funding, and oversight of the Fishery Management Plan for the Salmon Fisheries in the Exclusive Economic Zone Off Alaska; (2) delegation of management over the fisheries to the State of Alaska; and (3) issuance of an incidental take statement with the 2019 SEAK BiOp authorizing take from the fisheries.

Commerce and NMFS are in violation of their substantive obligation under Section 7 of the ESA to *insure* that their actions on the Southeast Alaska salmon fisheries do not jeopardize ESA-listed species or adversely modify their critical habitat.[85] The agencies cannot abrogate this obligation merely by relying on a biological opinion; rather, their decision to rely on NMFS's 2019 SEAK BiOp must not itself be arbitrary or capricious.[86] The 2019 SEAK BiOp is legally deficient in manners that are readily discernable and Commerce and NMFS's reliance on that biological opinion is therefore itself arbitrary and capricious.[87] Some of those legal deficiencies are summarized below; however, this description in not meant to be exhaustive.

Perhaps the most egregious deficiency with the 2019 SEAK BiOp is NMFS's reliance on supposed future mitigation—funding for increases in hatchery production and habitat restoration—that is entirely speculative, undefined, and that does not adequately address the immediate threats to protected species from the Southeast Alaska fisheries.[88] The 2019 SEAK BiOp also fails to use the best available scientific and commercial data available and it does not fully and adequately evaluate the effects of the entire action, interrelated and interdependent actions, and the cumulative actions. For example, NMFS fails to appropriately address climate change impacts and impermissibly assumes the benefits from proposed increases to hatchery production without also addressing the harmful impacts to ESA-listed species from such increases. NMFS also fails to adequately evaluate whether the fisheries will

[84] *Id.* at 325–32.
[85] *See* 16 U.S.C. § 1536(a)(2); 50 C.F.R. § 402.02; *Pyramid Lake Paiute Tribe of Indians*, 898 F.2d at 1415.
[86] *See Pyramid Lake Paiute Tribe of Indians*, 898 F.2d at 1415.
[87] *See Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 532 (9th Cir. 2010).
[88] *See, e.g., Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 935–36 (9th Cir. 2008) ("absent specific and binding plans," proposed mitigation may not be considered to offset "certain immediate negative effects").

harm the Southern Resident Killer Whale by threatening the survival and recovery of Chinook salmon populations that spawn in Canadian waters, such as those in the Fraser River. The 2019 SEAK BiOp does not adequately evaluate whether the Southeast Alaska salmon fisheries will, directly or indirectly, reduce appreciably the likelihood of both the survival and recovery of ESA-listed species in the wild by reducing the reproduction, numbers, or distribution of the species. The 2019 SEAK BiOp does not adequately summarize the information on which the opinion is based or adequately detail the effects the Southeast Alaska salmon fisheries have on listed species and their critical habitat. NMFS failed to draw a rational connection between the facts found and its determination that the salmon fisheries are not likely to jeopardize the continued existence of ESA-listed species or result in the destruction or adverse modification of their critical habitat.

The incidental take statement included in the 2019 SEAK BiOp is legally deficient because, *inter alia*, it does not adequately specify the impact or extent of the incidental taking of species, relies on inappropriate surrogates in lieu of numeric take limits, does not include appropriate reasonable and prudent measures to minimize impacts, does not include adequate terms and conditions to implement reasonable and prudent measures, and does not include requirements sufficient to monitor the incidental take of ESA-listed species or to trigger the reinitiation of consultation if the anticipated impacts are exceeded. For example, NMFS impermissibly set the take limit for the Southern Resident Killer Whale to be coextensive with the Southeast Alaska salmon fisheries themselves such that even if more take than anticipated occurred, the safe harbor provisions of the incidental take statement would remain in effect and there would not be an obligation to reinitiate consultation.[89] The incidental take statement was also issued without compliance with the National Environmental Policy Act; i.e., without preparing or supplementing an environmental assessment, a finding of no significant impact, an environmental impact statement, or an alternative analysis.

In sum, Commerce and NMFS have failed to insure that their actions on the Southeast Alaska salmon fisheries are not likely to jeopardize the continued existence of the Southern Resident Killer Whale, Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon, or adversely modify or destroy the Southern Resident Killer Whale's critical habitat.

IV. Party Giving Notice of Intent to Sue.

The full name, address, and telephone number of the party giving notice is:

Wild Fish Conservancy
15629 Main Street N.E.
P.O. Box 402
Duvall, WA 98019
Tel: (425) 788-1167

[89] *See* 2019 SEAK BiOp 327; *Or. Natural Res. Council v. Allen*, 476 F.3d 1031, 1039–40 (9th Cir. 2007).

V. Attorneys Representing Wild Fish Conservancy.

The attorneys representing Wild Fish Conservancy in this matter are:

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VI. Conclusion.

This letter provides notice under section 11(g) of the ESA[90] of the Conservancy's intent to sue Commerce and NMFS for the violations of the ESA discussed herein. Unless these ongoing and imminent violations described herein are corrected within sixty days, the Conservancy intends to file suit to protect the Southern Resident Killer Whale, Puget Sound Chinook salmon, Lower Columbia River Chinook salmon, Upper Willamette River Chinook salmon, and Snake River fall-run Chinook salmon and to enforce the ESA.

Very truly yours,

KAMPMEIER & KNUTSEN, PLLC

By: _____
Brian A. Knutsen

CORR CRONIN, LLP

By: _____
Eric Lindberg

[90] 16 U.S.C. § 1540(g).

CERTIFICATE OF SERVICE

I, Brian A. Knutsen, declare under penalty of perjury of the laws of the United States that I am counsel for Wild Fish Conservancy and that on January 9, 2020, I caused copies of the foregoing to be served on the following by depositing them with the U.S. Postal Service, postage prepaid, via certified mail, return receipt requested:

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Brian A. Knutsen

HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, in his official capacity as Regional Administrator for the National Marine Fisheries Service, *et al.*, Defendants, and ALASKA TROLLERS ASSOCIATION, Defendant-Intervenor.	Case No. 2:20-cv-00417-RAJ-MLP PLAINTIFF'S REPLY IN SUPPORT OF MOTION FOR PRELIMINARY INJUNCTION

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GLOSSARY OF ACRONYMS

BiOp	Biological Opinion
ESA	Endangered Species Act
ITS	Incidental Take Statement
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service

I. The Court Has Exclusive Jurisdiction Over the ESA and NEPA Claims Alleged.

This action is not barred by the Magnuson Stevens Act's 30-day limitations period. First, the 2019 SEAK BiOp was not prepared for either of the types of action subject to the provision. Second, the National Marine Fisheries Service ("NMFS") did not provide notice required to trigger the truncated limitations period so, even if it did apply, it has yet to commence.

The Magnuson Stevens Act establishes the following 30-day limitations period:

> (1) Regulations promulgated by [NMFS] under [the Magnuson Stevens Act] and actions described in paragraph (2) shall be subject to judicial review . . . if a petition for such review is filed within 30 days after the date on which the regulations are promulgated or the action is published in the Federal Register, as applicable . . .
>
> **** **** **** **** **** ****
>
> (2) The actions referred to in paragraph (1) are actions that are taken by [NMFS] under regulations which implement a fishery management plan, including but not limited to actions that establish the date of closure of a fishery to commercial or recreational fishing.

16 U.S.C. § 1855(f). This provision applies to two types of actions: NMFS's promulgation of regulations under the Magnuson Stevens Act and actions taken by NMFS "under regulations which implement a fishery management plan." *Id.* The provision also applies to claims that NMFS violated the ESA and NEPA in promulgating regulations under the Magnuson Stevens Act. *Turtle Island Restoration Network v. U.S. Dep't of Commerce*, 438 F.3d 937, 939 (9th Cir. 2006). This is consistent with the "highly detailed and public process leading up to the adoption of regulations," including public hearings, notices seeking public comments, and notice of final regulations in the Federal Register. *Id.* at 947–48. Similar public processes are required for NMFS's actions taken under regulations that implement a fishery management plan.[1] Thus, the relevant inquiry is whether the promulgation of regulations are being challenged and not whether a Magnuson Stevens Act claim is explicitly alleged; in *Turtle Island*, the "the ESA claim [was] premised on the issuance of regulations reopening the fishery." 438 F.3d at 945.

[1] NMFS is required to provide NEPA procedures, including opportunities for public input, for "other actions taken or approved pursuant to [the Magnuson Stevens Act]." 16 U.S.C. § 1854(i)(1). Consistent with these requirements, NMFS's regulations that implement fishery management plans provide for notifications in the Federal Register and opportunities for public comment. *See, e.g.*, 50 C.F.R. §§ 660.408, 660.411; 84 Fed. Reg. 19,729 (May 6, 2019).

The Conservancy is not challenging an action subject to the 30-day limitation period; i.e., the Conservancy is not challenging NMFS's promulgation of regulations under the Magnuson Stevens Act or an action, published in the Federal Register, taken by NMFS under regulations that implement a fishery management plan. *See* 16 U.S.C. § 1855(f). Nor is the Conservancy challenging NMFS's compliance with NEPA or the ESA on such an action, as was the case in the authorities cited by NMFS.[2] This case is not time barred because the challenged 2019 SEAK BiOp is untethered to an action subject to the Magnuson Steven Act's limitations period.

NMFS approved the first Fishery Management Plan for Salmon Off the Coast of Alaska in 1979. Dkt. 14-1 at 456. NMFS approved Amendment 3 to the plan in 1990 that, *inter alia*, first delegated management authority to the State of Alaska. *Id.* at 458. Amendment 12, approved by NMFS in 2012, revised the plan to facilitate Alaska's management of the fisheries. *Id.* at 459.

The 2019 SEAK BiOp was issued seven years later to consult under the ESA on the effects of, *inter alia*, NMFS's "ongoing delegation of management authority over salmon . . . fisheries . . . ." *Id.* at 30. The 2019 SEAK BiOp evaluates and authorizes take associated with the salmon fisheries under the 10-year regime contemplated by the 2019 Pacific Salmon Treaty. *See id.* at 36, 350. The 2019 SEAK BiOp also purports to consult on hypothetical mitigation components comprised of hatchery production and habitat restoration. *Id.* at 33–36.

The Conservancy alleges three claims related to the 2019 SEAK BiOp: (1) that NMFS's adoption and implementation of the 2019 SEAK BiOp violates the requirement of ESA section 7 to ensure that its actions do not jeopardize species; (2) that the 2019 SEAK BiOp is arbitrary and not in accordance with law; and (3) that NMFS unlawfully failed to prepared any NEPA documents for the 2019 SEAK BiOp. *See* Dkt. 1 ¶¶ 114–19. Among the allegations is that the

[2] *See Turtle Island*, 438 F.3d at 945–46 (challenge to NEPA and ESA documents prepared for promulgation of regulations); *Blue Water Fishermen's Ass'n v. Nat'l Marine Fisheries Serv.*, 158 F. Supp. 2d 118, 120–22 (D. Mass. 2001) (challenge to promulgation of regulations that were premised on a BiOp); *see also Sea Hawk Seafoods, Inc. v. Locke*, 568 F.3d 757, 764–66 (9th Cir. 2009) (challenge to regulations "promulgated, as least in part, under the [Magnuson Stevens Act]"); *see also Am. Bird Conservancy v. Fed. Communic. Comm'n*, 545 F.3d 1190, 1193 (9th Cir. 2008) (claim that agency failed to consult under the ESA before granting registrations had to be pursued under procedures established for challenging such registrations).

2019 SEAK BiOp unlawfully relies on uncertain mitigation to offset impacts from the 2019 to 2028 harvests. *Id.* ¶¶ 99–103. The Conservancy requests, *inter alia*, that the 2019 SEAK BiOp be vacated, that NMFS be enjoined from authorizing take associated with the fisheries until it complies with the ESA and NEPA, and such other relief as appropriate. *Id.* ¶¶ A–J.

NMFS argues that the claims are barred because they were not brought within 30-days of NMFS's 2012 promulgation of regulations implementing Amendment 12 to the Fishery Management Plan. *See* Dkt. 43 at 16–17. This argument stretches the imagination. NMFS consulted under section 7 of the ESA and prepared NEPA documents in 2012 for its promulgation of those regulations. *See* Dkt. 14-1 at 29; Dkt. 43-1 at 938–1207; 77 Fed. Reg. 75,570 (Dec. 21, 2012). The Conservancy is not challenging those regulations or NMFS's ESA and NEPA documents associated therewith, as the 2019 SEAK BiOp does not consult on NMFS's promulgation of the 2012 regulations. *See* Dkt. 1 ¶¶ 114–19; Dkt. 14-1 at 29–36. Further, NMFS provides no explanation for its time-warping argument that the challenge to the 2019 SEAK BiOp is time barred because the Conservancy did not file suit seven years before the 2019 SEAK BiOp was issued. *See, e.g.*, *Tovar v. Sessions*, 882 F.3d 895, 904 (9th Cir. 2018) ("Interpretations . . . which would produce absurd results are to be avoided if alternative interpretations consistent with the legislative purpose are available." (citation omitted)).

NMFS's argument ignores the claims alleged and most of the requested relief. Instead, NMFS attempts to recast the lawsuit as a challenge to its Magnuson Stevens Act regulations because, according to NMFS, the Conservancy is seeking to enjoin NMFS's authorization of the fishery and the "sole source of [that] authorization" is the regulations. Dkt. 43 at 16–17. As an initial matter, the Conservancy made clear in the complaint, the motion, and the proposed order that it is seeking to enjoin NMFS's authorization of "take," which is provided under the ESA through the 2019 SEAK BiOp and **not fishery regulations**. *See* Dkt. 1 at 29, Dkt. 14 ¶ F, Dkt. 14-7 at 3. More importantly, NMFS's contention that authorization of fisheries derives only from fishery regulations was rejected by the Ninth Circuit in *Ramsey v. Kantor*, 96 F.3d 434, 444 (9th

Cir. 1996) (rejecting argument that an ITS "did not authorize the harvesting of endangered salmon" and holding that the ITS "is functionally equivalent to a permit because the activity in question would, for all practical purposes, be prohibited but for the [ITS]"); *see also Bennett v. Spear*, 520 U.S. 154, 178 (1997) (BiOp and ITS "alter the legal regime" by "authorizing" take). As in *Ramsey*, the harvests here "take" ESA listed species and therefore would, for all practical purposes, be prohibited but for the 2019 SEAK BiOp's ITS. *See* Dkt. 14-1 at 350–56.

NMFS also argues that, to the extent that 2019 SEAK BiOp "could be construed as an authorization, or even re-affirmance of the regulations," the Conservancy was required to bring suit "within 30 days of issuance on April 5, 2019." Dkt. 43 at 17–18. This argument ignores the plain language of the Magnuson Stevens Act, which applies the limitations period to NMFS's promulgation of regulations under the statute and to NMFS's actions taken under regulations that implement a fishery management plan. *See* 16 U.S.C. § 1855(f). NMFS issued the 2019 SEAK BiOp authorizing take of protected species unconnected to any action being taken by NMFS that would be covered by the Magnuson Stevens Act's limitations period.[3]

Moreover, the truncated 30-day limitations period only commences upon provision of public notice through promulgation of a regulation or notice in the Federal Register. *See* 16 U.S.C. § 1855(f); *Or. Trollers Ass'n v. Gutierrez*, 452 F.3d 1104, 1113–16 (9th Cir. 2006) (publication triggered the 30-day period); *Turtle Island*, 438 F.3d 947–48 (the "limited window for judicial review" is consistent with requirements for notices that put challengers in "prime position to seek judicial review"). Unlike actions under the Magnuson Stevens Act, NMFS generally does not provide public participation opportunities or notices for BiOps, and did not for the 2019 SEAK BiOp. Thus, even if the limitations period could be interpreted to apply here, it would have yet to commence because NMFS has not provided the required public notice.

[3] The 2019 SEAK BiOp did consult on NMFS's "ongoing delegation of management authority" over the fishery to Alaska. Dkt. 14-1 at 30. NMFS does not argue that this "ongoing delegation" is an action "under regulations which implement a fishery management plan," and such an argument is implausible. However, if this "ongoing delegation" could be construed as such an action, it is by NMFS's admission an ongoing action that continues today and not a discrete action taken on a specific date.

NMFS's representation that the Conservancy has an alternative recourse is, at best, disingenuous. *See* Dkt. 43 at 18. The Fishery Management Plan allows for petitioning NMFS to review fishing measures promulgated by Alaska. Dkt. 43-1 at 511–12. The claims here relate to NMFS's unlawful 2019 SEAK BiOp and NMFS's failure to comply with NEPA. *See* Dkt. 1 ¶¶ 114–19. The administrative process cited by NMFS does not provide for review of these claims. *See* Dkt. 43-1 at 511 ("public may petition NMFS to conduct a consistency review of any statement management measure"). Only the District Courts of the United States possess jurisdiction to review these claims. *See* 5 U.S.C. § 702; 16 U.S.C. § 1540(g)(1).

II. The Conservancy Has Standing to Pursue Its Claims.

NMFS asserts that representational standing is lacking because the interests of the Conservancy's members— protection of Southern Residents—are not germane to the Conservancy's mission, which NMFS claims is limited to wild fish.[4] Dkt. 43 at 19–20. This factual assertion is not supported by the evidence and is vigorously opposed by the Conservancy. The Conservancy's executive director testified that the organization is dedicated to protecting wild fish and their "**ecosystems**." Dkt. 14-4 ¶¶ 2–3 ("salmonids **and aquatic species** in the Northwest") (emphasis added); *Ecosystem*, Merriam-Webster Dictionary, https://www.merriam-webster.com/dictionary/ecosystem ("the complex of a community of organisms . . .").

The predator-prey relationship between salmon and Southern Residents has shaped both species over millions of years through evolutionary processes and is a driving force behind the evolutionary significant units of salmon that exist in the Pacific Northwest today; e.g., the relationship impacts migration patterns, abundance, distribution, and genetics. Southern

[4] NMFS also argues that the injuries to one of Conservancy's members—Mr. McMillan—are not sufficiently concrete. Dkt. 43 at 20 n.5. This argument has no bearing on the Motion because NMFS does not challenge the injuries of another member—Mr. Soverel—which is sufficient for representational standing. *See, e.g., Fleck & Assocs. v. City of Phoenix*, 471 F.3d 1100, 1105–06 (9th Cir. 2006). Regardless, Mr. McMillan testified that he "regularly" tries to observe orcas, which is not speculative. Dkt. 14-5 ¶¶ 6, 21; *see Associated Gen. Contractors of Am. v. Metro. Water Dist.*, 159 F.3d, 1178, 1181 (9th Cir. 1998) ("regularly" taking action not speculative); *see also Ibrahim v. Dep't of Homeland Sec.*, 669 F.3d 983, 993–94 (9th Cir. 2012); *Ecological Rights Found. v. Pac. Lumber Co.*, 230 F.3d 1141, 1147 (9th Cir. 2000) (injury satisfied where individual "shows . . . an aesthetic or recreational interest is a particular . . . animal . . . and that that interest is impaired by a defendant's conduct").

Residents are plainly a key component of salmonids' "ecosystem" and the Conservancy has long sought to protect such predators as part of its mission. *See, e.g.*, *Humane Soc'y of the U.S. v. Locke*, 626 F.3d 1040 (9th Cir. 2010); *Wild Fish Conservancy v. U.S. Envtl. Prot. Agency*, No. C08-015-JCC, 2010 U.S. Dist. LEXIS 41838, at *11–17 (W.D. Wash. Apr. 28, 2010). The Court should reject NMFS's unsupported and vigorously-contested factual assertion that the Conservancy's interests do not include preservation of Southern Residents.[5]

Because the Conservancy has representational standing for all claims, the Court need not address organization standing. *See, e.g.*, *Warth v. Seldin*, 422 U.S. 490, 511 (1975); *Envtl. Prot. Info. Ctr. v. Pac. Lumber Co.*, 469 F. Supp. 2d 803, 814 (N.D. Cal. 2007). However, the Conservancy also established organizational standing for the NEPA claim. *See* Dkt. 14-4 ¶¶ 3–4. NMFS ignores the process and informational injuries demonstrated, and instead points out that the Conservancy did not show a loss of resources. *See* Dkt. 43 at 19. Organizations can suffer different types of injuries, each of which is sufficient. *See, e.g.*, *E. Bay Sanctuary Covenant v. Trump*, 932 F.3d 742, 765–67 (9th Cir. 2018) (diversion-of-resources); *Fed. Election Comm'n v. Akins*, 524 U.S. 11, 21 (1998) (informational injury to organization).

III. The Conservancy Will Succeed on Its Challenge to the 2019 SEAK BiOp.

A. The Court should disregard NMFS's post hoc materials and arguments.

Judicial review is limited to the record before NMFS at the time it issued the 2019 SEAK BiOp. *See Ariz. Cattle Growers' Ass'n v. U.S. Fish & Wildlife Serv.*, 273 F.3d 1229, 1245 (9th Cir. 2001); *see also Friends of the Clearwater v. Dombeck*, 222 F.3d 552, 560 (9th Cir. 2000). Materials that postdate the 2019 SEAK BiOp are therefore not relevant to whether the Conservancy is likely to succeed on the merits.[6] *See Ariz. Cattle*, 273 F.3d at 1245 (limiting review to the agency record because, otherwise, "the consulting agency [could] produce far

[5] In contrast to the parties' factual disagreement here, in the cases cited by NMFS there was no dispute as to the scope of the organization's mission. *E.g.*, *Pac. Nw. Generating Coop. v. Brown*, 38 F.3d 1058, 1063 (9th Cir. 1994).
[6] The Court may consider extra-record materials for other purposes, such as in evaluating whether irreparable injury is likely absent the requested injunction. *See, e.g.*, *California v. Bureau of Land Mgmt.*, 286 F. Supp. 3d 1054, 1074 n.7 (N.D. Cal. 2018); *Nw. Envtl. Def. Ctr. v. U.S. Army Corps of Eng'rs*, 817 F. Supp. 2d 1290, 1300 (D. Or. 2011).

reaching and unsupported Biological Opinions knowing that it could search for evidentiary support if the opinion was later challenged"). Similarly, *post hoc* rationalizations offered in litigation that were not articulated with the issuance of the 2019 SEAK BiOp "cannot serve as a sufficient predicate for [NMFS's] action." *See, e.g., Am. Textile Mfrs. Inst., Inc. v. Donovan*, 452 U.S. 490, 539 (1981); *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1071 n.7 (9th Cir. 2004) (finding consulting agency's "post hoc rationalizations . . . provide an inadequate basis for judicial review of the BiOps"). These fundamental principles of administrative law apply at the preliminary injunction stage. *See, e.g., Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 235 F. Supp. 2d 1143, 1151–52 (W.D. Wash. 2002).

B. NMFS's no jeopardy opinion relies on uncertain mitigation.

The Motion established that NMFS's no jeopardy opinion unlawfully relied on uncertain mitigation measures. NMFS's half-hearted arguments to the contrary are wholly unconvincing.

NMFS first asserts that its no jeopardy opinion was not based "*solely*" on mitigation. Dkt. 43 at 20–21. The Conservancy never suggested otherwise. However, it is clear that NMFS's reliance on the hypothetical mitigation was necessary to reach its ultimate biological opinion that harvests will not jeopardize Southern Residents or adversely modify their critical habitat. *E.g.*, Dkt. 14-1 at 34, 339. Indeed, this is not contested by NMFS.

The Motion explained that NMFS cannot rely on the mitigation because it is uncertain if Congress will timely provide some or all of the necessary funding. Dkt. 14 at 20. In response, NMFS produced materials suggesting that funding has recently been appropriated for one year of hatchery production. Dkt. 43 at 22; Dkt 43-4 ¶¶ 8–9, 14. These post hoc materials are inadmissible and should be disregarded. Moreover, the availability of a small fraction of the funding does not constitute a "clear, definite commitment of resources" to implement all of the mitigation. *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 936 (9th Cir. 2008) ("*Nat'l Wildlife Fed'n II*"). The Motion also explained that the mitigation is uncertain because it is not subject to deadlines, which NMFS does not refute. *See* Dkt. 14 at 20–21.

The mitigation is uncertain because it will not be implemented by NMFS; instead, NMFS hopes that the mitigation, if funded, will be implemented by parties over whom NMFS has no control. *Id.* at 21. In response, NMFS argues it may rely on third parties, but in the case it cites the "third party" implementing mitigation was a mining company also implementing the project and the BiOp prohibited opening of the mine if the mitigation was not implemented. *See Rock Creek All. v. U.S. Fish & Wildlife Serv.*, 663 F.3d 439, 444 (9th Cir. 2011). Here, in contrast, NMFS has no authority or agreements to compel implementation of the mitigation. *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 254 F. Supp. 2d 1196, 1213–14 (D. Or. 2003) ("*Nat'l Wildlife Fed'n I*"). Instead, NMFS's post hoc materials show, at most, that NMFS is trying to convince State and Tribal hatchery operators, who focus on producing fish for harvest, to produce fish for Southern Residents, without any indication of success. *See* Dkt. 43-5 ¶¶ 5–11.

The Conservancy established that NMFS unlawfully relied on mitigation because of the complete lack of "specific and binding plans." Dkt. 14 at 21–23. In response, NMFS notes that it evaluated the extent of additional hatchery releases needed for the prey increase program. Dkt. 43 at 23. Determining the extent of needed mitigation does not constitute "binding and specific plans" that will actually achieve that mitigation. *See Nat'l Wildlife Fed'n II*, 524 F.3d at 935–36; Dkt. 14 at 22. NMFS similarly points out that, for the conservation hatcheries, it identified three existing hatcheries and discussed a proposed fourth hatchery, but NMFS does not otherwise address the lack of any plans for how these hatcheries will be modified in a supposed effort to benefit Chinook salmon or Southern Residents. *See* Dkt. 43 at 24. With respect to the habitat restoration component, NMFS simply reiterates that it has a list of potential projects, but otherwise does not dispute that it lacks any specific plans for implementation. *Id.* For all of the mitigation, NMFS represents that "the only decision has been to distribute the money." Dkt. 43 at 24 n.8. Contrary to NMFS's contentions, the hypothetical mitigation presented here is far less defined than that found unlawful in other cases. *See, e.g.*, *Nat'l Wildlife Fed'n II*, 524 F.3d at 935–36 ("[E]ven a sincere general commitment" to the "installation of surface bypass collectors

at all dams where feasible, as exemplified by the recent installation of such structures at three dams" could not be considered to "offset . . . certain immediate negative effects . . . .").

Finally, NMFS cannot rely on the mitigation because it requires ESA and NEPA reviews that may substantially alter or prohibit implementation. Dkt. 14 at 23–26. NMFS does not dispute that the hatchery mitigation requires future consultation under the ESA, but instead argues that it is allowed to conduct programmatic consultations followed by site-specific consultations.[7] Dkt. 43 at 23. This entirely fails to address the uncertainty because the programmatic consultation does not ensure subsequent approval, or that no alternations will be required, through site-specific consultations. Finally, NMFS does not address the uncertainty generated by the need to comply with NEPA before implementing the mitigation. Instead, NMFS insists, unconvincingly, that it has not already violated NEPA by delaying processes on the mitigation programs until after the 2019 SEAK BiOp. *See id.* at 24 n.8.

Any one of the uncertainties addressed in the Motion would preclude NMFS's reliance on the mitigation to offset certain and immediate harm to Southern Residents from the harvests. Cumulatively, these uncertainties make NMFS's reliance wholly indefensible.

IV. The ITS Fails to Adequately Limit Take of Southern Residents.

As explained in the Motion, the ITS's surrogate for limiting take of Southern Residents is unlawful because it allows for the entire "action"—harvest under the 2019 Pacific Salmon Treaty—regardless of whether more take occurs than NMFS predicted in the 2019 SEAK BiOp. NMFS responds by pointing out that harvests are adjusted annually based on abundance predictions for salmon runs caught in the fishery. *See* Dkt. 43 at 26; Dkt. 14-1 at 37. While

[7] NMFS also points to post hoc materials in an effort to support its reliance on this mitigation. Dkt. 43 at 23; Dkt. 43-5 ¶¶ 8, 10. These materials cannot be used to support the 2019 SEAK BiOp. *See Ariz. Cattle*, 273 F.3d at 1245. Moreover, NMFS's reliance on a recent approval of some hatchery increases in the Duwamish River for its suggestion that it will quickly approve other programs is not defensible. *See* Dkt. 43-5 ¶ 10. Review of that program had been in process since at least 2004 and a draft EIS was finally issued in November 2017. *See* 80 Fed. Reg. 15,986, 15,986 (March 26, 2015); Dkt. 43-5 at 350. NMFS was therefore able to issue a final issue EIS for this program in 2019, shortly after the 2019 SEAK BiOp, that included the increased hatchery releases. *See* Dkt. 43-5 at 350–51. NMFS does not identify any other hatchery programs for which a draft EIS has already been completed or that are otherwise subject to an ongoing review.

accurate, that is different than abundance predictions for salmon available to Southern Residents. *See* Dkt. 14-1 at 115-16 (describing Southern Residents' diet composition). NMFS does not dispute that harm from authorized harvests varies based on a variety of factors. As an example, NMFS's opinion assumes that abundance levels will be similar to past levels and that there will not be multiple consecutive years with low abundance. *See* Dkt. 14-1 at 272–73, 338–39. If these predictions prove inaccurate and substantially more take occurs than NMFS anticipated, there would be no obligation to halt the harvests and reinitiate ESA consultation.

Oregon Natural Resource Council v. Allen is directly analogous because the important point was that the surrogate was tied to project completion and would not be triggered even if there was more take than anticipated, which rendered the monitoring and reinitiation provisions meaningless. 476 F.3d 1031, 1041 (9th Cir. 2007). That the surrogate in *Allen* involved critical habitat is irrelevant. *See id.* at 1040–41 ("Authorizing take of 'all spotted owls,' without additional limit, is inadequate because it prevents the action agency from fulfilling the monitoring function . . . ."). NMFS's recent regulatory revisions do not undermine the Ninth Circuit's interpretation in *Allen*, but are instead intended to be consistent with this existing case law. 80 Fed. Reg. 26,832, 26,834, 26,843–44 (May 11, 2015).[8, 9] Finally, it is immaterial that ESA regulations define generally when there is a duty to reinitiate because the regulations do not serve the same function as a specific trigger for reinitation. *See Allen*, 476 F.3d at 1034–35 n.5.

V. The Conservancy Will Succeed on Its NEPA Claim.

NMFS violated NEPA by failing to engage in NEPA processes for the 2019 SEAK BiOp. The facts presented here a directly analogous to *Ramsey* and require compliance with NEPA.

[8] NMFS cites to a Federal Register notice issued with this new rule for its contention that some "coextensive" surrogates are permissible. Dkt. 43 at 26. However, the surrogate described there was coextensive with the expected impacts and not with the project; the project was the fill of a quarter acre of wetlands, the surrogate was a limit of filling no more than three pools occupied by the species, such that "in the event a fourth vernal pool was discovered during wetland fill," the limit would be exceeded. 80 Fed. Reg. at 26,834. Unlike the 2019 SEAK BiOp, this example would be lawful under *Allen* because it requires reinitiation if more take occurs than predicted.

[9] The parties appear to agree that, to the extent the 2019 SEAK BiOp is likely to be found legally deficient, the Conservancy is also likely to succeed on its claim that NMFS is in violation of the substantive duty to ensure its actions do not jeopardize protected species. *See* Dkt. 14 at 28; Dkt. 43 at 26 n.10.

NMFS argues that it was not required to comply with NEPA as the "consulting agency" preparing the 2019 SEAK BiOp. Dkt. 43 at 26–27. It is not disputed that when NMFS prepares a BiOp for an action to be implemented by a "downstream federal agency" that will itself comply with NEPA, NMFS need not comply with NEPA. *See, e.g.*, *San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 642–45 (9th Cir. 2014). Here, the State of Alaska, and not a federal agency subject to NEPA, manages the fishery. Dkt. 14-1 at 27, 350, 357. NMFS is both the consulting agency and the action agency for the ESA section 7 consultation, consulting on its own delegation of authority to Alaska to implement the fishery, and therefore there is no other "downstream federal agency" subject to NEPA. Rather, NMFS is responsible for NEPA.

NMFS next argues that it is not required to comply with NEPA because the 2019 SEAK BiOp's ITS does not authorize fisheries. Dkt. 43 at 27. As discussed, this exact argument was explicitly rejected by the Ninth Circuit. *Ramsey*, 96 F.3d at 444 (rejecting NMFS's argument that an ITS "did not authorize the harvesting of endangered salmon" and holding that the ITS "is functionally equivalent to a permit because the activity in question would, for all practical purposes, be prohibited but for the [ITS]"). As in *Ramsey*, the State (Oregon and Washington in *Ramsey*, here Alaska) management of fisheries that cause take of ESA-listed fish "would be illegal" under section 9 of the ESA without the ITS. *See* 96 F.3d at 444. NMFS cannot meaningfully distinguish *Ramsey* here, where NMFS issued an ITS that is required for Alaska to lawfully manage fishing activity from 2019 through 2028.

NMFS also points to its 2012 NEPA efforts in an attempt to avoid NEPA here. Dkt. 43 at 27. However, those prior efforts addressed NMFS's 2012 amendment to the Fishery Management Plan and the 10-year harvest regimes set by the prior iteration of the Pacific Salmon Treaty. *See* Dkt. 43-1 at 1105, 1129–31, 1237. The 2019 SEAK BiOp is an entirely new federal action, approving new 10-year fishing regimes under the 2019 Pacific Treaty and committing to implement a suite of mitigation, none of which is addressed in the 2012 NEPA efforts. *See* Dkt. 14-1 at 26–27, 29–36. NMFS's contention—that it is not required to comply

with NEPA for new fishing regimes if it complied with NEPA for prior fishing regimes—is inconsistent with NEPA's application to all major federal actions and with NMFS's practice for other fisheries. *See, e.g.*, 84 Fed. Reg. 19,729, 19,730 (May 6, 2019) (NEPA for annual West Coast salmon fishery); Dkt. 14-1 at 576 (prior NEPA for West Coast salmon fishery).

NMFS does not explain how the lack of an ITS for the mitigation components relieves it of NEPA obligations. Dkt. 43 at 27–28. NEPA is required before a decision is made to go forward with a proposal, before an agency commits resources or otherwise limits its alternatives, and is "not . . . used to rationalize or justify decisions already made." 40 C.F.R. §§ 1500.1(b), 1506.1(a), 1502.5; *see also Ctr. for Envtl. Law & Policy v. U.S. Bureau of Reclamation*, 655 F.3d 1000, 1006–07 (9th Cir. 2011) (NEPA not triggered if no "irreversible commitments" and "absolute authority" retained to not implement project (citation omitted)). Here, NMFS repeatedly represents that it has made a "definite commitment or resources" to implement the mitigation, including to disburse funds, and that it is trying to convince hatchery operators to produce fish for Southern Residents. *E.g.*, Dkt. 43 at 22; Dkt. 43-5 ¶¶ 6–11; Dkt. 43-4 ¶¶ 10–12. Further, the 2019 SEAK BiOp's ITS includes terms requiring NMFS implement the mitigation. Dkt. 14-1 at 358; *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 184 F. Supp. 3d 861, 933 (D. Or. 2016) ("adoption and implementation" of BiOp triggers NEPA).

VI. The Requested Injunction Is Necessary to Prevent Likely Irreparable Injury.

A. An injunction is needed to protect Southern Residents.

NMFS, the Alaska Trollers Association ("Trollers"), and their experts are well-aware of the critical state of the Southern Residents. As Defendant Barry Thom said: "The clock is running out on [Southern Resident] killer whale recovery, and it is heart wrenching to see."[10]

NMFS and Trollers proffer "irreparable injury" standards that are inconsistent with Ninth Circuit precedent. *See* Dkt. 43 at 28 (there must be "significant population-level effects" and a

[10] Lynda Mapes, *Angry at plight of southern-resident orcas, speakers rebuke NOAA in public meetings*, SEATTLE TIMES (Sept. 16, 2018, 7:40 pm), https://www.seattletimes.com/seattle-news/environment/angry-at-plight-of-southern-resident-orcas-speakers-rebuke-noaa-in-public-meetings/.

showing of "probable deaths during the interim period and of how these deaths may impact the species"); Dkt. 33 at 10 (the action must reduce appreciably the likelihood of the species' survival). Those standards are premised on outdated district court cases holding that "irreparable harm to the species as a whole" is needed. *See Nw. Envtl. Def. Ctr. v. U.S. Army Corps of Eng'rs*, 817 F. Supp. 2d 1290, 1315 (D. Or. 2011). The Ninth Circuit has since explicitly held that "an extinction-level threat to listed species is not required." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 886 F.3d 803, 819 (9th Cir. 2018) ("*Nat'l Wildlife Fed'n III*"). Rather, "[h]arm to . . . members is irreparable because 'once a member of an endangered species has been injured, the task of preserving that species becomes all the more difficult.'" *Id.* at 818 (citation omitted). Further, the activity need not be the exclusive cause of harm and a showing that the injunction would forestall irreparable injury is sufficient. *Id.* at 819. Under this standard, "establishing irreparable injury [under the ESA] should not be an onerous task . . . ." *Cottonwood Envtl. Law Ctr. v. U.S. Forest Serv.*, 789 F.3d 1075, 1091 (9th Cir. 2015).

There is no dispute that Southern Residents are "clearly in trouble" and that reduced prey is contributing significantly to the declining population. *See* Dkt. 36 ¶ 8(a); Dkt. 14-1 at 108–110, 266, 334. There is also no dispute that the salmon harvests at issue will reduce the prey available to the Southern Residents. *See* Dkt. 43 at 30. While NMFS and the Trollers attempt to downplay the significance of those reductions, the 2019 SEAK BiOp predicted reductions as high as 12.9% and ultimately concluded that, absent the non-existent mitigation, harvests would "adversely affect" the Southern Residents' critical habitat by limiting prey. Dkt. 14-1 at 271–72, 339. Section 7 of the ESA prohibits such actions that adversely modify critical habitat. *See* 16 U.S.C. § 1536(a)(2); *Nat. Res. Def. Council v. Jewell*, 749 F.3d 776, 779 (9th Cir. 2014).

NMFS and the Trollers point to optimistic predictions for this year's salmon run in arguing against irreparable injury, but those arguments are misplaced. *See*, *e.g.*, Dkt. 43-3 ¶ 10. The predicted abundance levels for this summer are merely above levels considered "low" under patterns experienced between 1999 and 2014. *See id.*; Dkt. 14-1 at 270–73. This is hardly

reassuring given that the Southern Resident population declined during that period. *See* Dkt. 14-2 ¶¶ 6, 9; Dkt. 14-1 at 108 (97 whales in 1996; 87 whales in 2011; 74 as of December 2018). Further, NMFS and Trollers focus entirely on harm caused by this summer's harvest. *See* Dkt. 43-3 ¶ 14; Dkt. 36 ¶¶ 8(f), (h), 9. However, the Conservancy has requested preliminary relief while this matter is pending, which will extend at least through the winter season set to commence on October 11. *See* Dkt. 14-1 at 477. The 2019 SEAK BiOp emphasized that, since "killer whale gestation is approximately 18 months . . . , it is important to have multiple years of sufficient Chinook prey availability to improve fecundity." *Id.* at 266 (citation omitted).

NMFS's expert opines that "the 2020 SEAK EEZ fisheries will not reduce the likelihood that [Southern Residents] will survive and recover." Dkt. 43-3 ¶ 14. The focus on only one season undermines the usefulness of this opinion given the cumulative nature of harm from consecutive harvests. Moreover, this opinion focuses on the wrong irreparable injury standard—whether the action jeopardizes the species. *See* 50 C.F.R. § 402.02. Finally, the focus on whether the fishery at issue here will, alone, cause injury is misplaced. *See Nat'l Wildlife Fed'n III*, 886 F.3d at 819 (activity need not be the exclusive cause). These attempts to minimize piecemeal reduction of prey are inconsistent with the ESA. *See Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 522 (9th Cir. 2010) (Under a piecemeal approach, "a listed species could be gradually destroyed, so long as each step on the path to destruction is sufficiently modest. This type of slow slide into oblivion is one of the very ills the ESA seeks to prevent." (citation omitted)).

No expert opines that Southern Residents will have sufficient prey anytime in the near future to sustain the population. They will not have sufficient prey under any scenario. *See* Dkt. 14-3 ¶ 32. While the parties dispute the extent of benefit provided by the requested relief, no one disputes that additional prey would be made available to aid in forestalling the species' decline. That is a sufficient for an injunction for ESA violations. *See Nat'l Wildlife Fed'n III*, 886 F.3d at

819 (showing that injunction would forestall injury is sufficient).[11]

B. The supposed delay does not support denial of the Motion.

Delay in seeking interim relief is "one factor among the many" to be considered in evaluating whether irreparable injury is likely because delay "can imply the lack of need for such relief." *Cuviello v. City of Vallejo*, 944 F.3d 816, 833 (9th Cir. 2019). However, "delay by itself is not a determinative factor;" rather, "courts are loath to withhold relief *solely on that ground*." *Id.* (citations omitted). Delay "is not particularly probative in the context of ongoing, worsening injuries." *Arc of Cal. v. Douglas*, 757 F.3d 975, 990–91 (9th Cir. 2014).

These proceedings do not imply that interim relief is unwarranted. The Conservancy is a relatively small non-profit organization with limited resources. *See* Dkt. 14–4 ¶¶ 2, 6–7. NMFS's 2019 SEAK BiOp, issued in April 2019, is over 400 pages and dense with technical analyses. Dkt. 14-1 at 5–447. While unable to affect 2019 harvests, the Conservancy issued the required 60-day pre-suit notice letter on January 9, 2020, filed the complaint on March 18, 2020, and filed the Motion on April 16, 2020 seeking relief beginning with the 2020 harvest. This required substantial expert and legal investments, demonstrating the Conservancy's significant concern about the harm at issue. *See Native Ecosystems Council v. Marten*, 334 F. Supp. 3d 1124, 1133 (D. Mont. 2018) ("The Court is not convinced that a ten-month delay should impact the efficacy of Plaintiffs' request.").[12] Given the ongoing nature of the injuries caused by each harvest, any supposed delay "is not particularly probative." *Arc of Cal.*, 757 F.3d at 990–91. Further, inferences associated with delay do not supplant the Ninth Circuit's standard for injury under the ESA. *See Cuviello*, 944 F.3d at 833–34 (despite delay, constitutional injuries do not require a strong showing). Finally, courts are exceedingly reluctant to withhold relief due to an alleged

[11] NMFS suggests that irreparable harm to Southern Residents will not cause irreparable injury to the Conservancy's members. Dkt. 43 at 28–29. However, the Conservancy has fully demonstrated "irreparable harm to [its] own interests stemming from the irreparable harm to the listed species." *See Nat'l Wildlife Fed'n III*, 886 F.3d at 822.
[12] In contrast, courts have found that delays lasting several years suggest a lack irreparable injury. *See, e.g., Oakland Tribune, Inc. v. Chronicle Pub. Co.*, 762 F.2d 1374, 1377 (9th Cir. 1985) (unchallenged for "a number of years"); *Lydo Enters. v. Las Vegas*, 745 F.2d 1211, 1214 (9th Cir. 1984) (plaintiff "delayed five years before taking action")

delay where public interests, such as protection of Southern Residents, are at issue. *See, e.g.*, *Apache Survival Coal. v. United States*, 21 F.3d 895, 905–06 (9th Cir. 1994).[13]

VII. The Equities Favor an Injunction.

Despite Trollers' protestations, the Ninth Circuit has made it abundantly clear that the Court is not to balance hardships or evaluate public interests for ESA violations, as Congress has decided that the balance always favors protection of imperiled species. *See Nat'l Wildlife Fed'n III*, 886 F.3d at 817. NMFS claims, without explanation, that the injunction will interfere with actions to benefit Southern Residents. Dkt. 43 at 32. This is misplaced, as the injunction would merely halt harvests, including of threatened Chinook salmon, providing additional prey to Southern Residents. Accordingly, the requested injunction should be issued for the ESA violations alone, without a balancing of the equities, because Congress intended that species be protected, "whatever the cost." *See Nat'l Wildlife Fed'n III*, 886 F.3d at 818 (citation omitted)

As an additional independent basis for the injunction, the equities favor an injunction for the NEPA violations. While the Conservancy recognizes that the injunction may have significant impacts on certain commercial fishermen, most salmon fisheries in Alaska would be unaffected. The salmon fishery at issue takes place more than three miles from the coastline and is a "mixed stock" fishery; it catches fish that originate in rivers from Oregon to Alaska. *See* Dkt. 14-1 at 36–37, 151. Salmon that are not harvested in the fishery migrate back to their bays, estuaries, and rivers of origin. *See id.* at 36. Those salmon will be available to predators like the Southern Residents, will spawn to help sustain populations, or be harvested where returns are sufficient.

The requested injunction would not impact any salmon fisheries that occur within three miles of the Alaska coastline (outside of federal waters); e.g., salmon fisheries in Bristol Bay, Copper River, Prince William Sound, Cook Inlet, Yukon River, Norton Sound, Kodiak Island, Aleutian Islands. *See generally* Alaska Admin. Code tit. 5, chs. 4–24. Unlike the federal ocean

[13] *See also Sierra Club v. Bosworth*, No. C 05-00397 CRB, 2005 U.S. Dist. LEXIS 27573, at *37 (N.D. Cal. Nov. 14, 2005); *Klamath Tribes v. U.S. Bureau of Reclamation*, No. 18-cv-03078-WHO, 2018 U.S. Dist. LEXIS 124741, at *48–49 (N.D. Cal. July 25, 2018).

fishery at issue, these state Chinook salmon fisheries harvest primarily fish originating in Alaska. Trollers' economic estimates, which are inflated by unidentified "multiplier" effects, do not take into account the availability of these other fisheries. *Compare* Dkt. 41 ¶¶ 8, 11, *with* Dkt. 34 ¶ 46. Those estimates are also grossly disproportionate to predictions on the number of salmon potentially subject to the injunction. *See* Dkt. 36 ¶ 8(f); Dkt. 43-3 ¶ 6. Here, unlike in *Amoco Prod. Co. v. Vill. of Gambell, AK*, 480 U.S. 531 (1987), substantially all economic losses are prospective and speculative, while parties unanimously agree the Southern Residents will be impacted, though disagree to the extent. Under these circumstances, the equites favor an injunction while NMFS conducts the careful evaluation of harvests and hypothetical mitigation required by NEPA. *See All. for the Wild Rockies v. Cottrell*, 632 F.3d 1127, 1138 (9th Cir. 2011).

VIII. No Bond or a Nominal Bond Is Warranted.

The Court should reject the Trollers' request for a substantial bond, which would preclude relief. The Rule does not contemplate consideration of Trollers' economic interests because only NMFS would be enjoined. *See* Fed. R. Civ. P. 65(c) (bond intended for those "enjoined or restrained); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, No. CV 01-640-RE, 2005 U.S. Dist. LEXIS 16656, at *8–9 (D. Or. June 17, 2005) (economic harm to a non-enjoined intervenor not relevant); *Nintendo of Am., Inc. v. Lewis Galoob Toys, Inc.*, 16 F.3d 1032, 1036 & n.3 (9th Cir. 1994) (defining wrongfully enjoined or restrained). Despite Trollers' unexplained contention, the Conservancy established that a significant bond would cause an undue hardship. Dkt. 14-4 ¶¶ 5–9. Under these circumstances, courts almost uniformly waive substantial bond requirements in cases enforcing public interests. *E.g.*, *Nat'l Wildlife Fed'n*, 2005 U.S. Dist. LEXIS 16656, at *7–9; *Cent. Or. Landwatch v. Connaughton*, 905 F. Supp. 2d 1192, 1198 (D. Or. 2012) (practice "well established").

IX. Conclusion.

Wherefore, the Conservancy respectfully requests that the Court enter an order establishing the preliminary injunctive relief requested.

Respectfully submitted this 15th day of May, 2020.

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HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, in his official capacity as Regional Administrator for the National Marine Fisheries Service, *et al.*, Defendants.	Case No. 2:20-cv-00417-MLP PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION NOTE ON MOTION CALENDAR: May 8, 2020[1]

[1] Plaintiff is not requesting oral argument in an effort to avoid any delay in the Court's consideration of this motion associated with the Coronavirus outbreak. Plaintiff welcomes the opportunity to provide oral argument remotely consistent with General Order 02-20 if the Court is inclined to hold such a hearing.

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GLOSSORY OF ACRONYMS

BiOp	Biological Opinion
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESU	Evolutionary Significant Unit
FONSI	Finding of No Significant Impact
FWS	U.S. Fish and Wildlife Service
ITS	Incidental Take Statement
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service

I. MOTION.

Plaintiff Wild Fish Conservancy ("Conservancy") hereby moves under Rule 65(a) for a preliminary injunction and respectfully requests the Court enter an order staying the National Marine Fisheries Service's ("NMFS") authorizations of commercial Chinook salmon fisheries in federal waters off the coast of Southeast Alaska, set to commence on July 1, to protect imperiled Southern Resident Killer Whales while this matter is pending and while NMFS complies with the Endangered Species Act ("ESA") and the National Environmental Policy Act ("NEPA").

II. INTRODUCTION.

In 2018, the nation watched spellbound as a grieving Southern Resident Killer Whale, Tahlequah, carried the body of her dead calf, who had died less than an hour after birth, for seventeen days across hundreds of miles before letting him sink. That episode was emblematic of the plight faced today by the killer whale population whose home is the Salish Sea. The Southern Residents are unable to produce enough live offspring to sustain the population due primarily to a lack of Chinook salmon, their principal prey. Thus, despite being listed under the ESA as an endangered species since 2005, the Southern Resident population has declined to a near-historic low of 72 whales with, only 26 reproductive aged females.

The Supreme Court has explained that, in enacting the ESA, Congress sought to "halt and reverse the trend toward species extinction, whatever the cost." *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184 (1978). Central to achieving that objective is the requirement of section 7 of the ESA for each federal agency to ensure that any action authorized by such agency is not likely to jeopardize a protected species or adversely modify its critical habitat. 16 U.S.C. § 1536(a)(2).

Despite that mandate, NMFS has authorized commercial salmon harvests in federal waters off the coast of Southeast Alaska at levels that will lead to the continued starvation of Southern Residents, causing the species to hasten its decline towards extinction. NMFS does not dispute that the authorized harvest levels are inconsistent with section 7 of the ESA; indeed, NMFS candidly admits that the fishery "is likely to adversely affect designated critical habitat"

for Southern Residents. *See* Decl. of Brian A. Knutsen ("Knutsen Decl.") 339. Instead, NMFS assumes that, despite being unable to do so for the last fifteen years, it will be able to develop, fund, and implement mitigation measures to offset impacts from the salmon harvests before the Southern Residents go extinct. Ninth Circuit precedent prohibits NMFS from gambling on such non-existent future mitigation to offset concrete and immediate harm to imperiled species.

NMFS approved the commercial salmon harvests in violation of the ESA and without completing procedures required by NEPA, such as evaluating alternative harvest levels. Because the Conservancy is likely to prevail, the requested relief should be issued to prevent irreparable injury to Southern Residents and to the Conservancy's and its members' interests in protecting that species. Absent such relief, the unlawfully-approved harvests will ensure that the Southern Residents continuing declining toward extinction, edging closer to the point of no return. In these circumstances, the ESA compels an injunction because Congress has made clear that "endangered species to be afforded the highest of priorities" and it is "for the courts to enforce [such Congressional priorities] when enforcement is sought." *See Hill*, 437 U.S. at 168, 174, 194.

III. LEGAL FRAMEWORK.

A. The Endangered Species Act.

Congress enacted the ESA to conserve imperiled species and protect the ecosystems upon which they depend. 16 U.S.C. § 1531(b). The statute assigns implementation responsibilities to the Secretaries for the Departments of Commerce and the Interior, who have delegated duties to NMFS and the United States Fish and Wildlife Service ("FWS"), respectively. *See* 50 C.F.R. § 402.01(b). NMFS generally has ESA authority for marine and anadromous species, while FWS has jurisdiction over terrestrial and freshwater species. *See id.* §§ 17.11, 223.102, 224.101.

Section 4 of the ESA prescribes mechanisms by which NMFS and FWS list "species," defined to include a "distinct population segment of any species of vertebrate . . . . [that] interbreeds when mature," as endangered or threatened and designate "critical habitat" for such species. 16 U.S.C. §§ 1532(16), 1533(a). Section 9 of the ESA makes it unlawful to "take" listed

species. *See* 16 U.S.C. § 1538(a)(1)(B); 50 C.F.R. § 223.203(a). "Take" includes to harm, kill, or capture a protected species. 16 U.S.C. § 1532(19). Harm includes "significant habitat modification" that "kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including, breeding, spawning . . . , [or] feeding . . . ." 50 C.F.R. 222.102.

Section 7 of the ESA imposes substantive and procedural requirements on federal actions. *See* 50 C.F.R. § 402.03. Substantively, it mandates that federal agencies "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered . . . or threatened species or result in the destruction or adverse modification" of such species' critical habitat. 16 U.S.C. § 1536(a)(2); *Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of the Navy*, 898 F.2d 1410, 1415 (9th Cir. 1990). Procedurally, it requires an agency planning an action that "may affect" listed species (the "action agency") to consult with NMFS and/or FWS (the "consulting agency"). 50 C.F.R. § 402.14(a). Such consultation is intended to facilitate compliance with the substantive mandate. *See Thomas v. Peterson*, 753 F.2d 754, 763–65 (9th Cir. 1985), *abrogated on other grounds*, *Cottonwood Envtl. Law Ctr. v. U.S. Forest Serv.*, 789 F.3d 1075, 1091–92 (9th Cir. 2015).

Consultation results in the consulting agency's issuance of a biological opinion ("BiOp") determining whether the action is likely to jeopardize listed species or adversely modify critical habitat. 50 C.F.R. § 402.14(h)(3); *see id.* § 402.02. If jeopardy and adverse modification are not likely, the BiOp includes an incidental take statement ("ITS") defining the "take" anticipated from the action. 16 U.S.C. § 1536(b)(4)(C)(i); 50 C.F.R. § 402.14(*i*)(1)(i). The ITS also includes requirements to minimize impacts to species and to monitor the take that occurs. 16 U.S.C. § 1536(b)(4)(C)(iii), (iv); 50 C.F.R § 402.14(*i*)(1)(ii), (*i*)(1)(iv), (*i*)(3); *Wild Fish Conservancy v. Salazar*, 628 F.3d 513, 531–32 (9th Cir. 2010). Take in compliance with an ITS is exempt from liability under section 9 of the ESA. 16 U.S.C. § 1536(o)(2); 50 C.F.R. § 402.14(*i*)(5).

B. <u>The National Environmental Policy Act</u>.

NEPA directs federal agencies to "include in every recommendation or report on . . .

major Federal actions significantly affecting the quality of the human environment, a detailed statement . . . on the environmental impact of the proposed action . . . .” 42 U.S.C. § 4332(2)(C)(i). This environmental impact statement (“EIS”) ensures that the agency considers detailed information on environmental impacts when reaching decisions and that the information will be made available to the larger audience that may also play a role in the decision making process. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

NEPA requires the environmental information be available *before* decisions are made and *before* actions are taken. 40 C.F.R. § 1500.1(b), (c). An EIS is required for any major federal action having a significant impact on the environment. *See Northcoast Envtl. Ctr. v. Glickman*, 136 F.3d 660, 666 (9th Cir. 1998). An environmental assessment (“EA”) must be prepared to determine whether an action meets this threshold if it is neither one that normally does or does not require an EIS. *Hale v. Norton*, 476 F.3d 694, 700 (9th Cir. 2007); 40 C.F.R. § 1501.4. If it is determined that no significant impact will occur, the agency must issue a “finding of no significant impact” (“FONSI”). 40 C.F.R. §§ 1501.4(e), 1508.13.

C. The Magnuson-Stevens Act.

The Magnuson-Stevens Fishery Conservation and Management Act (“Magnuson-Stevens Act”) establishes exclusive federal management over fisheries within the Exclusive Economic Zones of the United States; i.e., the “federal waters” generally located from three nautical miles from the coastline to 200 nautical miles from the coastline. 16 U.S.C. §§ 1802(11), 1811(a); 48 Fed. Reg. 10,605 (March 14, 1983). The Secretary of Commerce is charged with implementing the statute and has delegated responsibilities to NMFS. *See* 16 U.S.C. §§ 1854, 1855(d).[2] The statute also provides for Regional Fishery Management Councils. 16 U.S.C. § 1852(a)(1).

The Regional Councils are to prepare fishery management plans and amendments thereto for each fishery under their jurisdiction and submit the plans to NMFS. *Id.* § 1852(h)(1). The

[2] *See also* U.S. Dep’t of Commerce, *Department Organization Order* 10-15, § 3.01(aa) (Dec. 12, 2011), https://www.osec.doc.gov/opog/dmp/doos/doo10_15.html; U.S. Dep’t of Commerce, *NOAA Organizational Handbook Transmittal No. 61* (Jan. 26, 2015), http://www.corporateservices.noaa.gov/ames/delegations_of_authority/ (Part II(C)(26)).

plans must contain, *inter alia*, management measures to prevent overfishing and be consistent with other applicable laws. *Id.* § 1853(a)(1). NMFS must review the plans, including amendments, to determine whether they are consistent with the Magnuson-Stevens Act "and any other applicable law." *Id.* § 1854(a)(1)(A). NMFS then approves, disapproves, or partially approves the plans. *Id.* § 1854(a)(3). The Regional Councils are also to submit proposed regulations to NMFS to implement the plans, which NMFS will then promulgate if the proposed regulations are consistent with the plans and other applicable laws. *Id.* §§ 1853(c), 1854(b).

The Magnuson-Stevens Act provides that a State may regulate fishing outside its boundaries if authorized by a fishery management plan and the State's fishing regulations are consistent with the applicable fishery management plan. *Id.* § 1856(a)(3)(B). However, NMFS remains primarily responsible for implementing all fishery management plans. *See id.* § 1855(d).

IV. STATEMENT OF FACTS.

A. Endangered Southern Resident Killer Whale and Threatened Salmonids.

NMFS listed the Southern Resident Killer Whale distinct population segment as endangered under the ESA in 2005 and designated its critical habitat in 2006. 70 Fed. Reg. 69,903 (Nov. 18, 2005); 71 Fed. Reg. 69,054 (Nov. 29, 2006); 50 C.F.R. §§ 224.101(h), 226.206.

"[T]he Southern Resident population has declined to historically low levels." Knutsen Decl. 108. As of December 2018, there were only 74 whales. *Id.*[3] In early 2019, there were 26 reproductive age females (aged 11–42 years), of which only 14 had successfully reproduced in the prior 10 years, and there had been no viable calves since the beginning of 2016. *Id.* at 266.

A primary limiting factor for Southern Residents is prey availability, with limited prey contributing to premature mortality and reduced fecundity. *Id.* at 108, 114, 118–19, 266. Females are producing a low number of surviving calves during their reproductive life span and experiencing late onset of sexual maturity and a long average reproductive interval (6.1 years). *Id.* at 108. "[T]his reduced fecundity is largely due to nutritional limitation." *Id.* at 108, 266.

[3] As of the date of this motion, that population has declined to 72 whales.

Indeed, a recent assessment found that "the effects of prey abundance on fecundity and survival had the largest impact on the population growth rate." *Id.* at 110.

Southern Residents consume a variety of fish species and one squid species. *Id.* at 114–15. However, salmon and steelhead make up to 98 percent of their diet. *Id.* at 115. Specifically, the whales consume mostly larger (i.e., older) Chinook salmon, with 80 to 90 percent of the species' diet consisting of Chinook salmon. *Id.* This preference for Chinook salmon persists despite much lower abundance than other salmonids in some areas and during certain periods. *Id.*

NMFS listed the Snake River fall-run Chinook salmon evolutionary significant unit ("ESU") as a threatened species in 1992 and the Puget Sound, the Lower Columbia River, and the Upper Willamette River Chinook salmon ESUs as threatened species in 1999. 57 Fed. Reg. 14,653 (Apr. 22, 1992); 64 Fed. Reg. 14,308 (Mar. 24, 1999); 50 C.F.R. § 223.102(e).

B. The Pacific Salmon Treaty.

The United States and Canada first ratified the Pacific Salmon Treaty in 1985. Knutsen Decl. 472. A primary objective of the treaty was to ensure that each county receive equitable benefits from the Pacific salmon stocks originating in its waters. *Id.*

The Pacific Salmon Treaty establishes upper limits on "intercepting fisheries," defined as fisheries in one country that harvest salmon originating in another country. *Id.* at 26. These fishing regimes are contained in Annex IV to the Pacific Salmon Treaty. *Id.* The original agreed-upon regimes expired in 1992. *Id.* A new comprehensive agreement was reached in 1999 that established 10-year fishery regimes, with the next set of regimes agreed upon in 2009. *Id.* at 26–27. The current set of agreements became effective in 2019. *See id.* at 27; *id.* at 490. Chapter 3 of Annex IV to the 2019 Pacific Salmon Treaty defines the management regime for the Chinook salmon fisheries and is effective from 2019 through 2028. *See id.* at 27; *id.* at 513.

C. The Fishery Management Plan for Salmon Fisheries in Alaska.

The North Pacific Fishery Management Council ("Council"), created under the Magnuson-Stevens Act, is assigned fishery responsibilities for Alaska. 16 U.S.C. §

1852(a)(1)(G). The Council first developed a salmon fishery management plan for Alaska in 1979 and has since issued numerous amendments, the most recent of which NMFS approved in 2018. Knutsen Decl. 451–52; 83 Fed. Reg. 31,340 (July 5, 2018).

The Council's Fishery Management Plan provides for two salmon fisheries, both of which occur in Southeast Alaska: a commercial troll salmon fishery and a sport fishery. Knutsen Decl. 463–64. The Fishery Management Plan delegates management authority over these fisheries to the State of Alaska under the Magnuson-Stevens Act. *E.g.*, *id.* at 469–70 (citing 16 U.S.C. § 1856(a)(3)). NMFS, however, retains ongoing oversight authority of Alaska's management of these federal fisheries. *Id.* at 484–88. For example, Alaska must provide NMFS with information on the State's fishery management measures, NMFS must determine whether the measures are consistent with the Fishery Management Plan, the Magnuson-Stevens Act, and other applicable laws, and NMFS is to take appropriate corrective action, if necessary. *Id.* NMFS also provides funding to Alaska to manage and monitor the fisheries. *Id.* at 30.

The commercial fishery harvests primarily Chinook and coho salmon. *Id.* at 477. The fishery is divided into two seasons: a winter season and a general summer season; the summer season is further divided into spring and summer fisheries. *Id.* The winter troll season is from October 11 through April 30 and is managed not to exceed a harvest level of 45,000 Chinook salmon. *Id.* The spring troll fishery does not occur within the Exclusive Economic Zone and is not subject to the Fishery Management Plan. *Id.* The summer troll fishery opens on July 1 and targets all remaining Chinook salmon available under the annual quota set pursuant to the Pacific Salmon Treaty. *Id.* at 478. NMFS and Alaska thereby manage the fishery to harvest all fish allowed under the Pacific Salmon Treaty. On February 11, 2020, Alaska announced this year's Chinook salmon harvest limits consistent with the 2019 Pacific Salmon Treaty. *Id.* at 530–31.

D. NMFS's 2019 BiOp on Management of Southeast Alaska Salmon Fisheries.

NMFS first consulted under the ESA on the Alaska salmon fisheries in 1993, followed by annual consultations through 1998. *Id.* at 27. NMFS then consulted in 1999 and again in 2009 on

the 10-year fishery regimes set under the Pacific Salmon Treaty. *Id.* at 27–28. NMFS reinitiated consultation following completion of the 2019 Pacific Salmon Treaty and issued a new BiOp on April 5, 2019 ("2019 SEAK BiOp"). *Id.* at 5–447. The federal actions addressed in the 2019 SEAK BiOp included NMFS's ongoing delegation of authority to Alaska over the salmon fisheries in the Exclusive Economic Zone of Southeast Alaska and NMFS's funding to the State for its management and monitoring of the fisheries. *Id.* at 29–33.

The 2019 SEAK BiOp acknowledges that the Southern Resident Killer Whale is at a high risk of extinction due largely to low fecundity rates, which are primarily attributable to reduced prey abundance; namely, Chinook salmon. *Id.* at 108–10, 266. NMFS explains that, "[u]nder the existing management and recovery regimes over the last decade, salmon availability has not been sufficient to support Southern Resident population growth." *Id.* at 335. NMFS cites the finding in Dr. Robert Lacy's 2017 population viability assessment that prey abundance has the largest impact on population growth and that **Chinook abundance would need to increase by 15%** to achieve the recovery target growth rate set for the Southern Residents. *Id.* at 110, 335.

Attempts were made during negotiations on the 2019 Pacific Salmon Treaty to reduce harvests to conserve Southern Residents and Puget Sound salmon, but they were unsuccessful:

> [T]here was a practical limit to what could be achieved through the bilateral negotiation process. As a consequence . . . , the U.S. Section generally recognized that **more would be required to mitigate the effects of harvest** and other limiting factors that contributed to the reduced status of Puget Sound Chinook salmon and [Southern Resident Killer Whales] . . . .

Id. at 33–34 (emphasis added). The fisheries in the federal waters of Southeast Alaska under the 2019 Pacific Salmon Treaty will therefore continue to reduce prey available to the Southern Residents. *E.g.*, *id.* at 268. NMFS estimates that prey availability reductions in coastal waters will range from 0.2% to an astonishing **12.9%** and in inland waters from 0.1% to 2.5%. *Id.* at 271–72. NMFS estimates that the fisheries reduce the larger Chinook salmon—those from 3 to 5 years old—from the Southern Resident's critical habitat by 0.1% to 2.5%. *Id.* at 339. Southern Resident Killer Whales consume mostly these larger and older Chinook salmon. *Id.* at 115.

NMSF repeatedly explains in the 2019 SEAK BiOp that the Pacific Salmon Treaty merely sets an upper limit on harvests and that NMFS can further restrict the fisheries to protect imperiled species under the ESA. *Id.* at 26, 44, 200, 268. However, instead of limiting harvest to ensure the fisheries do not jeopardize ESA-listed species, NMFS relies upon a hypothetical federal "funding initiative" in a supposed effort to mitigate harm to Puget Sound Chinook salmon and Southern Residents. *Id.* at 33–35. This initiative includes three elements. *Id.* at 34. First, $3.06 million per year for Puget Sound Chinook salmon conservation[4] hatcheries; specifically, for increased funding for existing programs on the Nooksack, Dungeness, and Stillaguamish Rivers and for funding a new program in Hood Canal. *Id.* at 34, 252. Second, around $31.2 million for habitat projects intended to benefit Chinook salmon populations in those same four Puget Sound watersheds. *Id.* at 34, 251–52. The third component is for dramatic increases in Chinook salmon hatchery production to provide a "meaningful increase"—4% to 5%—in prey availability for the Southern Resident Killer Whale. *Id.* at 34–35. NMFS proposes spending "no less than $5.6 million per year" on this third component to generate 20 million hatchery smolts each year, with five to six million released at Puget Sound hatcheries and the remainder from facilities on the Columbia River and the Washington Coast. *Id.* at 35.

The 2019 SEAK BiOp found that the Southeast Alaska salmon fishery "**is likely to adversely affect designated critical habitat**" for Southern Residents "[d]uring the time it takes for… hatchery fish [produced under the mitigation package] to return as adults to critical habitat areas…." *Id.* at 339 (emphasis added). It is unclear how long NMFS believes that will be, as the funding initiative "is not anticipated to be implemented immediately." *Id.* at 267. Further, any hatchery fish produced would not be available to Southern Residents until "several years" after release because the whales "prefer to consume larger (i.e., older) Chinook salmon." *Id.* at 339.

NMFS nonetheless assumed that this aspirational "mitigation package" will eventually

[4] A conservation hatchery is designed to preserve the genetic resources of a salmon population, as opposed to a program designed to provide other benefits, such as harvests. *See* Knutsen Decl. 252.

produce beneficial effects via returning adult hatchery fish when evaluating whether the Southeast Alaska salmon fisheries are likely to jeopardize ESA-listed species or adversely modify critical habitat under section 7(a)(2) of the ESA. *See, e.g.*, *id.* at 332–33, 338–39. NMFS ultimately concluded that the fisheries are not likely to jeopardize the Southern Resident or adversely modify its critical habitat. *See id.* at 340; 50 C.F.R. § 402.02 (defining "jeopardize the continued existence of"). NMFS similarly concluded that the actions will not jeopardize the four affected Chinook salmon ESUs (including Puget Sound Chinook salmon), the Mexico Humpback Whale, or the Western Steller Sea Lions. Knutsen Decl. 317–33, 340–49.

The 2019 SEAK BiOp thus includes an ITS allowing for salmon fisheries in federal waters of Southeast Alaska to harvest up to the limits allowed under the 2019 Pacific Salmon Treaty. *Id.* at 350. The ITS authorizes take of Southern Residents, four threatened Chinook salmon ESUs, Mexico Humpback Whales, and Western Steller Sea Lions. *Id.* at 350–51.

V. STANDARD OF REVIEW.

Generally, a party seeking a preliminary injunction "must establish that he is likely to succeed on the merits, that he is likely to suffer irreparable harm in the absence of preliminary relief, that the balance of equities tips in his favor, and that an injunction is in the public interest." *Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7, 20 (2008); *see also All. for the Wild Rockies v. Cottrell*, 632 F.3d 1127, 1134–35 (9th Cir. 2011) ("serious questions" test).

However, "Congress intended endangered species to be afforded the highest of priorities" and once Congress has so "decided the order of priorities in a given area, it is . . . for the courts to enforce them . . . ." *Hill*, 437 U.S. at 174, 194. Thus, "[w]hen considering an injunction under the ESA, we presume . . . that the balance of interests weighs in favor of protecting endangered species, and that the public interest would not be disserved by an injunction." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 886 F.3d 803, 817 (9th Cir. 2018) ("*Nat'l Wildlife Fed'n III*"); *see also Wash. Toxics Coal. v. Envtl. Prot. Agency*, 413 F.3d 1024, 1035 (9th Cir. 2005) ("the balance of hardships always tips sharply in favor of the endangered or threatened species").

VI. ARGUMENT.[5]

A. The Conservancy Will Succeed on its Challenge to the 2019 SEAK BiOp.

The Conservancy is likely to succeed on its challenge to the 2019 SEAK BiOp. The 2019 SEAK BiOp is inconsistent with the ESA in several significant respects, only two of which are addressed herein. First, NMFS unlawfully relied on uncertain future mitigation to offset certain and immediate harm from the fisheries. Second, NMFS failed to adequately define the amount of take of Southern Residents that can lawfully result before it must reinitiate ESA consultation on the fisheries. Given the seriousness of these deficiencies, NMFS will not be able to overcome the Administrative Procedure Act's presumptive remedy requiring that the 2019 SEAK BiOp be set aside. *See* 5 U.S.C. § 706(2)(A); *Pollinator Stewardship Council v. U.S. Envtl. Prot. Agency*, 806 F.3d 520, 532 (9th Cir. 2015) (vacatur standard); *Coal. to Protect Puget Sound Habitat v. U.S. Army Corps of Eng'rs*, 417 F. Supp. 3d 1354, 1368–69 (W.D. Wash. 2019).

1. NMFS's no jeopardy opinion relies on uncertain mitigation.

Perhaps the most disconcerting deficiency in the 2019 SEAK BiOp is NMFS's reliance on uncertain, unfunded, and unapproved future mitigation. The Southern Resident population is at an increasingly high risk of extinction primarily due to insufficient prey. Knutsen Decl. 108–10, 266. NMFS nonetheless approved salmon harvests that will continue to reduce prey to far below what is necessary to recover or sustain the species. *See id.* at 110, 272–73, 335. To provide ESA authorization for these fisheries, NMFS had to manufacture new and vaguely-defined mitigation proposals and presume the hypothetical projects will produce additional Chinook salmon available to the Southern Residents before the whales go extinct. That violates the ESA.

Section 7 of the ESA requires that each federal agency "insure" that any action it funds or authorizes "is not likely to jeopardize" a protected species or result in the "adverse modification"

[5] The Conservancy has constitutional and prudential standing. *See Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 180–81 (2000) (constitutional requirements); *Fed. Election Comm'n v. Akins*, 524 U.S. 11, 21 (1998) (injury to organization); *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 859–61 (9th Cir. 2005) (procedural injury and prudential requirements); Decl. of Kurt Beardslee ¶¶ 2–4, 10–11; Decl. of William John McMillan ¶¶ 2–25; Decl. of Peter W. Soverel ¶¶ 2–17.

of critical habitat. 16 U.S.C. § 1536(a)(2). To satisfy the duty to **insure** no jeopardy, future mitigation measures cannot be relied upon to offset certain negative impacts absent "**solid guarantees that they will actually occur**." *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 935 (9th Cir. 2008) ("*Nat'l Wildlife Fed'n II*") (emphasis added).

In *National Wildlife Federation II*, a "2004 BiOp explicitly found that the proposed [dam] operations would have significant negative impacts on each affected species' critical habitat through 2010…." *Id.* at 934–35. NMFS nonetheless found that critical habitat would not be adversely modified because "habitat conditions would improve during the 2010–2014 period of operations" through "future installation of Removable Spillway Weirs… and other structural improvements…." *See id.* at 935. The Ninth Circuit rejected reliance on these proposals: "we are not persuaded that even a sincere general commitment to future improvements may be included in the proposed action in order to offset its certain immediate negative effects, **absent specific and binding plans**;" rather, there must be a "**clear, definite commitment of resources for future improvements**." *Id.* at 935–36 (emphasis added); *see also Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002). The proposed federal funding initiative relied upon by NMFS in formulating the 2019 SEAK BiOp falls far short of these standards.

a. <u>The mitigation is unfunded and not subject to NMFS's control</u>.

NMFS cannot rely on the mitigation because it is uncertain when, or if, it will receive the necessary funding. Further, even if NMFS obtains the funding, it has no control over those who would actually implement the projects and NMFS therefore cannot rely on implementation.

NMFS concedes that "there is a degree of uncertainty regarding whether Congress will [timely] provide the [mitigation] funding, in whole or in part…." Knutsen Decl. 35. The 2019 SEAK BiOp explains that the mitigation "effects assumed in the analysis… will not take place for at least four to five years into the future as funding is attained, fish from the conservation hatchery programs reach maturity in the oceans and productivity improvements are realized from the habitat mitigation." *Id.* However, there is no deadline for funding or implementation. Instead,

the 2019 SEAK BiOp vaguely suggests that if "funding is not provided in time for actions to take effect during the [10-year] agreement" set in the 2019 Pacific Salmon Treaty, that "**may** constitute a modification" requiring new ESA consultation. *Id.* (emphasis added). Far from the required "clear, definite commitment of resources," it is unclear when, if ever, these projects will funded. *See Nat'l Wildlife Fed'n II*, 524 F.3d at 936; *see also Rumsfeld*, 198 F. Supp. 2d at 1152 (there "must be . . . deadlines or otherwise-enforceable obligations").

Even if funding was available, there is no guarantee that mitigation will be designed or implemented as contemplated by NMFS. NMFS does not intend to implement the projects itself, but instead hopes to disburse grants to parties over whom it has no control—namely, States and Tribes—to implement the hatchery and habitat programs. *See, e.g.*, Knutsen Decl. 35, 265, 279 ("Because the funding . . . would be received by NMFS and administrated through a grant program in the future, we are limited in our ability to fully understand the efficacy or predict the performance of the program . . . ."). Such aspirations do not constitute the required "solid guarantees." *See Nat'l Wildlife Fed'n II*, 524 F.3d at 935; *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 254 F. Supp. 2d 1196, 1213–14 (D. Or. 2003) ("*Nat'l Wildlife Fed'n I*") (NMFS's reliance on mitigation to be implemented by third-parties, States and Tribes, where there was no authority or binding agreements to compel implementation, was impermissible).

b. <u>The mitigation that lacks specific and binding plans</u>.

NMFS's reliance on mitigation is also impermissible because of the lack of specific and binding plans. In addition to generating uncertainty as to whether the mitigation will be implemented, the lack of specific plans prevents NMFS from actually analyzing whether the mitigation will be sufficient to satisfy the "no jeopardy" standard of section 7 of the ESA. *See Rumsfeld*, 198 F. Supp. 2d at 1152 ("Mitigation measures must . . . address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.").

NMFS concedes that "[t]he **specific details** of how the three activities for which funding would be used **have not been developed**…." Knutsen Decl. 35 (emphasis added). Far from

"specific and binding plans," the 2019 SEAK BiOp directs NMFS to come up with a plan: "NMFS shall design the prey increase program using the best available information to provide for the best chance of increasing prey availability . . . from the funding initiative." *Id.* at 357; *Nat'l Wildlife Fed'n II*, 524 F.3d at 935–36; *see also Ctr. for Biological Diversity v. Salazar*, 804 F. Supp. 2d 987, 1004 (D. Ariz. 2011) (A BiOp cannot rely on a "promise—no matter how well-intended—to develop a plan in the future to mitigate the impacts of its proposed action.").

NMFS's proposal to fund new hatchery production that will annually release 20 million Chinook salmon throughout the Pacific Northwest is entirely devoid of specifics. *See* Knutsen Decl. 34–35, 147, 264–65. The only detail available is that it must "increase prey availability by 4-5 percent in areas that are most important to [Southern Residents]." *Id.* at 147; *see also id.* at 34–35. Thus, NMFS knows the outcome needed to support its "no jeopardy" opinion, but not how that outcome will be achieved; e.g., what hatcheries will be used; what Chinook salmon stocks will be used; who will operate the programs; where the fish will be released; the life stages at which fish will be released; the smolt to returning adult ratio; the number of fish needed for broodstock; or when, where, or how many adult salmon will be made available to the Southern Residents. *See, e.g., id.* at 147 (this mitigation "is less well defined and does not lend itself to further specification"); *id.* at 265 ("the details needed to conduct site-specific assessments have not been worked out"). Instead, NMFS optimistically predicts that it will be able "to work collaboratively with the state and tribal co-managers [that operate hatcheries] . . . to develop a program that meets the goal related to increasing prey abundance." *Id.* at 265.

The proposal to fund four Puget Sound conservation hatcheries is slightly more defined in that it identifies three existing hatcheries. *See id.* at 252. However, that is the extent of details. For example, the 2019 SEAK BiOp does not specify how many additional fish will be produced; where the fish would be released; at what life stage fish would be released, the number of adult fish needed for broodstock; or when, where, or how many adult salmon will be made available to the Southern Residents. *See id.* at 252–59. In fact, NMFS cannot even confirm that additional

fish will be produced. *See id.* at 252 (funding will "most likely include increased production").

With respect to the habitat restoration component, NMFS admits that "while a list of potential habitat restoration projects . . . exists, it has not been decided which projects would be funded . . . ." *Id.* at 35; *see also id.* at 252 ("site specific details" for habitat restoration "are not yet available"). Moreover, even the "original project [sic] listed may change." *Id.* at 259. NMFS does not provide any details about what projects will be implemented, where they are located, who will implement them, when they would be implemented, or the extent to which they will supposedly produce additional prey for Southern Residents. *See id.* at 259–64. NMFS cannot rely on a "laundry list of possible mitigation measures," only some of which may be implemented. *See Salazar*, 804 F. Supp. 2d at 1002 (quoting *Rumsfeld*, 198 F. Supp. 2d at 1153).

c. <u>The mitigation requires ESA and NEPA review and approval</u>.

Perhaps most problematic with NMFS's reliance on the undefined mitigation is that those measures still require review and approval under the ESA and NEPA. *See, e.g.*, *Nat'l Wildlife Fed'n I*, 254 F. Supp. 2d at 1208, 1213–16 (NMFS improperly relied on mitigation that had not undergone ESA consultation, including habitat and hatchery measures). NMFS cannot rely on these proposals to offset harvest impacts because, as the Tribes explained in *National Wildlife Federation I*, the mitigation "may never occur, may be substantially modified, or may be found to jeopardize the species upon closer scrutiny during future [ESA] consultation." *Id.* at 1208.

NMFS has long-recognized that hatchery programs harm wild salmonids. *See, e.g.*, *Nat'l Wildlife Fed'n II*, 524 F.3d at 935 ("NMFS explicitly found that continued reliance on the hatchery operation itself threatens [the salmon's] chances of recovery . . . ."). Fish raised in a hatchery environment become less fit to survive and reproduce in the wild through natural selection processes occurring in an unnatural environment. Knutsen Decl. 255. This domestication harms wild populations when the hatchery fish, released *en masse*, reproduce with wild fish and thereby transfer maladapted genes to the wild population. *Id.* Hatchery fish also harm wild fish through competition for resources, including food and spawning sites. *See id.* at

256–57. Nonetheless, "NMFS believes that hatchery intervention is a legitimate and useful tool **to alleviate short-term extinction risk, but otherwise managers should seek to limit interactions between hatchery and natural-origin fish** . . . ." *Id.* at 254 (emphasis added).

NMFS concedes that the hatchery programs proposed as mitigation require ESA consultation: "[o]nce the details are known" for the plan to release 20 million hatchery Chinook salmon annually, "NMFS would complete site-specific [ESA] consultations on the [sic] each production program…." *Id.* at 265; *see also id.* at 252 (funding four Puget Sound Chinook salmon conservation hatcheries will also require "further consultation once the site specific details are fully described"); *id.* at 260 (the habitat restoration proposals may require approval by the United States Army Corps of Engineers or site-specific ESA consultation).

NMFS's consultation on these hatchery programs may determine that they are likely to jeopardize threatened Chinook salmon. *See* 16 U.S.C. § 1536(a)(2). That would require NMFS to prescribe "reasonable and prudent alternatives," such as smaller programs, or, if such alternatives are unavailable, to prevent the programs by withholding take authorization. *See Bennett v. Spear*, 520 U.S. 154, 158, 169–70 (1997). Even if jeopardy is not likely, NMFS will impose conditions to minimize impacts to listed species. *See id.* at 158. NMFS cannot rely on hatchery releases as mitigation because the proposed releases may be significantly modified or rejected when reviewed under the ESA. *See Nat'l Wildlife Fed'n I*, 254 F. Supp. 2d at 1208, 1213–16.[6]

NMFS is also required to comply with NEPA before it commits to authorize or fund the hatchery programs. *See Ramsey v. Kantor*, 96 F.3d 434, 443–44 (9th Cir. 1996) (NMFS "was required by law to comply with the requirements of NEPA *before* issuing the [incidental take] statement." (emphasis in original))[7]; *Alaska v. Andrus*, 591 F.2d 537, 540 (9th Cir. 1979)

[6] NMFS cannot, as it suggests, bifurcate consultation on mitigation by presuming the benefits from hatchery releases, while deferring evaluation of harm. *See* Knutsen Decl. 252; *Nat'l Wildlife Fed'n II*, 524 F.3d at 936 (NMFS improperly relied on hatcheries as mitigation without also considering the "impact of prolonging the [salmon's] hatchery dependence on its eventual prospects for recovery").

[7] NMFS generally authorizes take from hatcheries under a "4(d) Rule"; i.e., a rule issued under section 4(d) of the ESA to apply section 9's take prohibition, which automatically applies to endangered species, to threatened species.

(federally funded projects are subject to NEPA). A "touchstone" of NEPA is proper "selection and discussion of alternatives [to] foster[] informed decision-making…." *California v. Block*, 690 F.2d 753, 767 (9th Cir. 1982). To facilitate consideration of alternatives, NEPA documents must be prepared before the "go-no go" stage and before any irretrievable commitment of resources. *Ctr. for Envtl. Law & Policy v. U.S. Bureau of Reclamation*, 655 F.3d 1000, 1006 (9th Cir. 2011); 40 C.F.R. § 1506.1(a); *see also* 40 C.F.R. § 1501.2 ("at the earliest time possible").

NMFS cannot rely on the hatchery programs as mitigation because it cannot lawfully commit to providing funding or ESA approval before completion of NEPA procedures; such a commitment would unlawfully predetermine the outcome of the NEPA process. *See e.g.*, *Metcalf v. Daley*, 214 F.3d 1135, 1138, 1143–44 (9th Cir. 2000) (NMFS, et al., unlawfully predetermined NEPA by committing to support a whale harvest quota before preparing EIS or EA). Further, NMFS's NEPA process must consider a reasonable range of alternatives, including smaller hatchery releases that will pose less harm to wild salmonids. *See Native Fish Soc'y v. Nat'l Marine Fisheries Serv.*, 992 F. Supp. 2d 1095, 1110 (D. Or. 2014) (NMFS violated NEPA by failing to consider smaller hatchery releases); *Wild Fish Conservancy v. Nat'l Park Serv.*, 8 F. Supp. 3d 1289, 1299–1301 (W.D. Wash. 2014) (same). NMFS therefore cannot now commit to large hatchery releases as mitigation in the 2019 SEAK BiOp. *See* 40 C.F.R. § 1506.1(a)

The need to comply with NEPA and the ESA before implementing the hatchery programs poses enormous uncertainty, as review processes take time and often result in reduced programs. For example, the Conservancy settled a lawsuit in 2003 requiring Washington State to submit plans for Puget Sound hatcheries to NMFS for review. *See* Knutsen Decl. 559–64. NMFS then announced its intent to conduct ESA and NEPA review in 2004 and again in 2011, finally released a draft EIS in 2014, only to withdraw the draft EIS in 2015 with an announcement that it

See 16 U.S.C. §§ 1533(d), 1538(a)(1)(B), (G). NMFS has promulgated a 4(d) Rule that prohibits take of threatened salmonids, subject to exceptions known as the "4(d) Limits." *See* 50 C.F.R. § 223.203(a)–(b). Limits 5 and 6 authorize take from hatchery programs where NMFS has approved a Hatchery and Genetic Management Plan. *See id.* § 223.203(b)(5)–(6). NMFS's approval of such plan is subject to NEPA. *See* Knutsen Decl. 543, 550–51; *Native Fish Soc'y v. Nat'l Marine Fisheries Serv.*, 992 F. Supp. 2d 1095, 1107–09 (D. Or. 2014).

would instead conduct review on a "watershed" basis. *See* 80 Fed. Reg. 15,986 (Mar. 26, 2015); *see also* 81 Fed. Reg. 2,196 (Jan. 15, 2016) (NMFS announced intent to prepare an EIS for Columbia River hatcheries in 2004, completed the EIS ten years later, and issued its final decision in 2016). Any prediction that NMFS will quickly approve hatchery programs not only unlawfully predetermines the NEPA process, but is also not supported by the agency's record.

d. Conclusion on NMFS's unlawful reliance on mitigation.

The mitigation is unfunded, to be implemented by entities over whom NMFS has no control, lacks any specifics, and requires approvals that may result in the projects being denied or substantially altered. NMFS cannot rely on such nonexistent mitigation to satisfy its duty to ensure that its actions do not jeopardize the Southern Residents. *See Nat'l Wildlife Fed'n II*, 524 F.3d at 935–36. The Conservancy is likely to succeed on its challenge to the 2019 SEAK BiOp.

2. The ITS fails to adequately limit take of Southern Residents.

Another significant deficiency is that the 2019 SEAK BiOp's ITS lacks a lawful cap on the extent of harm that can be inflicted on the Southern Residents before NMFS must reinitiate consultation. Instead, the ITS authorizes whatever amount of take of Southern Residents happens to result from harvests under the 2019 Pacific Salmon Treaty, regardless of whether that take far exceeds what NMFS assumed when preparing the 2019 SEAK BiOp. That violates the ESA.

An ITS must "set forth a 'trigger' that, when reached, results in an unacceptable level of incidental take, invalidating the safe harbor provision, and requiring the parties to re-initiate consultation." *Ariz. Cattle Growers' Ass'n v. U.S. Fish & Wildlife*, 273 F.3d 1229, 1249 (9th Cir. 2001); 50 C.F.R. § 402.16(a)(1). Preferably, the ITS specifies a numerical limit for the "trigger," but if that is not practical, the ITS may specify a surrogate that performs the same functions of a numerical limitation—namely, to monitor harm and determine when the predicted amount of take has been exceeded. *Or. Nat. Res. Council v. Allen*, 476 F.3d 1031, 1038 (9th Cir. 2007); *Wild Fish Conservancy*, 628 F.3d at 531. Surrogate triggers are rejected if they fail to perform this function. *E.g.*, *Wild Fish Conservancy*, 628 F.3d at 531–32; *Allen*, 476 F.3d at 1038–41.

In *Allen*, the Ninth Circuit rejected an ITS for a timber harvest because the level of take authorized was coextensive with the project. 476 F.3d at 1038–41. The ITS authorized the take of "all spotted owls associated with the removal . . . of 22,227 acres of suitable . . . habitat," which was the amount of removal for the entire project; the ITS thereby allowed whatever amount of take resulted from the harvest project. *Id.* at 1034, 1039. "Even if the actual number of takings of spotted owls that occurred during the project was considerably higher than anticipated, the Incidental Take Statement would not permit the FWS to halt the project and reinitiate consultation." *Id.* at 1039. This ITS was "so indeterminate" that it rendered the monitoring and reinitiation provisions meaningless and eliminated the trigger function. *Id.* at 1041.

The 2019 SEAK BiOp's ITS suffers from that same flaw. Rather than specify a numeric take limit for Southern Residents, the ITS uses salmon catch as a surrogate. Knutsen Decl. 351. Specifically, it authorizes whatever take of Southern Residents results from the fisheries allowed under the 2019 Pacific Salmon Treaty. *Id.* ("The extent of take for [Southern Residents] is . . . described by the provisions of . . . [the 2019 Pacific Salmon Treaty] that define annual catch or total mortality limits on Chinook salmon . . . ."). Just like in *Allen*, this surrogate is "coextensive with the project's own scope." *See* 476 F.3d at 1039. So long as harvests do not exceed the quotas set under the 2019 Pacific Salmon Treaty, there is no obligation to halt harvests and reinitiate ESA consultation even if considerably more take of Southern Residents occurs than NMFS predicted in formulating its "no jeopardy" opinion.

The reason such a surrogate is inconsistent with the ESA is evident here. As an example, the harm to Southern Residents resulting from the allowable harvest will vary from year to year. Knutsen Decl. 271–72. During years with low salmon abundance, the proportion of reduction in prey availability from the harvests increases, meaning the fisheries have a greater adverse impact on Southern Residents. *See id.* at 271–73. In reaching its "no jeopardy" opinion, NMFS assumed that salmon abundance trends from 1999 to 2014 would persist during the fisheries set by the 2019 Pacific Salmon Treaty. *Id.* at 272–73; *see also id.* at 338–39 (NMFS "do[es] not anticipate

that the highest impacts of fisheries couple with multiple consecutive low abundance years will occur in the first few years of the proposed action…"). If that assumption proves inaccurate, due to warming ocean conditions or other factors, the actual take of Southern Residents could be significantly higher than expected. Yet, even if the fisheries drive the Southern Residents to the brink of extinction, there is no obligation to halt harvests and reinitiate consultation so long as harvests do not exceed the limits of the 2019 Pacific Salmon Treaty.

The Conservancy is likely to succeed on its challenge to the 2019 SEAK BiOp because the ITS fails to adequately trigger re-initiation of consultation if impacts to Southern Residents from the fisheries are greater than expected. *See Allen*, 476 F.3d at 1041.

B. The Conservancy will Succeed on its Substantive ESA section 7 Claim.

Section 7 of the ESA imposes a substantive duty on NMFS to ensure that any action it authorizes is not likely to jeopardize species or destroy their critical habitat. *See* 16 U.S.C. § 1536(a)(2). The Conservancy is likely to succeed on its claim that NMFS is in violation of that obligation because the agency is relying on the 2019 SEAK BiOp, which contains the legal flaws discussed above, to support its continued authorization of salmon fisheries in the federal waters of Southeast Alaska. *See Wild Fish Conservancy*, 628 F.3d 532.

C. The Conservancy will Succeed on its NEPA Claim.

NMFS violated NEPA by issuing the ITS without preparing any NEPA documents.

The Ninth Circuit held in 1996 that NMFS violated NEPA by issuing an ITS authorizing take associated with salmon fisheries without first preparing an EIS. *Ramsey*, 96 F.3d at 438, 443–44 (EIS needed for ITS issued on the Columbia River Fish Management Plan, used by Oregon and Washington to set fishing regulations). NMFS responded with a programmatic EIS in 2003 that evaluated, *inter alia*, the effects of its ongoing delegation of authority to Alaska to manage fisheries and the effects of NMFS's issuance of BiOp with an ITS for fisheries under the 1999 Pacific Salmon Treaty. Knutsen Decl. 595, 599–600. Inexplicably, NMFS disregarded the lessons of *Ramsey* and issued the 2019 SEAK BiOp and its ITS without any NEPA process.

As was the case in *Ramsey*, the ITS issued with the 2019 SEAK BiOp acts as a federal permit allowing state implementation of salmon fisheries that will take ESA-listed species. *See San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 643–44 (9th Cir. 2014). This new ITS authorizes fisheries in the federal waters of Southeast Alaska through 2028 under the regimes delineated in the 2019 Pacific Salmon Treaty. *See* Knutsen Decl. 26–27, 36, 350. Moreover, the ITS commits NMFS to a massive new federal funding initiative to offset harvest impacts. *Id.* at 358. NMFS violated NEPA by issuing this new ITS, thereby limiting alternatives, without first completing NEPA processes. *Ramsey*, 96 F.3d at 443–44; 40 C.F.R. § 1506.1(a).[8, 9]

The Conservancy is likely to succeed on its claim that NMFS violated NEPA by issuing the ITS without first completing any NEPA process. *See Ramsey*, 96 F.3d at 443–44.

D. <u>The Requested Injunction Is Needed to Prevent Likely Irreparable Injury</u>.

To remedy the specific harm at issue, the Conservancy requests an order staying NMFS's take authorization and delegation of authority to Alaska for commercial salmon fisheries in the Exclusive Economic Zone of Southeast Alaska and directing NMFS to take any additional steps needed to halt such fisheries before commencement of the fishing season on July 1. *See Park Vill. Apartment Tenants Ass'n v. Mortimer Howard Trust*, 636 F.3d 1150, 1160 (9th Cir. 2011). Irreparable injury is likely absent such relief. *See Nat'l Wildlife Fed'n III*, 886 F.3d at 818.

Courts should evaluate irreparable injury with reference to the statute being enforced. *Id.* "The 'plain intent' of Congress in enacting the ESA was 'to halt and reverse the trend toward

[8] NMFS's prior NEPA efforts, absent supplementation, do not satisfy its obligations here because, *inter alia*, those efforts did not address take authorized by the new ITS, impacts to Southern Residents, or NMFS's purported commitment to the mitigation funding initiative. *See* 40 C.F.R. § 1502.9(c)(1).

[9] Further, a full EIS is required because, at a minimum, there are substantial questions as to whether the actions *may* have significant effects. *See, e.g.*, *Ocean Advocates*, 402 F.3d at 864–865. "This is a low standard" that can require an EIS even where the agency believes that, on balance, effects will be beneficial. *Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549, 562 (9th Cir. 2006); 40 C.F.R. § 1508.27(b)(1); *Envtl. Prot. Info. Ctr. v. Blackwell*, 389 F. Supp. 2d 1174, 1197 (N.D. Cal. 2004). An EIS is required here because of the substantial adverse effects to ESA-listed species and because NMFS's proposal to mitigate harm from the fisheries using hatcheries, which themselves harm wild salmonids, is extremely controversial. *See, e.g.*, Knutsen Decl. 254, 265, 281; 40 C.F.R. § 1508.27(b)(4)–(5), (9); *Native Fish Soc'y*, 992 F. Supp. 2d at 1107–09 (FONSI for hatchery programs was insufficient).

species extinction, whatever the cost.'" *Id.* (citation omitted). This is achieved through "incremental steps" that include protecting individual members of species; "[h]arm to those members is irreparable because 'once a member of an endangered species has been injured, the task of preserving that species becomes all the more difficult.'" *Id.* (citation omitted). An extinction-level threat—though present here—is not required for an injunction. *Id.* at 819; *see Cottonwood*, 789 F.3d at 1091 ("In light of the stated purposes of the ESA . . . , establishing irreparable injury should not be an onerous task for plaintiffs."). Further, the activity to be enjoined need not be the exclusive cause of harm, and a showing that the requested injunction would forestall the irreparable injury is sufficient. *Nat'l Wildlife Fed'n III*, 886 F.3d at 819.

Irreparable injury is likely if the unlawfully authorized harvests go forward, further depriving starving Southern Residents of their prey based on NMFS's ill-advised gamble that its mitigation ideas may someday materialize. NMFS identifies the Southern Resident as "a species whose extinction is almost certain in the immediate future because of rapid population decline or habitat destruction." Decl. of Deborah Giles, Ph.D. ("Giles Decl.") ¶ 6. The species has shrunk from 88 whales when listed in 2005 to only 72 whales today. *Id.*; *see also* Knutsen Decl. 242. The decline in population size is due to a steep decline in pregnancies and live births by pregnant whales. Giles Decl. ¶ 7; *see also* Knutsen Decl. 108–110, 266. This reduced fecundity is primarily attributable to a lack of sufficient Chinook salmon available as prey. Giles Decl. ¶¶ 8–9; Decl. of Robert Lacy, Ph.D. ("Lacy Decl.") ¶ 6.b; Knutsen Decl. 108, 115, 266.

Dr. Lacy, cited in the 2019 SEAK BiOp, finds that prey available to Southern Residents must increase by 10% over past levels merely to sustain the current population size. Lacy Decl. ¶ 21; Knutsen Decl. 110. To achieve NMFS's recovery goal of a 2.3% growth rate, a prey increase of 35% is needed. Lacy Decl. ¶ 22; Knutsen Decl. 110. Under the harvests authorized by NMFS in the 2019 SEAK BiOp, there will be an estimated 0.5% increase in prey availability relative to past levels, thereby ensuring the Southern Resident will rapidly continue its decline toward extinction. Lacy Decl. ¶¶ 26, 32 (black line on the graph shows population decline predicted

under harvests authorized by 2019 SEAK BiOp). Indeed, NMFS concedes that the approved harvest levels are inadequate to conserve the Southern Residents and are likely to adversely affect the species' critical habitat absent the non-existent mitigation. *See* Knutsen Decl. 33–34, 339. The continued reduction in population size and associated increase in extinction risk that will result from the authorized harvests constitute irreparably injury under the ESA, requiring an injunction. *See Nat'l Wildlife Fed'n III*, 886 F.3d at 818–19; *see also Defs. of Wildlife v. Bernal*, 204 F.3d 920, 925 (9th Cir. 1999). The requested relief is needed to, at a minimum, "forestall" the loss of this species. *See Nat'l Wildlife Fed'n III*, 886 F.3d at 819; Lacy Decl. ¶ 33.e.

"In the NEPA context, irreparable injury flows from the failure to evaluate the environmental impact of a major federal action." *High Sierra Hikers' Ass'n v. Blackwell*, 390 F.3d 630, 642 (9th Cir. 2004). "The NEPA duty is more than a technicality; it is an extremely important statutory requirement to serve the public and the agency *before* major federal actions occur." *Found. on Econ. Trends v. Heckler*, 756 F.2d 143, 157 (D.C. Cir. 1985). Here, NMFS authorized salmon fisheries to the full extent allowed by the 2019 Pacific Salmon Treaty, and, instead of reducing harvest to protect imperiled species, NMFS committed to massive new federally-funded hatchery programs that would themselves harm threatened salmon, were they ever funded and implemented. NMFS made these decisions without the consideration of alternatives and public participation opportunities required under NEPA. Allowing the fisheries to go forward before NEPA compliance constitutes irreparable injury to the Conservancy and its interests in imperiled species. *See, e.g.*, *League of Wilderness Defs./Blue Mountains Biodiversity Project v. Connaughton*, 752 F.3d 755, 764 (9th Cir. 2014) ("Environmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable.") (quoting *Lands Council v. McNair*, 537 F.3d 981, 1004 (9th Cir. 2008) and *Amoco Prod. Co. v. Vill. of Gambell*, 480 U.S. 531, 545 (1987)).

E. <u>The Equities Favor an Injunction</u>.

The balance of hardships and public interests always favor an injunction for ESA

violations. *Nat'l Wildlife Fed'n III*, 886 F.3d at 817. For NEPA, "[i]f environmental injury is sufficiently likely, the balance of harms will usually favor . . . an injunction . . . ." *Blackwell*, 390 F.3d at 642. The Conservancy recognizes the hardship on the commercial fishing industry from the injunction. However, the harm posed by the unlawfully approved harvest is substantial. The Ninth Circuit has repeatedly "held that the public interest in preserving nature and avoiding irreparable environmental injury outweighs economic concerns in cases where plaintiffs were likely to succeed on the merits . . . ." *McNair*, 537 F.3d at 1005. An injunction is warranted because of "the public interest in careful consideration of environmental impacts before major federal projects go forward…." *Cottrell*, 632 F.3d at 1138. "[S]uspending such projects until that consideration occurs 'comports with the public interest.'" *Id*.; *see also Sierra Club v. Bosworth*, 510 F.3d 1016, 1033 (9th Cir. 2007) ("The balance of equities and the public interest favor issuance of an injunction because allowing a potentially environmentally damaging program to proceed without an adequate record of decision runs contrary to the mandate of NEPA.").

F. No Bond (or a Nominal Bond) Is Appropriate.

The Conservancy requests that the bond requirement be waived, which is within the Court's discretion "where requiring security would effectively deny access to judicial review." *See Cal. ex rel. Van De Kamp v. Tahoe Reg'l Planning Agency*, 766 F.2d 1319, 1325 (9th Cir. 1985); *see Friends of the Earth v. Brinegar*, 518 F.2d 322, 323 (9th Cir. 1975). It is "well established" that, in cases like this, no or nominal bond is appropriate because the Conservancy is a small organization seeking to enforce public rights, has no financial stake in the litigation, and a substantial bond would effectively deny access to judicial review and have a chilling effect on future efforts to vindicate public interests. *See Cent. Or. Landwatch v. Connaughton*, 905 F. Supp. 2d 1192, 1198 (D. Or. 2012); *Van de Kamp*, 766 F.2d at 1325–26; Beardslee Decl. ¶¶ 3–9.

VII. CONCLUSION.

Wherefore, the Conservancy respectfully requests that the Court enter an order establishing the preliminary injunctive relief requested herein.

Respectfully submitted this 16th day of April, 2020.

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CERTIFICATE OF SERVICE

I hereby certify that on April 16, 2020, I electronically filed the foregoing with the Clerk of the Court using the CM/ECF System which will send notification of such filing to the attorneys of record.

s/ Brian A. Knutsen
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HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY NORTHWEST, a Washington non-profit corporation,

Plaintiff,

v.

BARRY THOM, in his official capacity as Regional Administrator of the National Marine Fisheries Service, et al.,

Defendants.

Case No. 2:20-cv-00417-MLP

DECLARATION OF DR. DEBORAH GILES, Ph.D.

I, Deborah Giles, state and declare as follows;

1. I have been retained by Plaintiff Wild Fish Conservancy, by and through counsel, to provide my expert evaluation and opinion regarding the Southern Resident Killer Whale population. This declaration provides my opinions and conclusions, including scientific information regarding Southern Resident Killer Whales and their physiological health. I have actual knowledge of the matters stated herein and could and would so testify if called as a witness.

2. I received my PhD from the University of California Davis in 2014. My master's thesis and PhD dissertation both focused on Southern Resident Killer Whales. I was formerly the research director at the Center for Whale Research. I am currently a resident scientist and lecturer

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at the University of Washington's Friday Harbor Labs, where I teach Marine Mammals of the Salish Sea and Marine Biology, and I am the science and research director for the nonprofit Wild Orca.

3. My professional background, experience, and publications are detailed in my curriculum vitae, a true and accurate copy which is attached as Exhibit A to this declaration.

4. Since 2009, I have been the vessel captain for Dr. Samuel Wasser's project – at University of Washington's Center for Conservation Biology – utilizing a scat detection dog to locate floating killer whale scat to monitor the physiological health of Southern Resident killer whales. Southern Resident killer whale feces can be genotyped to determine which whale the fecal sample came from and they can be examined for stress, nutrition and pregnancy hormones, toxicants, microbiome, parasites, bacteria and microplastics found in Southern Resident Killer Whales. Analysis of fecal samples confirms that Chinook salmon are the dominant fish species eaten by the Southern Resident killer whales.

5. Since 2010, I have worked with National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) on a project deploying acoustic suction-cup recording tags on killer whales to measure received noise levels by whales. I am the killer whale scientific adviser for the Orca Salmon Alliance, a program advisor for Killer Whale Tales, a co-coordinator for the San Juan Island Naturalist Program, and I am on the Steering Committee for the Salish Sea Ecosystem Advocates (SalishSEA). In 2018 and 2019, I served on the prey and vessel working groups for Washington's Governor Jay Inslee's Southern Resident Killer Whale Recovery Task Force and was an invited panelist for Governor Inslee's Lower Snake River Dams Stakeholder Engagement workgroup. On behalf of Wild Orca I translate science and engage with the public and policy makers with the aim of preventing the extinction of the critically

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endangered Southern Resident killer whales.

6. NMFS listed the Southern Resident Killer Whales as endangered under the Endangered Species Act (ESA) in 2005 when the population numbered 88 whales. Despite almost fifteen years of federal protection, the population has continued to decline from a high census count in 1995 of 98 whales to a near historic low of only 72 whales today. NMFS has recognized the Southern Resident Killer Whales as one of eight marine species most at risk of extinction, and considers them a recovery priority number one, which is defined as "a species whose extinction is almost certain in the immediate future because of a rapid population decline or habitat destruction." By NMFS' own assessment, the population must increase by an average 2.3 percent per year for 28 years in order to be removed from the Endangered Species list, which is NMFS' goal.

7. As the independent governmental agency Marine Mammal Commission explained, a primary cause of this well documented population decline has been a steep decline in the number of pregnancies and a lack of live births in those whales that do become pregnant. From 1984 to 2011, there were between two to six births in the population in most years, an average of 3.85 per year. From 2012 to 2014 there were just four births in total, an average of 1.33 per year. In 2015 seven calves were documented, which was the second largest single-year number of births. Unfortunately, no calves were born in 2017, and the one calf born in late September of 2018 died shortly after its birth. Two calves were born in 2019 and were still alive as of January 2020, meaning the average number of annual births from 2017 to 2019 was 1.00. Cumulatively, from 2012 to through 2019 there were 14 births, an average of 2.00 per year, seven of which have survived to date.

8. Like the other fish-eating killer whale populations in the North Pacific, the Southern Residents are dietary specialists on fish, and particularly Chinook salmon. This diet must support

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daily life activities (*e.g.*, foraging, traveling, socializing, resting), in addition to gestation, lactation, and growth. To maintain this high energy balance, Southern Resident Killer Whales preferentially consume older Chinook salmon (>3 years). Chinooks' large size, relatively high fat and energy content, and year-round occurrence from multiple sources within the Southern Resident Killer Whales' range contributes to this preference—and the preference persists despite a steep decline in the abundance of Chinook salmon. According to the Environmental Protection Agency, "steep declines in Chinook salmon is associated with three main factors: habitat change, harvest rates and hatchery influence," and not insignificantly, damming of rivers below historical spawning sites.

9. In 2017, I co-authored an article titled "Population growth is limited by nutritional impacts on pregnancy success in endangered Southern Resident killer whales" in which we discussed the results of our research. As we explained, Southern Resident population growth is constrained by low offspring production for the number of reproductive females in the population. Lack of prey, increased toxins and vessel disturbance have been listed as potential causes of the whale's decline but partitioning these pressures has been difficult. We validated and applied temporal measures of progesterone and testosterone metabolites to assess occurrence, stage and health of pregnancy from genotyped killer whale feces collected using detection dogs. Thyroid and glucocorticoid hormone metabolites were measured from these same samples to assess physiological stress. These methods enabled us to assess pregnancy occurrence and failure as well as how pregnancy success was temporally impacted by nutritional and other stressors, between 2008 and 2014. Southern Residents have an 18 month gestation period and their nutritional health depends on the relative timing of multiple, seasonal fish runs (e.g., spring Columbia River Chinook and summer Fraser River Chinook), as well as food availability in between those periods, each of which vary markedly between years. The increasingly common occurrence of births outside the

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typical winter calving period may also be an indication of the increased unpredictability of diminishing fish runs along with the corresponding high rate of late reproductive loss in Southern Residents, including more costly late spontaneous abortions. Our study concluded that up to 69% of all detectable pregnancies were unsuccessful; of these, up to 33% failed relatively late in gestation or immediately post-partum, when the cost is especially high. Low availability of Chinook salmon appears to be an important stressor among these fish-eating whales as well as a significant cause of late pregnancy failure, including unobserved perinatal loss. We concluded the primary solution to drive population growth is promoting Chinook salmon recovery. A true and correct copy of this article is attached as Exhibit B to my declaration.

10. The decline in available prey has also led to substantial behavioral changes. The Southern Residents are spending less and less time in the formerly prey-rich Salish Sea area, their designated summer core critical habitat, and are being forced to forage further afield, with limited success. The following graphic shows the correlation between the decline in available Chinook salmon and the days the Southern Residents spent in the Salish Sea during traditional summer hunting periods.

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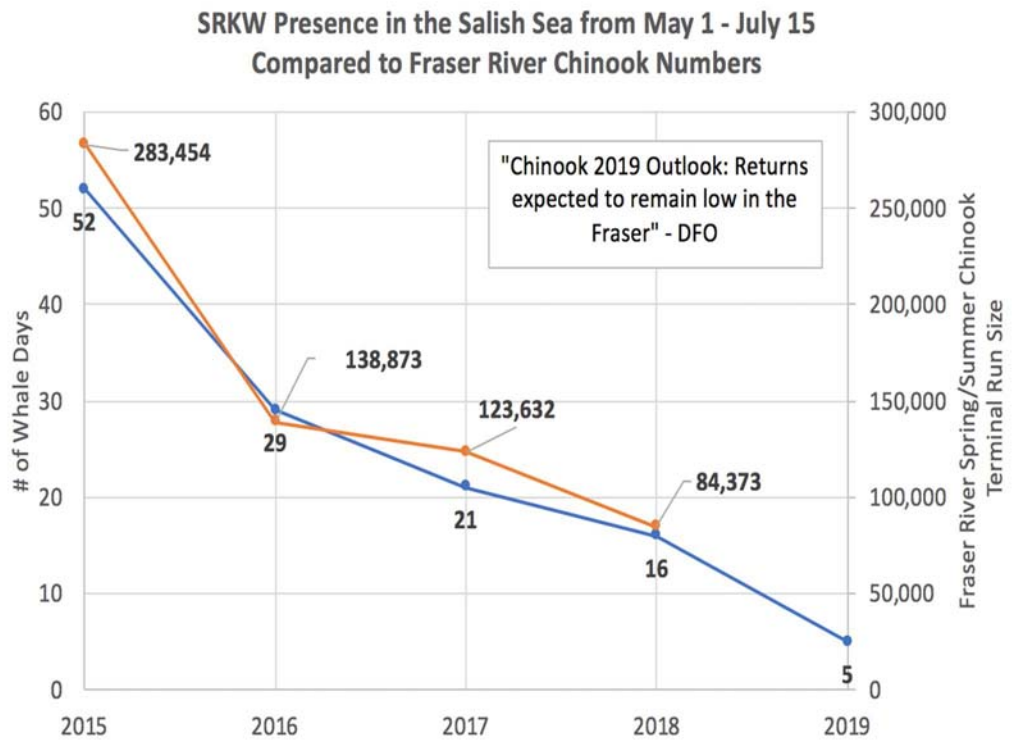

Southern Resident Killer Whale presence data from Pacific Whale Watch Association and Orca Network reports. Combined spring/summer Chinook salmon terminal run size for the indicator stocks on the Fraser River from the 2019 Pacific Salmon Commission Joint Chinook Technical Committee Report. Data compiled and graph generated by the Orca Behavior Institute.

11. Our research has determined that each Southern Resident needs around 20 full-bodied Chinook salmon per day to survive. In other words, just to maintain the existing population, over 525,000 fully mature Chinook salmon are needed annually for the Southern Residents to survive. To date, fisheries management decisions have not been made with the recovery of the Southern Resident killer whales in mind, fish runs are historically low, and all evidence—including increased death rates, low fecundity, and the physical appearance of the Southern Resident Killer Whales (see photo below)—indicate that there is a substantial lack of sufficient Chinook abundance available as prey to the Southern Resident Killer Whales.

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Aerial photographs of Southern Resident "J17' over a 3 and a half year period depicting substantial weight loss and onset of "peanut head," indicating extreme nutritional distress. Images obtained by Holly Fearnbach (SR3) and John Durban (NOAA Fisheries' Southwest Fisheries Science Center) using a remotely piloted drone under NMFS Research Permit #19091 (available at https://crosscut.com/2019/05/orca-j17-starving-death-isnt-inevitable).

12. Currently, up to 97% of Chinook caught in Alaska are actually salmon that originate in BC Canada, Washington, Oregon and Idaho rivers. Under the quotas set by the Pacific Salmon Treaty and approved by NMFS, the amount of Chinook salmon available as prey to the Southern Residents will be further reduced. Given that the Southern Residents are already substantially nutritionally deprived, this additional reduction will further decrease the possibility that this population can successfully reproduce in sufficient numbers to maintain, let alone grow, the population. It is essentially impossible to meet NMFS' recovery goal of an average growth rate of 2.3% in the Southern Resident Killer Whale population without increasing the abundance of Chinook available to the Southern Residents as prey.

13. I am aware that some mitigation measures, such as increased hatchery production, habitat restoration, and developing fish passage structures at dams, may over time help to increase Chinook population available to the Southern Residents. However, these mitigation measures,

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even if implemented immediately, will have no measurable effect for at least three years, and likely much longer. In the interim, the Southern Resident killer whale population may decline to a point where recovery is impossible due to the loss of breeding age males and females and low or no calf recruitment into the population. Moreover, the vagueness of the proposed mitigation measures makes it impossible to assess what, if any, positive impact they would have on the abundance of Chinook available to the Southern Resident killer whales.

14. There is no question the Southern Resident killer whales, under existing conditions, are not getting enough food to eat throughout their entire range. Without an increase in the abundance of Chinook, not only will NFMS' population growth goal not be met, but the population may go extinct entirely.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and accurate.

Executed this 16th day of April, 2020.

Deborah A. Giles, Ph.D.

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EXHIBIT A

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STATEMENT OF PERSONAL INTEREST

As a killer whale biologist based on San Juan Island since 2005, I apply my scientific expertise, educational training, and diverse community outreach to elevate awareness of the threats facing the Salish Sea Ecosystem. I do this by furthering partnerships with county, state and federal agencies, as well as non-governmental organizations and universities to ensure they have the most up-to-date information to support the recovery of our endangered salmon, whales and the Salish Sea Ecosystem.

EDUCATION

University of California, Davis

- 2014 Ph.D. Geography, Biogeography, Conservation Biology
- 2007 M.A. Geography, Conservation Biology
- 2004 B.A. Philosophy, minor in Nature and Culture

COMMUNITY ENGAGEMENT & OUTREACH ACTIVITIES / TRANSLATIONAL SCIENCE

- **Washington State Governor Inslee appointee to the Prey and Vessel Working Groups supporting the Southern Resident Killer Whale Recovery Task Force.** Worked with other invited members of the legislature, Government of Canada and representatives from tribal, federal, local and other state governments, the private and non-profit sectors using to best available science to identify, research and analyze potential actions and formulate recommendations for Task Force consideration.
- **Invited participant on Governor Inslee's Lower Snake River Dams Stakeholder Engagement Process.** Participated in three panel discussion workshops around Washington state, engaged with the public and other invited panel members to better understand different stakeholder opinions related to the removal of the lower Snake river dams.
- **Co-organizer and sponsor of ongoing Southern Resident killer whale CALF (Community Action – Look Forward) workshop series**. The fifth and most recent in person workshop was held in November 2018 and featured topics and discussion on how to apply lessons learned from the Yellowstone ecosystem to the Salish Sea Ecosystem, the complex issues involving the Pacific Salmon Treaty, federal law and state management of fisheries and how individuals can be involved in recovery efforts for the Southern Resident fish-eating whales and the Chinook salmon they rely on.
- **Coordinator for Center for Whale Research's "Research – Action – Recovery" Symposium and Fundraiser Auction**, attended by 200+ local and off-island killer whale advocates. Discussion topics included an update on SRKW demographics, current and future studies, threats preventing the orcas from recovering, and the importance of policy and advocacy to help the endangered whales.
- **Science Advisor for the Orca Salmon Alliance (OSA)** comprised of international, national, regional, and local non-profit organizations, researchers, and community action groups working to educate the public about the threats facing the Southern Resident orcas the salmon species they rely on and to act to eliminate those threats.
- **Coordinator for OSA sponsored event "Intertwined Fates: The Orca-Salmon Connection" at the Seattle Aquarium October 2015**. Keynote speaker Carl Safina.
    - On new research confirming the important connection between SRKWs Chinook.

- That the prospects for SRKW survival dims without significant restoration of Chinook runs across SRKW range including the Columbia, Klamath, and Sacramento Rivers in the U.S. and the Fraser River in Canada.

- **Established San Juan Island Naturalist Program** – a land-based naturalist led whale watching and natural history program conducted at the Land Bank's Westside Preserve. A joint program with San Juan Island Land Bank, Salish Sea Ecosystem Advocates, Orca Network, and Whale Scout.
- **Science Advisor - Killer Whale Tales**; **Science Education** – assist in conducting hands-on education modules at Lime Kiln State Park with all 4th grade classes from the Bellingham School District (May-June 2015-2017).

PROFESSIONAL EXPERIENCE

Research Vessel Captain & Local Project Lead: Center for Conservation Biology, University of Washington, 2009-Present
Research: Physiological monitoring of Southern Resident Killer Whales (*Orcinus orca)*

- Captain research vessel for scat detection dog to locate and collect killer whale fecal samples used to assess stress and nutrition hormone levels and toxicant loads.
- Train and handle conservation scent detection canines used to locate floating whale feces
- Conduct killer whale behavioral research.
- Responsible for crew safety training and vessel maintenance.

Wild Orca – Science and Research Director, May 2018 – present.

- Develop and facilitate research projects focused on Southern Resident killer whales. Organize and participate in education and outreach opportunities to engage the public in salmon and killer whale conservation efforts. Conduct interviews with media.

Orca Network – Scientific Advisor, Nov. 2015 – present.

- Provide scientific interpretation and consultation and present the latest findings at research workshops and symposiums. Engage with the public at community events.

San Juan Island Naturalist Program (SJINP) – Senior Coordinator, May 2015 – present

- Facilitate annual memorandum of understanding between partners, San Juan County Land Bank, Orca Network, Whale Scout, with program support from additional non-profit organizations.
- Train seasonal coordinator, certified naturalists, and multiple volunteers on the natural history of the Salish Sea and basic biology of marine mammals. Train all on data collection protocols.
- Ensure data collected by SJINP is accurately entered into database
- Oversee annual summary statistics repot to San Juan County Land Bank

Center for Whale Research (CWR) – Research Director & Projects Manager, Nov. 2015 – Oct. 2017

- Collaborated with state and federal partners, NGOs and whale and salmon advocacy organizations to protect and recover the whales.
- Procured and administered grants related to the health of the Southern Resident killer whales.
- Developed grant proposals to undertake additional research on acoustics and behavior of cetaceans in the Salish Sea, along the Pacific Coast to Monterey, California, in Alaska, and Hawaii.
- Managed staff, accounting, vessel maintenance scheduling, and drove research vessels as needed.
- Presented data and gave lectures at local, state, federal and NGO sponsored workshops
- Served as primary media contact interpreting latest scientific research and as the "voice" for whales, conducted numerous interviews for print, digital and video, authored press releases.
- Facilitated annual photo ID and demography on endangered Southern Resident killer whales.

Graduate Researcher: Master's thesis and PhD dissertation research**,** 2006-2013

- Wrote research grant proposal and successfully completed contract obligations including administration of $89,730.00 budget.
- Procured U.S. scientific research permits under the Endangered Species Act/Marine Mammal Protection Act and Canadian research permits under the Marine Mammal/Species at Risk Act.
- Assessed vessel compliance with guidelines and laws governing boating around marine mammals.
- Collected location and attribute data on killer whale behavior, and vessel location, density and distance from whales to assess change in killer whale behavior in the presence of vessels.

Research Scientist: (NOAA/NMFS) National Oceanic and Atmospheric, 2010-2014 and 2018-2020
Administration/National Marine Fisheries Service Research

- Utilized specialized equipment to capture remote whale and vessel location data and attribute data to be used in conjunction with Cascadia Research Collective and the Northwest Fisheries Science Center to assess underwater acoustics recorded by a suction-cup tag attached to the focal killer whales. Future peer reviewed publications stemming from the project will also examine killer whale diving behavior, movement patterns and foraging ecology.

Research Assistant: Cascadia Research Collective, 2005-2010
Research: Focal Behavioral Observations of Fish-Eating Killer Whales: Improving Our Understanding of Foraging Behavior and Prey Selection.

- Assisted with spotting, identifying, and tracking whales.
- Retrieved field samples from nets, incl. fish scales and prey tissue, processed samples for analysis.

Research Assistant: The Whale Museum's Soundwatch Boater Education Program, 2005-2008

- Captained vessel conducting patrols to educate boaters on best practices around marine wildlife.
- Collected data on vessels quantities and activities around whales, including commercial and private vessel compliance with recognized guidelines and laws on best boating practices.

Research Assistant: The Whale Museum's Marine Mammal Stranding Network, 2005-2014

- Responded to alert calls and assisted with assessing condition of potentially stranded marine mammals.
- Collected remains for necropsy at University of Washington Friday Harbor Labs.

Research Assistant: The Northeast Minke Whale Project, 2005-2007

- Participated in on-the-water surveys for minke whales in the Northeast Pacific.

Research Scientist: (NOAA/NMFS) National Oceanic and Atmospheric Administration/National, 2007
Marine Fisheries Service Research Cruise – Southern Resident Killer Whale Winter Range Tracking.

- Deployed, retrieved and monitored acoustic recording equipment designed to document marine mammal vocalizations.
- Operated hydraulic arm to deploy and recover CTD (conductivity, temperature, depth) equipment.
- Processed water samples for salinity, nutrients, and toxins. Conducted and processed samples from plankton tows.
- Utilized high-powered military binoculars to locate marine mammals, recorded sightings in customized computer database.

Research Assistant: University of Washington, 2005-2006
Research: Effects of Vessels on Behavior of Southern Resident Killer Whales.

- Operated computer in team effort with theodolite operator, assisted with spotting, identifying, and tracking individual killer whales from land-based field sites.

Biological Science Technician, GS-404-05: NOAA/National Marine Fisheries Service/NWFSC, 2006
Research: Behavior of Southern Resident Killer Whales in the Presence of Vessels in San Juan Islands

- Collected vessel density and attribute data using a handheld Palm Pilot computer.
- Located and identified individual killer whales, monitored whale movements, and identified group social behaviors.

Research Assistant: Cascadia Research Collective, 2005
Research: Trends in Contaminants in Puget Sound harbor seals

- Recorded field data, photographed deceased harbor seal pups, bagged and labeled biopsy specimens including blubber and liver tissue for later lab analysis of toxicity levels.

SPECIAL TRAINING

- Experience with GIS, database management and mapping
- 16 years' experience operating vessels around all marine mammals in the Salish Sea. At ease on large and small research vessels regardless of weather conditions. Motorboat Operator Certified.
- Certified in Standard first aid, Adult CPR/AED, Infant and Child CPR.
- Thoroughly trained in Global Positioning Systems (GPS) hardware and software technology, and in the use of commonly utilized field equipment including total stations, laser rangefinders, binoculars, digital compasses, and various data collectors including: Pocket PCs, Palm Pilots.
- Extensive experience in marine mammal research such as identifying, collecting and recording data on individual Southern Resident killer whales, minke, humpback and gray whales, harbor seals, harbor and Dall's porpoises.
- Proficient in acoustic tag insertion in salmon smolt.
- Skilled in recording vessel quantities and activities around marine mammals & marine protected areas.

GRANTS AND AWARDS

- NOAA/NMFS Research Contract to record whale and vessel location in conjunction with Cascadia Research Collective examining diving behavior, foraging ecology and movements of killer whales. 2010-2014
- Geosystems Award, California Geographical Society Annual Meeting's Top Award. 2012
- Society of Marine Mammalogy, Student Travel Award, for Biennial Conference on the Biology of Marine Mammals, Tampa, FL. 2011
- NOAA/NMFS Research Contract to study vessel compliance with boating regulations 2009
- NOAA/NMFS Research Contract to study effects of vessels on killer whale behavior 2007-2009
- Office of Graduate Studies, Travel Award, presentation at AAG annual conference 2007
- Recipient of a Henry A. Jastro/Peter J. Shields Research Fellowship Award-3 years 2006-2008
- UC Davis Geography Grad. Group Research Grant: Student Support Award-6 years 2005-2011

TEACHING EXPERIENCE

- University of Washington, Friday Harbor Labs. Instructor
  Marine Mammals of the Salish Sea, lecture and lab 2017
- UW-FHL Instructor
  Marine Biology, lecture and lab 2017- 2019
- University of California, Davis (UCD). Instructor
  Habitat Conservation and Restoration, lecture and field lab
  Wildlife, Fisheries, Conservation Biology Department (WFCB) 2014, 2015
- UCD Teaching Assistant (TA) – Habitat Conservation & Restoration, WFCB 2006 -2013
- TA – Wildlife Ecology and Conservation, WFCB 2011-2013

- TA – Natural History of California's Wild Vertebrates, WFCB 2011-2013
- TA – Coastal Ecosystems, WFCB 2010
- TA – War & Terrorism, Science and Society 2009
- Graduate Student Researcher, Coastal Ecosystems Analysis – Pt. Reyes CA. 2005, 2008
- TA – Technology in Society, American Studies 2008
- TA – Plant Geography, WFCB 2006
- TA – Physical Geography, Environmental Science and Policy 2006
- TA – Nature and Culture in America, American Studies 2005
- TA – Human Evolutionary Biology, Anthropology 2004

ACADEMIC & COMMUNITY SERVICE

- Elected to the Steering Committee for the Salish Sea Ecosystem Advocates 2009-present
- Scientific Advisor for Killer Whale Tales, 2008-present
  Elementary school environmental education program
- Admissions Committee, Geography Graduate Group 2006-07 applicant pool 2006
- Executive Committee, Geography Graduate Group, Student Representative 2004-2007
- U.C. Davis Graduate Students Association, Graduate Group Representative 2004-2007

PUBLICATIONS

- Holt, Marla M., M.B. Hanson, C.K. Emmons, D.K. Hass, **D.A. Giles**, J.T. Hogan, 2019. Sounds associated with foraging and prey capture in individual fish-eating killer whales, *Orcinus orca*. Journal of the Acoustical Society of America 146, 3475
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- S. Ellis, D. W. Franks, S. Nattrass, M.A. Cant, D.L. Bradley, **D.A. Giles**, K. C. Balcomb, D. P. Croft, 2018. Post-reproductive lifespans are rare in mammals. Ecology and Evolution Vol. 8, (5)
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INVITED LECTURER / PARTICIPANT *(SELECTED EVENTS)*

- Orca Network's Ways of Whales Workshop – *Everybody Loves a Pooping Whale: what whale feces can tell us about ecosystem health* 2020
- Lummi Indian Nation – *Plight of the Southern Resident killer whales* 2019
- Orca Network's Ways of Whales Workshop, *Recent findings and pending research* 2019
- Department of Fisheries and Oceans Canada, Invited Participant, Technical Working Group on small vessel noise mitigation 2019
- International Society for Anthrozoology (ISAZ) - UC Davis Veterinary Medicine, Plenary speaker: *A decade post listing - reassessing identified threats to the federally listed "endangered" Southern Resident Killer Whales.* 2017
- Orca Network's Ways of Whales Workshop, *State of the science on endangered Southern Resident killer whales* 2016
- Salish Sea Conference, Vancouver British Columbia, Canada. 2016
  Phocoenacide: the killing of porpoise by fish eating killer whales
- The Whale Museum's Naturalists Training Gear-Down, invited speaker. 2015
- American Cetacean Society Biennial Conference, invited speaker, San Diego CA 2012
- California Geographical Society Annual Conference, Davis CA 2012
  Using non-invasive remote sensing equipment and GIS to assess potential effects of vessels on Southern Resident killer whale behavior in the Salish Sea

EXHIBIT B

PLOS ONE | B4 Wild Fish Conservancy vs NMFS - Litigation
June 2020

RESEARCH ARTICLE

Population growth is limited by nutritional impacts on pregnancy success in endangered Southern Resident killer whales (*Orcinus orca*)

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Abstract

The Southern Resident killer whale population (*Orcinus orca*) was listed as endangered in 2005 and shows little sign of recovery. These fish eating whales feed primarily on endangered Chinook salmon. Population growth is constrained by low offspring production for the number of reproductive females in the population. Lack of prey, increased toxins and vessel disturbance have been listed as potential causes of the whale's decline, but partitioning these pressures has been difficult. We validated and applied temporal measures of progesterone and testosterone metabolites to assess occurrence, stage and health of pregnancy from genotyped killer whale feces collected using detection dogs. Thyroid and glucocorticoid hormone metabolites were measured from these same samples to assess physiological stress. These methods enabled us to assess pregnancy occurrence and failure as well as how pregnancy success was temporally impacted by nutritional and other stressors, between 2008 and 2014. Up to 69% of all detectable pregnancies were unsuccessful; of these, up to 33% failed relatively late in gestation or immediately post-partum, when the cost is especially high. Low availability of Chinook salmon appears to be an important stressor among these fish-eating whales as well as a significant cause of late pregnancy failure, including unobserved perinatal loss. However, release of lipophilic toxicants during fat metabolism in the nutritionally deprived animals may also provide a contributor to these cumulative effects. Results point to the importance of promoting Chinook salmon recovery to enhance population growth of Southern Resident killer whales. The physiological measures used in this study can also be used to monitor the success of actions aimed at promoting adaptive management of this important apex predator to the Pacific Northwest.

Competing interests: The authors have declared that no competing interests exist.

1. Introduction

The Southern Resident killer whales (SRKW; *Orcinus orca*) represent the southern population of the fish-eating ecotype inhabiting the northeast Pacific Ocean [1]. From late May through October, the three SRKW pods, termed J, K and L, frequent the inshore waters of Washington State and British Columbia, commonly known as the Salish Sea. Following a near 20% decline in their population during the late '90's, the population was listed as endangered under the Canadian Species at Risk Act in 2001 [2] and the U.S. Endangered Species Act in 2005 [1]. Only 78 individuals (J pod = 24 individuals; K pod = 19 individuals; L pod = 35 individuals) remain in the current population as of December, 2016 [3]. Reduced availability of their preferred prey, threatened and endangered Chinook salmon, appears to be at the core of the SRKW decline [4–7], although exposure to toxicants [8], and pressure from vessel disturbance may also contribute to these cumulative effects [9].

Reduced fecundity appears to be a particularly important contributor to the SRKWs failure to recover [4]. The rate of successful pregnancy in the wild population is unknown since, to date, pregnancy is only confirmed by observation of a newborn calf. SRKW typically give birth every 5.3 years [10]. However, holding age structure and survivorship constant, fecundity rates of SRKW (0.21) are significantly lower than those of Northern Resident (0.26;) [11] or Southeast Alaskan Resident killer whales (0.27) [12], neither of which are listed as at risk. Assuming a median peak fecundity rate of 0.21, the 31 potentially reproductive females in the SRKW population should have had 48 births between 2008–2015. Yet, only 28 births were recorded during that period. The 7 adult females in K pod have not had a birth since 2011, and just two births since 2007. The 24 females in the remaining two pods (J and L) have averaged < 1 birth per pod since 2011, with no births in 2013, but had 7 births in 2015. One of the two offspring born in 2014 died [3]. This study addresses causes of the low reproductive rate in SRKWs in an effort to recommend management decisions that can enhance population growth and long-term sustainability of this endangered population.

We examine determinants of pregnancy success and failure in the SRKWs from 2008 through 2014 based on hormone measures of pregnancy occurrence and health as well as physiological stress from genotyped feces. SRKW fecal samples are located with high efficiency by specially trained detection dogs, with detection rates over five times that by trained human observers [5,13,14]. Progesterone and testosterone collectively provide reliable indices of pregnancy occurrence, timing and health in killer whales. Concentrations of both P4 and T increase several-fold during gestation, although the increase is more gradual for T. Both hormones sharply decline to pre-conception levels around parturition [15,16]. We develop and validate a noninvasive endocrine measure of pregnancy occurrence and loss in the killer whales using metabolites of progesterone (P4) and testosterone (T) excreted in their feces.

Fecal glucocorticoid (GC) and thyroid (T3) hormone metabolite measures are used to monitor nutritional and disturbance stress within and between years. These two endocrine systems work closely together to regulate energy availability and utilization to meet nutritional, growth and thermoregulatory demands [17]. GCs rapidly rise in response to poor nutrition, cold temperature and disturbance stressors, mobilizing glucose to provide energy to deal with the immediate emergency [18,19]. GC concentrations over time are particularly informative for distinguishing nutritional from boat stress since abundances of both Chinook and whale-watching boats have very similar temporal patterns. Chinook and boat abundance are both relatively low in spring, peak in mid- to late August and then decline. Yet, the GC signal from nutritional stress should be lowest when fish abundance is at its peak while highest when boat density is at its peak [5].

Thyroid hormone (triiodothyronine, T3), on the other hand, produces a more conservative response to nutritional and thermal stress, functioning by adjusting metabolism. It is also

important to promote fetal brain growth during gestation [20]. While T4 is the most abundant thyroid hormone, it is directly converted to T3, which has many times the biological activity of T4 [20,21]. T3 levels are relatively slow to change when food shortages are first encountered, allowing the body to use all available fuel to search for food. If poor food conditions persist, T3 abruptly declines, lowering metabolism to prevent the body from exhausting its remaining fuel stores [21–24]. T3 may also be blunted under good food conditions when a low metabolism is needed to increase growth (e.g., to accumulate blubber stores in fall, in preparation for the relatively lean winter; [20]). In dolphins, T3 is lower in failed versus successful pregnancies at all stages of gestation [25]. T3 is relatively unresponsive to disturbance stress.

This study uses temporal patterns in P4 and T to predict pregnancy outcomes among the SRKWs and T3, GC and the T3/GC ratio to index the importance of nutritional and other stressors in their reproductive decline.

1.1 SRKW natural history

Mean reproductive maturity (age at first conception) in female SRKWs occurs at 9.8 years of age in captivity 12.1 years in the wild [10,26]. Maximum fecundity (probability of becoming pregnant in a single estrous cycle) of SRKW occurs between ages 20–22, increasing quickly during the first four years after sexual maturity, slowly declining from age 22 to 39, and then precipitously declining thereafter [4,10]. Gestation is approximately 18 months, making the prior year's salmon availability particularly important to fecundity [11,27].

During our late May through October study period, the SRKWs primarily feed on Chinook salmon, increasingly dominated by Fraser River Chinook (FRC) returning to spawn in nearby rivers [28,29]. SRKWs generally spend the remainder of the year outside the Salish Sea, moving up and down the Pacific Coast, from CA to Southeast AK [6]. K and L pods tend to spend more time further south than does J pod in winter, while J pod frequents the Salish Sea more than does K and L pods in summer and winter. Nutritional demands on SRKW are presumed to be greatest in winter when their salmonid prey are more widely dispersed, smaller in size and other non-salmonid prey appear to be a larger fraction of the diet [6,29,30]. Thermoregulatory demands may also influence nutritional demands during winter. SRKW then transition to spring, eventually subsisting on a diminishing number of spring/summer run adult Chinook salmon approaching river mouths inside and outside the Salish Sea until the Fraser River Chinook (FRC) runs peak in mid- to late-August.

Temporal patterns in fecal GC and T3 concentrations [5], combined with radio-tagging data [28], suggest that early spring interior race Columbia River Chinook (CRC) runs are also important to SRKW nutrition. The CRC run increases from mid-March to the end of May based on estimates at the Bonneville dam [31] and have some of the highest fat content of any adult salmon to support their extremely long freshwater spawning migration [32,33]. Foraging on the fat rich Columbia River Chinook in early spring was hypothesized to replenish the killer whales after the long winter and sustain them until the temporally and quantitatively variable mid to late August peak in Fraser River Chinook (FRC) occurs (S1 Fig). T3 concentrations in fecal samples collected between 2007 and 2009 were consistently at their highest when the SRKW first arrived in the Salish Sea in late spring [5]. Presumably, this occurred because the whales arrived after feeding on the fat rich Columbia River Chinook. SRKW were detected twice as frequently at the Columbia River in early spring than expected by chance [28]. This argument is further supported by increases in serum thyroid stimulating hormone, T4 and T3 in fasting humans and rats in response to leptin injections [20]. With FRC runs still quite low, T3 levels then fell precipitously. GC concentrations when the SRKWs first arrive in the Salish Sea in late spring were also relatively high, further reflecting the comparatively low FRC

abundance at that time, and consistent with the precipitous decline in T3 shortly following SRKW arrival [5].

2. Methods

2.1 Ethics statement

Fecal samples were collected in United States waters under National Marine Fisheries Service permits 532-1822-00, 532–1822, 10045 and 17344. Samples were collected in Canadian waters under Marine Mammal License numbers 2008–16, 2009–08, 2010–09 and 2012–08, as well as Species at Risk Act permits numbered 91, 102, 109 and 155. Sample collection methods were approved by the University of Washington's Institutional Animal Care and Use Committee (IACUC) under protocol 2850–08.

2.2 Scat (fecal) sampling using detection dogs

Scat sampling occurred in the Salish Sea between late May and October, from 2008–2014, coinciding with the time the SRKWs frequent the study area. Whenever possible, we aimed to evenly sample each pod by starting at the front of the pod's direction of travel, continuing to sample until the pod passes and then returning again to the front of the pod.

Scat samples are located by detection dogs trained to locate SRKW scat floating on the water's surface [5,13,14]. The use of detection dogs greatly increases sample size due to their remarkable ability to smell SRKW scats at distances up to one nautical mile away, even in fast moving currents. The detection dog rides on the bow of the boat, driven perpendicular to the wind, beginning at least 200 yards downwind from an area where the whales have just traveled. As the boat approaches the edge of the scent cone emanating from the sample, the dog's behavior suddenly changes from resting to actively perched far over the bow of the boat, anticipating its reward for sample detection. As the boat passes through the center of the scent cone, where the odor is strongest, the dog leans heavily over the windward side of the boat, following the strongest scent, informing the handler to direct the boat driver to turn into the wind. Subtle cues by the dog, relative to wind direction, allow the driver to stay on the scent line until the sample is reached. The dog typically becomes restless, often whining at that point because the scent surrounds the boat and thus no longer has a clear direction. If at any time the boat travels out of the scent cone, the dog changes position and looks back to where the scent was strongest. The handler then directs the driver to circle back into the scent cone until the dog's change in behavior once again alerts the handler it has redetected the scent.

As soon as the sample is visually located, a 1-liter polypropylene beaker fastened to a 3–6 foot pole is used to scoop the sample by skimming the surface just under the sample. The first sample out of the water is presented to the dog, which is followed immediately by the toy reward and a few minutes of play. Meanwhile, the crew continues to scoop all remaining sample pieces from the water's surface. The majority of water is carefully poured off the sample, and the sample pieces are collected into a 50 mL polypropylene tube, centrifuged, and the remaining seawater is decanted. The sample is placed on dry ice until stored frozen at -20˚C that evening and remains at that temperature until processed in the lab. Fecal samples range in size from 0.5 to 300 mls, but a typical sample collection volume is 2 mls. Fortunately, the consistency of SRKW scat makes the hormones fairly evenly distributed even in small samples (Ayres and Wasser, unpublished data).

2.3 Fecal DNA and hormone measures

Once thawed for hormone extraction, the homogenized sample is swabbed for DNA using a synthetic tip. The swab is then kept frozen at -20˚C until being genotyped for species, sex, pod,

and individual identification by NOAA NW Fisheries Science Center [34]. 76% of all individuals are currently genotyped to the individual, and 88% of all adult females. Fecal hormone metabolites of glucocorticoid (GC), thyroid (triiodothyronine, T3), testosterone (T) and progesterone (P4) are extracted using methods described in [21] and measured using assays in Wasser et al. [35] (P4), [36] (GC), [21] (T3)] and Vellosa et al. [37] (T). Briefly, each sample is thawed once and centrifuged (2,200 rpm for 20 minutes), allowing any excess salt-water to be decanted. Samples are lyophilized (48 hours in a Labconco FreeZone Freeze Dry System), thoroughly mixed and up to 0.1g weighed, transferred to a 50 ml polypropylene screw-top tube and extracted once in 15ml of 70% ethanol using a Multi-Tube Pulse Vortexer (Terre Haute, IN). Extracts are then stored at -20^0 C until assayed for hormone concentrations. Hormone concentrations are expressed per gram dry weight to control for inter-sample variation due to diet and variable moisture [38]. Wasser et al. [38] showed that expressing fecal hormones per gm dry weight controls for diet related changes in fecal bulk. Because fecal hormones are hydrophobic, removing all water from the sample removes the majority of variation in fecal bulk, significantly improving the blood-fecal hormone correspondence (see also [5] for killer whales). Samples smaller than 0.02 g dried weight were excluded from analysis to avoid inflation effects of low sample mass on hormone concentrations [39].

Radioimmunoassay was performed to measure fecal hormone metabolites using ^{125}I corticosterone RIA kits (#07–120103; MP Biomedicals, Costa Mesa, CA) and MP Biomedicals' Total T3 coated tube RIA kits (#06-B254216) for GC metabolites and T3, respectively. The T3 assay was previously validated for killer whales [21]. The GC assay [36] was validated for killer whales in Ayres et al [5]. Fecal pools as well as commercial controls from each assay kit were used to assess inter-assay coefficients of variation. Commercial T3 controls were prepared as previously described [21]. P4 and T were measured using an in house 3H progesterone RIA assay using antibody CL425 [35,40], and an in-house 3^H testosterone RIA assay using antibody #250 [37,40]. All other hormone assays were validated in the present study.

All five hormone assays exhibited parallelism; slopes of serially diluted SRKW fecal extracts were not significantly different from the slopes of the standard curves (GC: $F_{1,7} = 0.41$, $p = 0.54$; T3: $F_{1,9} = 2.89$, $p = 0.12$; P4: $F_{1,10} = 0.80$, $p = 0.3925$; T: $F_{1,9} = 3.65$, $p = 0.09$). Fifty percent binding of the radioactively labeled hormone occurred at target dilutions of 1:60 for GC, 1:30 for T3,1:60 for P4 and 1:10 for T metabolites. All five hormones also exhibited good accuracy at their target dilutions (GC: slope = 1.2, $r^2 = 0.98$; T3: 1.09, 1.00; P4: 1.07, 0.98; T: 0.68, 0.99), indicating that substances in SRKW fecal extract do not interfere with hormone binding. Inter-assay coefficients of variation were 7.8% for T3, 7.6% for GC; 17% for P4, and 19% for T. Intra-assay coefficients of variation (calculated as the percent of the mean divided by the standard deviation) were 1.9% for T3, 3% for GC, 3.1% for P4; and 3.2% for T. Antibody cross-reactivities are published in Wasser et al ([35], P4; [36], GC; [21], T3) and Velloso et al ([37], T).

2.4 Pregnancy assignment

All whales are photo-identified each day they are observed in the study area, making it unlikely that a newborn would be missed if present when the population is being observed [3]. This enabled us to establish temporal pregnancy profiles using fecal P4 and T concentrations for all pregnant females that subsequently gave birth, approximating gestational age at the time of sample collection based on the estimated birth date of the female's calf. All birth dates in our study (Table 1) were estimated by two independent observers from the Center for Whale Research, respectively with 40 and 30 years experience, using close range photographs taken of each calf at the time of first observation. Features used to assess calf age included: shape of

Table 1. Sex, date of first observation, estimated age, birthdate and survival status for each calf whose mother was sampled during her pregnancy or lactation of that calf.

	Calf Data						Mother of Calf data		
Year	Calf ID	Calf Sex	Date Calf was first photographed	Assigned Calf Birthday	Estimated age of Calf	Calf age at death	Mother of Calf	Birth year of Mother	Age of Mother
2007	J42	F	5/2/2007	5/2/2007		Alive	J16	1972	35
2008	K42	M	6/3/2008	4/3/08	1–3 mo	Alive	K14	1977	31
2008	L111	F	8/12/2008	7/30/2008	2 wk	<1 month	L47	1974	34
2009	L112	F	2/6/2009	1/24/2009	2 wk	3 years	L86	1991	18
2009	J44	M	2/6/2009	1/1/2009	1 mo +	Alive	J17	1977	32
2009	J45	M	3/3/2009	2/15/2009	2 wk	Alive	J14	1974 (died 2016)	35
2009	L113	F	10/10/2009	10/1/2009	1–2 wk	Alive	L94	1995	14
2009	J46	F	11/11/2009	10/28/2009	2 wk	Alive	J28	1993 (died 2016)	16
2010	J47	M	1/3/2010	12/9/2009	< 1 mo (12/5 no calf)	Alive	J35	1998	12
2010	K43	F	2/21/2010	1/31/2010	3 wk	Alive	K12	1972	38
2010	L115	M	8/6/2010	7/31/2010	1 wk	Alive	L47	1974	36
2010	L116	M	10/13/2010	10/3/2010	1–2 wk	Alive	L82	1990	20
2010	L117	M	12/6/2010	11/30/2010	1 wk	Alive	L54	1977	33
2010	L114	U	2/21/2010	2/16/2010	< 1 wk	4 months	L77	1987	23
2011	K44	M	7/6/2011	7/3/2011	3 days (No calf 3 days prior)	Alive	K27	1994	17
2011	L118	F	2/10/2011	1/20/2011	3 wk?	Alive	L55	1977	34
2011	J48	U	2/17/2011	1/29/2011	$\leq$ 3 wk	<1 month	J16	1972~	39
2012	J49	M	8/6/2012	8/6/2012	1 day, saw 1st day	Alive	J37	2001	11
2012	L119	F	5/29/2012	5/15/2012	2 wk	Alive	L77	1987	25
2013	unk	U	1/7/2013	1/7/2013	1 day	<1 month	J28	1993	20
2014	J50	F	12/23/2014	12/15/2014	2 wk? (12/12 no calf)	Alive	J16	1972~	42
2015	L123	M	11/7/2015	10/15/2015	< 1 Mo (10/11 no calf)	Alive	L103	2003	12
2015	J53	F	10/24/2015	10/14/2015	1–2 wk (10/03 no calf)	Alive	J17	1977	38
2015	L122	M	9/7/2015	8/24/2015	2 wk	Alive	L91	1995	20
2015	J52	M	3/30/2015	3/16/2015	2 wk (no calf 02/18)	Alive	J36	1999	16
2015	L121	M	2/25/2015	2/18/2015	~ 1 wk	Alive	L94	1995	20
2015	J51	M	2/12/2015	2/5/2015	1 wk	Alive	J41	2005	10

Maternal age at time of sampling is also included.

? = best guess.

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cranial crest (lumpy at birth), flopped over dorsal fin (apparent in first 1–2 days), fetal folds, fattening after first month, jaundice coloration, skin molting at 3–5 months, date of previous observed photo of pregnant females without a calf. The Center for Whale Research (unpublished data) developed these criteria by compiling a time-stamped folder of known-age calf photos that illustrate these age-dependent morphological differences.

A fecal P4 concentration threshold was then established to indicate pregnancy by comparing P4 concentrations across all known sex and reproductive classes, and demonstrating that all gestating SRKW females, subsequently confirmed to have been pregnant by a live birth, surpassed this threshold and sustained it until the end of their 18 month gestation period (see also

[15]). No samples from genotyped males, or from lactating, non-cycling, immature or post-reproductive females approached this P4 threshold. Comparisons of T concentrations were similarly used to separate pregnancies into early and late stages of gestation. T rises during pregnancy, albeit more slowly than P4. By mid-gestation, T concentrations in pregnant females are comparable to, if not higher than those observed only in adult males (but without a comparable rise in P4) [16] (see also results). Thus, high P4, low T samples were classified as from females in early gestation and high P4, high T samples were classified as from females in mid- to late-gestation. All samples from genotyped adult females at or above these P4 and T concentrations were classified as pregnant. Pregnancies were classified as successful if the female was subsequently observed with a live birth before 18 months from the time of sample collection. Otherwise, the pregnancies were classified as unsuccessful, representing a spontaneous abortion or an unobserved perinatal mortality.

2.5 Statistical analyses

All statistical analyses were performed using the software, JMP (SAS Institute, 2010). Log-transformed values were used for all hormone analyses. A general linear model (GLM) was used to distinguish reproductive and non-reproductive groups of each sex based on P4, T, T3, GC and T3/GC concentrations. Differences between groups were then tested using a chi-square contrast test.

The abundance and timing of Fraser River Chinook (FRC) was determined from 2008–2014 by Albion Test Fishery CPUE data (Catch Per Unit Effort, [41]), collected on a daily basis by an independent observer during spring, summer, and fall months. All correlations between hormone concentrations and fish abundance used Albion Test Fishery CPUE data lagged by 12 days from the time a sample was collected; the 12 day lag was derived from estimates of Chinook swim time from the study area to the test fishery, which was also in agreement with the lag time that resulted in the best fit model between prey abundance and nutritional hormones [5,8]. The CPUE data were $\log_{10}$ transformed to achieve normality. Early spring Columbia River Chinook abundance was also estimated from daily counts at the Bonneville dam [31] by calculating the area under the curve from Julian Day 100 to 140.

Vessel counts were taken every half hour (within 5 minutes of the half hour). Any vessels outside the 5 minute grace period were not counted. All boats within 0.5 mile of the killer whales were recorded by type (commercial whale watch, recreational, cargo, ferry, commercial fishing, enforcement, research, monitoring, and kayak or paddleboard) and activity (e.g., transiting, whale watching, fishing (lines in the water), acoustic, enforcing). A second (B) count was taken when a second nearby whale group was present (1–2 miles away) but outside of our initial count area, providing that the vessels and their activity could be clearly identified.

The correspondence between fish abundance and Julian date (i.e., the consecutive day of the year, ranging from 1 to 365) and vessel abundance and Julian date, across years, was established with a GLM, which allowed us to then use Julian date as proxies for fish and boat abundance in subsequent analyses. A GLM was used to separately predict T3 and GC by Julian date for all sampled individuals. The relation between early spring Columbia River salmon abundance and subsequent T3 and GC concentrations during that same year was also tested in those regressions. Finally, GLM was used to separately predict T3, GC and the T3/GC ratio, using Julian date as a polynomial and pregnancy type as independent variables. GC was included as a covariate whenever predicting T3, and vice versa, since both hormones respond to other in the regulation of energy balance. For T3, this was done by fitting T3 by GC, saving the residuals, and then using the residuals of that analysis in the final regression. For GC, the

residuals for GC fit by T3 were used. In all cases, forward stepwise model selection was used to identify the best model in our GLM analyses, based on Akaike's Information Criterion (AIC).

Raw Data are provided in S1 Appendix.

3. Results

In total, there were 348 samples from known (genotyped) individuals, in the final analytic dataset representing 79 unique whales (Supplemental Information-raw data), including 11 successful and 24 unsuccessful pregnancies (Table 2). Each year included a representative sampling by pod, sex and reproductive class.

3.1 Changes in fish abundance, vessel density, T3 and GC concentrations over time

Based on delta AIC, the Albion Test Fishery Abundance of FRC, measured in CPUE, was best predicted by a 4th order polynomial using Julian date (i.e., consecutive day of the year, $P < 0.0001$) across years (Fig 1A), with a peak in CPUE at day 228 (Aug 16). CPUE significantly declined across years, when examined as a continuous variable ($P < 0.0001$). The lowest FRC CPUE occurred in 2013, followed by 2012 (for both, $p < 0.0001$ compared to all prior years, and $p < 0.004$ compared to 2014) and then 2014 ($p < 0.04$ compared to 2008–2011) (see also S1 Fig). Vessel density was similarly predicted by a 4th order polynomial using Julian date ($p < 0.0001$) with a peak at day 222 (Fig 1B). Vessel density significantly increased across years, when examined as a continuous variable ($P < 0.0001$).

We next separately predicted T3 and GC concentrations based on Julian date (Fig 1C and 1D, respectively), given the close association of Julian date with both fish and vessel abundance. Spring Columbia River Chinook (CRC) abundance was also included as a covariate in these analyses since the relatively slow responding T3 was hypothesized to still be influenced by spring CRC abundance at the time of SRKW early summer arrival in the Salish Sea. T3 concentration was best predicted by a 5^{th} order polynomial of Julian date ($p < 0.0001$) and was also positively correlated with CRC ($p < 0.0001$). For all years of study, T3 was at its peak

Table 2. Pod composition and samples per unique successful and unsuccessful pregnancy from genotyped females per year.

	SRKW Pod			Reproductive Age Class				Unsuccessful Pregnancy⁺: unique whales/ total samples		Confirmed pregnancies⁺*: unique whales/ total samples	
Year	J	K	L	Juvenile	RM	RF	PRF	Low T	High T	Low T	High T
2008	13	5	7	7	6	7	5	0/0	0/0	1/1	1/1
2009	24	10	14	9	18	13	8	1/2	2/2	0/0	1/2
2010	14	6	12	3	6	13	10	1/1	0/0	1/2	1/1
2011	25	17	23	15	16	24	10	0/0	3/4	2/2	1/1
2012	32	11	8	6	13	24	8	5[#]/9	1[#]/2	0/0	0/0
2013	17	7	21	6	12	23	4	4[†]/4	1[†]/1	0/0	0/0
2014	36	18	6	19	10	27	4	5/6	1/1	1/4	2/2

RM = reproductive male, RF = reproductive female, PRF = Post-reproductive female.

*Not all samples between years are unique pregnancies

[†] Includes 2 samples from one pregnancy, one with Low T and one with High T

[+] Includes only samples from females with P4 concentrations ≥ 2000 ng/g

[#] Observed birth, reclassified at unsuccessful due to early perinatal mortality

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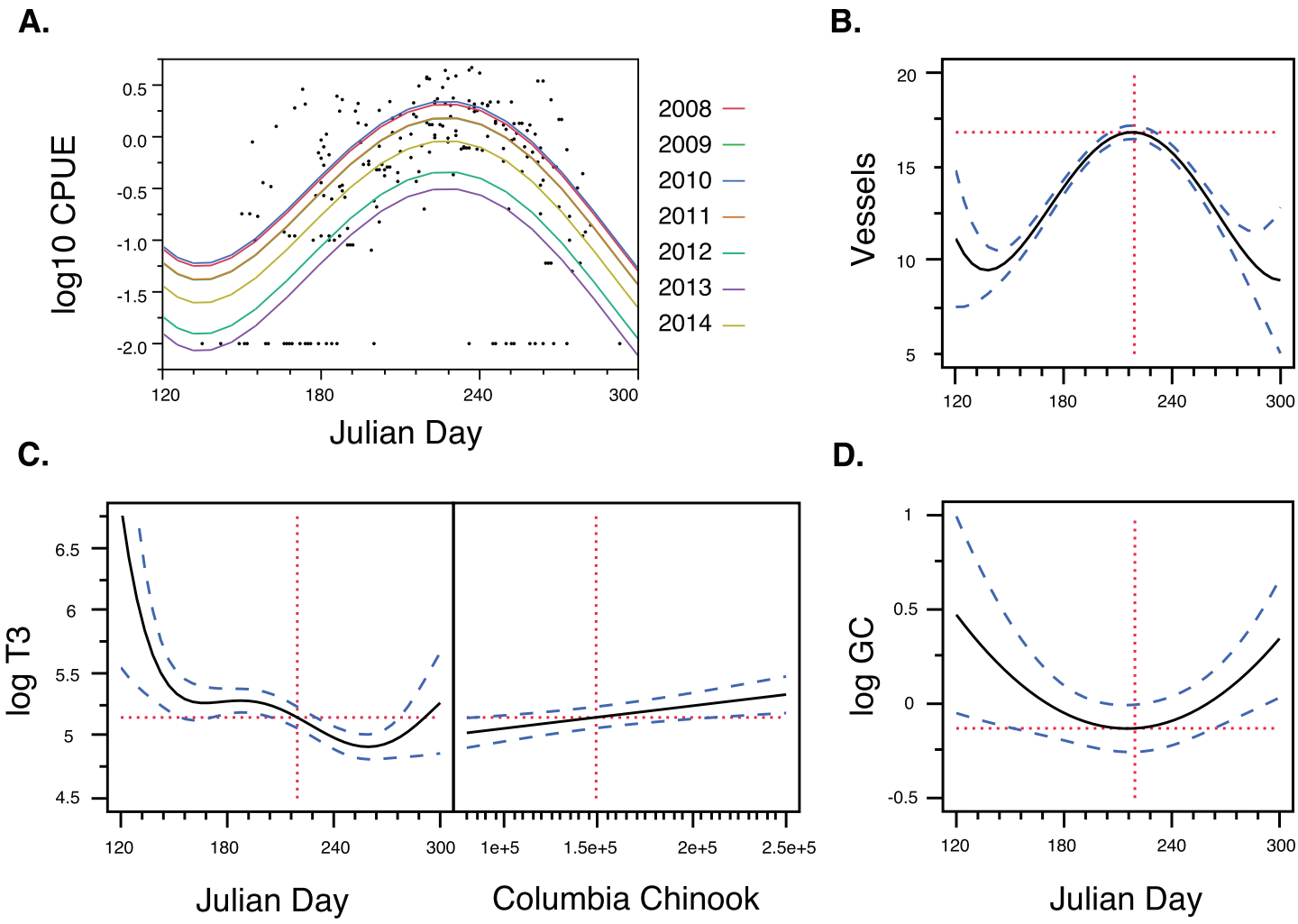

Fig 1. A) Fraser River Chinook (FRC) Salmon Run abundance (CPUE: catch per unit effort), B) mean vessel count (all boats observed with 0.5 m of the whales) plotted by Julian date across years, C) Change in SRKW fecal thyroid hormone (triidothyronine, T3 ng/g dry feces) by Julian date (left panel) and early spring Columbia River Chinook abundance (right panel), and D) Change in SRKW fecal glucocorticoid (GC ng/g dry feces) hormone concentration by Julian date. Dashed blue lines represent the standard error surrounding each curve. Vertical red line in left panel, Fig C indicates the mean peak in FRC abundance and the mean peak in boat abundance in Fig B and D.

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when the SRKWs arrived in early summer, presumably after feeding on the early spring CRC. T3 sharply declined shortly thereafter, presumably because FRC abundance was still low, plateauing around the time that FRC CPUE begins to rise. T3 concentrations then slightly declined again in September, just after the FRC peak.

GC concentration was best predicted by the quadratic of Julian date ($p = 0.004$), showing the U-shaped pattern indicative of nutritional stress, with the trough at day 220, near the FRC peak. GC was not correlated with CRC, supporting the hypothesis that the GC response reflects more immediate conditions compared to T3.

3.2 Pregnancy occurrence and loss indices

Twelve females sampled during pregnancy were subsequently confirmed to give birth (37% of detected pregnancies) by photo-identification between 2008 and 2015. However, one of those females (J28) was subsequently reclassified as a High T unsuccessful pregnancy because her

calf died immediately post-partum.) In all samples, P4 was well above the 2000 ng/g pregnancy threshold by 2.5 months gestation, and remained so for the next 15.5 months until parturition. One sample collected on a confirmed pregnant female during her first month of gestation had P4 levels below the 2000 ng/g threshold (Fig 2A). By contrast, no male, or immature, non-cycling, lactating or post-reproductive female whale ever approached that P4 threshold (Table 3). The majority of samples from confirmed pregnant females were well above 18,000 ng by 10 months gestation. All samples from confirmed pregnant females exhibited a precipitous decline below 2000 ng/g P4 immediately following parturition (Fig 2A).

T concentrations of all samples from confirmed pregnant females clearly remained below 50 ng/g until mid-gestation (Fig 2B). Thus, pregnancy samples (i.e., samples above the 2000 ng/g P4 threshold) were divided into low ($\leq$ 50 ng/g) and high ($>$ 50 ng/g) T groups, respectively, corresponding to early, and mid-to-late stages of gestation (Fig 2A and 2B). The only other age-sex class that showed significantly elevated T concentrations, above the 50 ng/g threshold, was adult males, but their P4 concentrations never approached 2000 ng/g (see Table 3). T was above the 20 ng/g by 2.5 months gestation in all confirmed pregnant females, with the majority above 100 ng/g by 10 months gestation (Fig 2B). Low T confirmed pregnant females had a mean fecal P4 of 6206 ng/g ± 2565) and a mean T concentration of 21 ng/g ± 5.8, whereas High T confirmed pregnant females had a mean fecal P4 $>$ 25587 ng/g ± 5116) and a mean T concentration of 215 ng/g ± 43 (Table 3). With the exception of one early lactation sample, testosterone concentrations declined well below the 50 ng/g threshold after parturition (Fig 2B). Multiple scat samples were obtained from the same pregnancy event in 4 of the 11 pregnancies and three lactation events; all multiple samples exhibited these same P4 and T patterns over time.

None of the post-reproductive females were ever recorded to be pregnant nor did they show any sign of ovarian activity (Table 3). These results support the assertion that the "post-reproductive" adult females (>40 years of age) in this population have undergone reproductive senescence [42].

Samples from genotyped reproductive age adult females with P4 concentrations above the 2000 ng/g pregnancy threshold that were not followed by a live calf within the 18-month gestation period were assumed to be from females that experienced a spontaneous abortion (in utero mortality), or early perinatal death prior to calf's first observation, collectively termed an unsuccessful pregnancy (UPg). Among the females classified as reproductive adults, we characterized 24 unique unsuccessful pregnancy (UPg) events from 12 different females with genotyped samples collected between 2008–2014—up to 69% of all confirmed pregnancies (Table 2). All samples from the 22 apparent UPg's had significantly elevated progesterone concentrations well above 2000 ng/g. Yet, no observations of those females over the next 18 months included a new calf. As with confirmed pregnancies, the presumed UPg samples were separated into two distinct groups: one with T concentrations above 50 ng/g feces (mean T = 198.6±40; P4 = 37,425±12,820), hereafter termed "high T UPg" samples (7 unique females, 7 presumed late spontaneous abortions and one early perinatal loss), and the other with T concentrations below 50 ng/g feces (mean T = 11.3±3.2; P4 = 6618±2014), termed "low T UPg" samples (4 females, 16 presumed early spontaneous abortions; Table 2; Fig 3A). Multiple samples from 6 of the 24 unsuccessful pregnancy samples (4 low T, 2 high T, plus 1 low T that transitioned to high T) were all within the pregnancy range (i.e., P4 $<$ 2000 ng/g). Thirty three percent of the UPg samples (8 out of 24) identified here were high T UPg (up to 23% of all recorded pregnancies). The high T UPg samples were likely from the second half of gestation, based on their high P4 and T concentrations relative to temporal profiles for those hormones in whales with a confirmed pregnancy (see Fig 2).

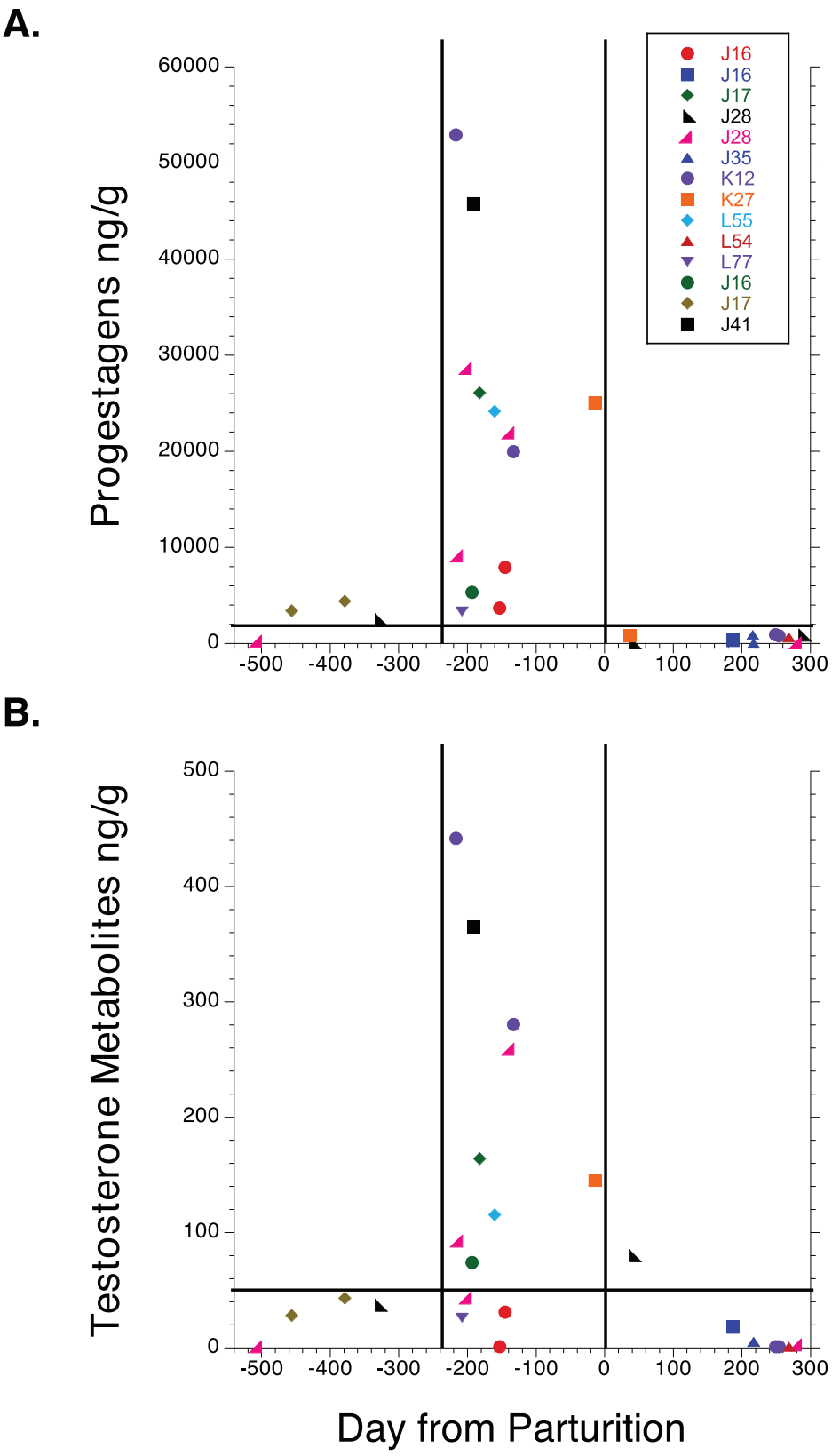

Fig 2. A) Progesterone (P4) and B) testosterone (T) concentrations across gestation and lactation, for all successful pregnancies (Pg), subsequently confirmed by observed births. Each unique pregnancy

is indicated by its own symbol, along with the associated female's ID. The vertical dashed black line in Fig A and B indicate estimated day of parturition. The 2000 ng pregnancy threshold is indicated by the horizontal dashed red line in Fig A, as is the 50 ng/g T cut-off for High and Low T samples in Fig B. The left vertical line in red indicates the Julian day where both P4 and T show sharp elevations.

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T3 and GC concentrations also varied across all sex, age and reproductive classes (Table 3). T3 was highest in juvenile and pubescent individuals compared to adults, with the exception of Low and High T successful pregnant and low T UPg females. All of those individuals also had a relatively high T3/GC ratio (> 0.3), indicative of relatively good nutrition (Table 3). By contrast, T3 in the High T UPg samples was comparable to that of non-pregnant adults (Table 3), and notably lower than the concentrations from successful pregnant and low T UPg females (Fig 3B). These High T UPg samples also had the highest GC concentrations of any reproductive class, was significantly higher than the GC concentrations in High T successful pregnancies. The T3/GC ratio in High T UPg females was lower than that of another other reproductive class (Table 3), indicative of nutritional stress (Table 3), and nearly 7 times lower than that among High T successful pregnancies. Indeed, the T3/GC ratio in High T successful pregnancies was higher than that for any other reproductive class, with the exception of lactating females (Table 3, Fig 3B).

3.3 Changes in T3 and GC concentrations relative to fish abundance over time across pregnancy groups

T3 and GC concentrations, along with the T3/GC ratios were separately compared among High T successful pregnant and UPg samples, across Julian date. (Low T samples were not included in these comparisons because their T3 and GC concentrations were not significantly different from those of confirmed pregnant females.) All three dependent variables were best predicted by a 3rd order polynomial of Julian date ($p < 0.01$). Similar to the overall population trend, T3 concentrations were highest in early summer, followed by a precipitous decline.

Table 3. Mean hormone concentration (ng/g dry feces) and (standard error) by sex and reproductive class for each hormone measured during the study.

	Reproductive Hormones				
Sex and Reproductive Class	**Thyroid (T3)**	**Glucocorticoid (GC)**	**Progesterone**	**Testosterone**	**T3/GC Ratio**
Juv F	248.40 (40.06)	610.73 (200.17)	794.40 (268.84)*b,k,u,C,J*	3.38 (1.14)*a,j,v,F*	0.69 (.24)*a,f*
Juv M	229.98 (26.98)*a,f*	501.03 (158.82)	800.96 (73.99)*a,j,t,B,K,O*	30.11 (7.84)*a-i*	0.44 (.05)*b,f*
Pub F	264.19 (47.49)*d,i*	955.08 (286.02)	305.90 (95.0)*g,q,y,F,H,J-N*	3.80 (1.90)*h,p,y,D,H*	0.70 (.31)*d*
Pub M	230.99 (29.34)*e*	1244.21 (310.87)	258.11 (42.15)*h,r,z,G,I,O-R*	19.32 (6.08)*q,A-E*	0.71 (.35)
Ad M	167.07 (10.63)*a-e*	1073.14 (114.92)	579.57 (38.14)*I,s,H-I*	126.67 (17.73)*I,r,u,w,z,E-H*	0.32 (.044)*e,f*
Ad F no-calf	169.97 (14.13)	1004.21 (135.15)	651.83 (68.28)*d,m,w,A,D,M,Q*	5.12 (1.60)*c,I,x,B*	0.35 (.057)
LoT Conf	250.78 (35.63)*c,h*	1127.81 (233.66)	6205.89 (2564.93)*g,o,B-G*	21.28 (5.78)*n,x-z*	0.37 (.14)
LoT Upg	252.56 (27.06)*b,g,i*	1288.23 (228.05)	6618.20 (2014.13)*e,n,t-z*,A	11.32 (3.2)*e,m,s-u*	0.82 (0.46)
HiT Conf	218.05 (45.6)	1057.31 (477.75)*a*	25587.17 (5116.49)*a-i*	215.34 (42.87)*f,t,v,w*	1.11 (.42)*c,e*
HiT Upg	177.1 (26.98)	1787.20 (467.83)*a*	37425.73 (12819.62)*j-s*	197.95 (39.7)*d,j-r*	0.16 (.035)*a-d*
Lactating	165.02 (24.70)*f-i*	1094.36 (270.03)	650.12 (84.68)*c,I,v,C,L,P*	22.71 (13.33)*b,k,s,A,G*	2.05 (1.59)
Post-Reprod F	199.01 (19.82)*j*	1039.2 (133.11)	662.30 (66.62)*f,p,x,y,E,N,R*	7.88 (1.89)*c,o,C*	0.36 (.068)

Significant differences between means in any two cells within the same column are indicated by the same italicized letter in both cells.
F = female, M = male, Juv = juvenile; Pub = pubescent, Ad = adult, T = testosterone, Conf = confirmed pregnant female by subsequent observation of a live calf; UPg = unsuccessful pregnancy.

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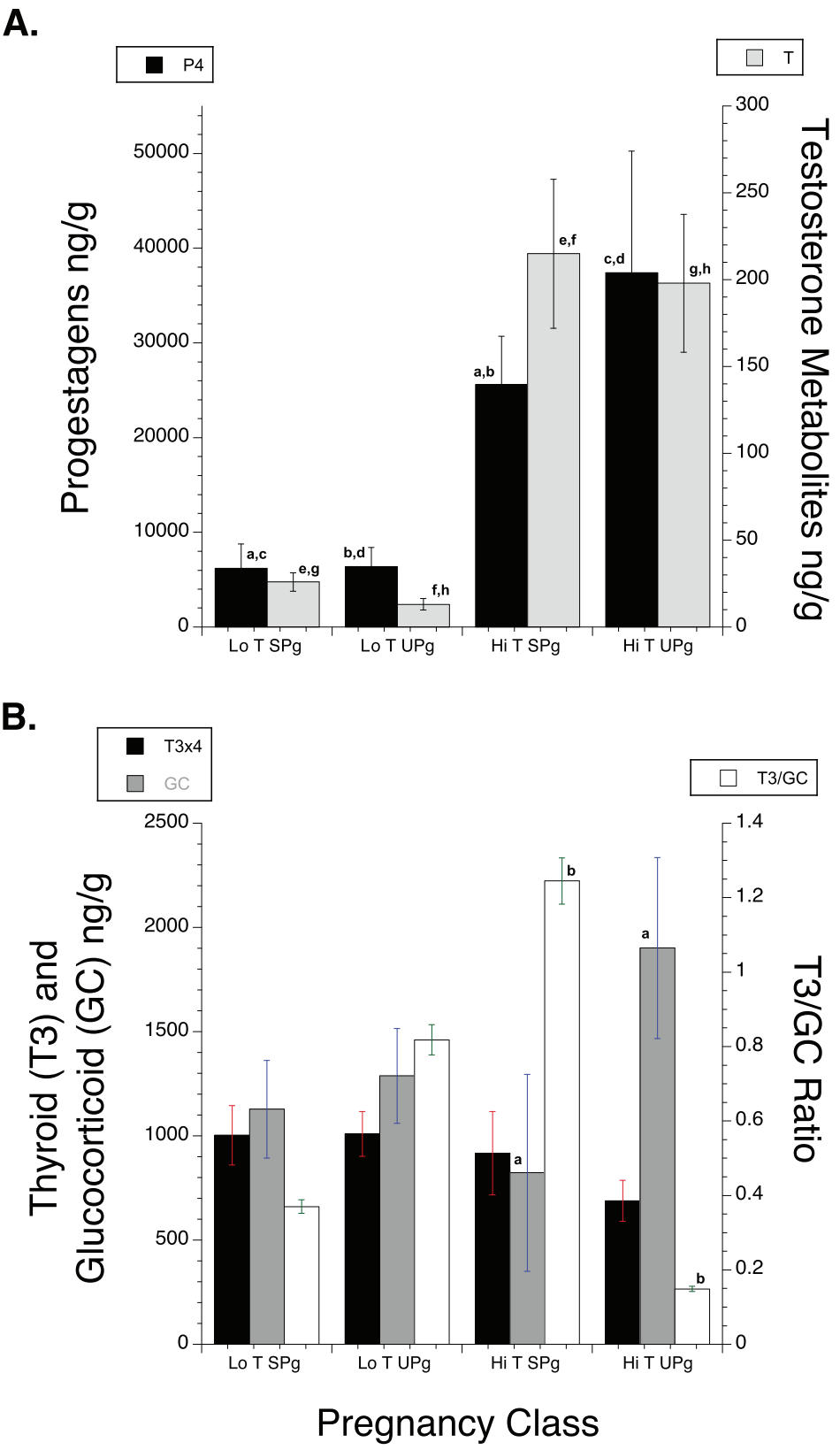

Fig 3. A) Mean P4 and T concentrations and B) mean tri-iodothyronine (T3) and glucocorticoid (GC) concentrations, along with the T3/GC ratio, for Low and High T successful (SPg) and unsuccessful

pregnancies (UPg). Corresponding values for all sex and reproductive classes of SRKWs, including significant differences between classes, are presented in Table 3. Note: T3 Concentrations are multiplied by 4 in Fig B to scale its concentrations to those of GC in order to present a double Y graph for 3 related metrics, each with different value ranges. Bars with the same letter are significantly different from each other.

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However, the initial T3 decline was longer in duration than that observed for the overall population, lasting until day 190. T3 concentrations in the pregnant females then increased until day 250 (Fig 4A), which was near the time when the FRC run reached it back (Fig 1A). While the pattern was the same in High T successful and unsuccessful pregnancies, T3 in High T UPg samples remained significantly lower than that in High T successful pregnant females ($p = 0.004$), consistent with relatively higher nutritional stress in the High T UPg females (Fig 4A). Change in GC concentrations among pregnancy females were the exact opposite of T3, showing a steep rise until day 190 followed by a decline until day 250, and significantly higher in High T UPg compared to High T successfully pregnant females ($p < 0.002$) throughout this period (Fig 4B). Change in the T3/GC ratio followed the same pattern as T3, also remaining significantly higher in HighT successful pregnancies ($p< 0.003$) (Fig 4C).

4. Discussion

Reproductive failure in response to conditions that jeopardize offspring survival has been described as an adaptive response if conditions are likely to improve in the foreseeable future. This environmentally-mediated loss most commonly occurs early in reproduction (conception and early pregnancy) when the cost of suppression (e.g., lost time and energy; impacts on maternal health) is relatively low [43,44]. However, failure at later stages of reproduction is expected when cues indicating poor fetal or neonatal conditions present themselves late in the reproductive event. The longer the span between conception and birth the more likely later suppression is to occur. Premature birth is a relatively low risk way to suppress reproduction because the reproductive failure occurs post-partum with reduced chance of infection. However, its occurrence should still depend on when harsh conditions present themselves. If fetal demise occurs or environmental conditions become especially harsh (e.g., risk of sepsis from starvation induced ketoacidosis during pregnancy; [45]), spontaneous abortion is expected. Thus, spontaneous abortion, premature birth, still birth, and perinatal and neonatal mortality are all part of a continuum of reproductive suppression that present with harsh conditions, on balance with risk of reproductive loss at that stage of reproduction [44,46].

SRKWs have an 18 month gestation period and their nutritional health depends on the relative timing of multiple, seasonal fish runs (e.g., spring CRC and summer FRC), as well as food availability in between those periods, each of which vary markedly between years (S1 Fig). The increasingly common occurrence of SRKW births outside the typical winter calving period may well be an indication of the increased unpredictability of diminishing fish runs along with the corresponding high rate of late reproductive loss in SRKWs, including more costly late spontaneous abortions. The SRKWs had a 69% pregnancy failure rate during our study and an unprecedented half of those occurred at later stages of reproduction when the energetic cost of failure and physiological risk to the mother was relatively high. Temporal patterns in T3 and GC hormone profiles suggest that the SRKWs are experiencing periodic nutritional stress, partly caused by variation in the relative timing and strength of seasonal FRC and CRC runs (Fig 1). This nutritional stress is significantly associated with unsuccessful pregnancies in SRKWs (Figs 3 and 4), impairing the potential for population recovery through low recruitment as well as risk to the health and survival of the limited number of reproductive-age females.

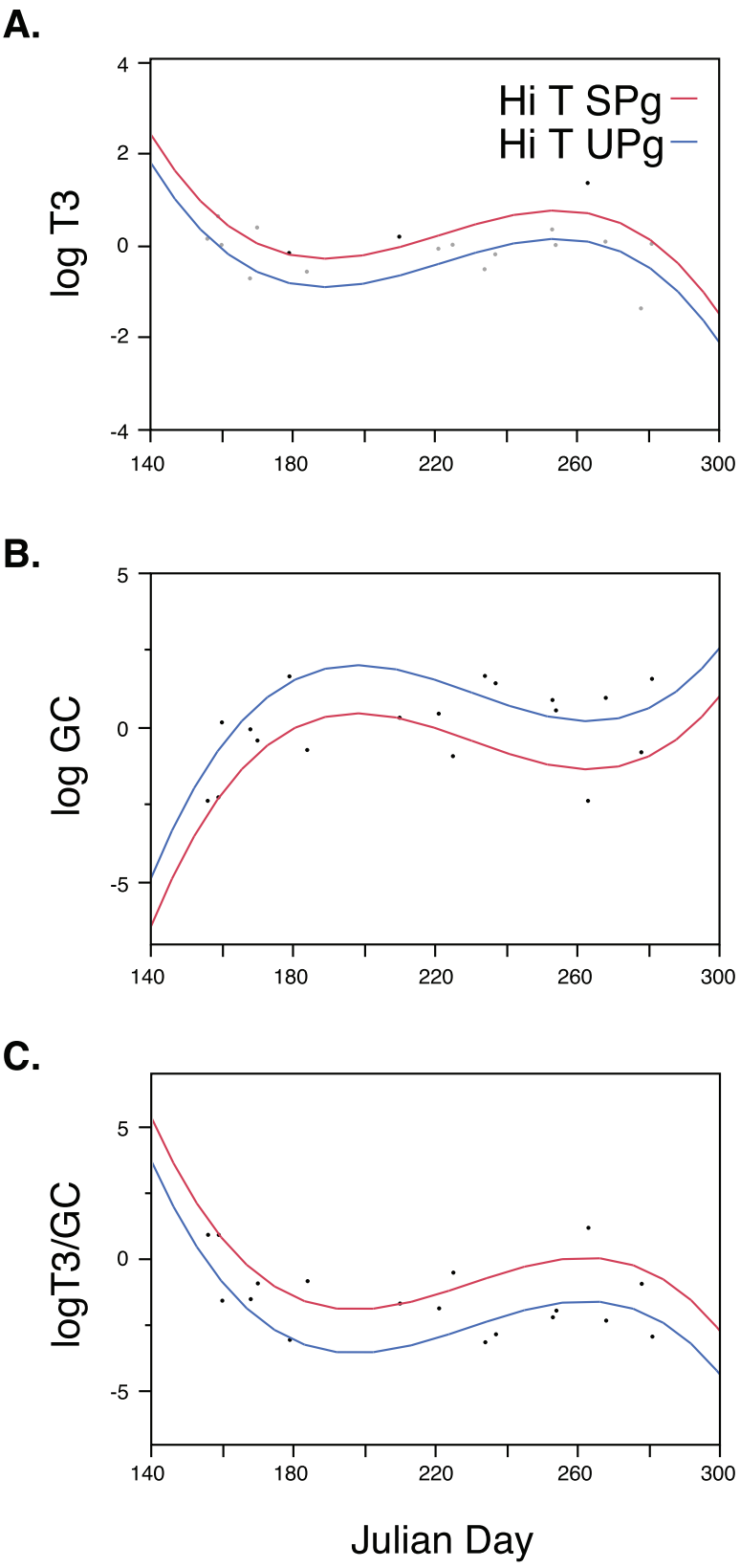

Fig 4. A) T3 and B) GC concentrations, along with (C) the T3/GC ratio, by Julian day for High T successful pregnancies (SPg) versus High T unsuccessful pregnancies (UPg).

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High T (mid-to-late gestation) females with successful pregnancies in our study had significantly higher T3 and lower GC concentrations, as well as a substantially higher T3/GC ratio over time, compared to High T unsuccessful pregnancies (Figs 3 and 4). This indicates that successfully pregnant females arrived in the Salish Sea in significantly better nutritional condition, and remained so compared to UPg females that experienced pregnancy loss some time after mid-pregnancy. West et al [25] similarly found significantly higher total T3 concentrations among adult females in successful compared to unsuccessful pregnancies at all stages of gestation among captive dolphins.

Only 4 detected pregnancies between 2011–2013 resulted in live births when Fraser River Chinook and early spring Columbia River Chinook runs were both exceedingly low. Just one of those births occurred in 2013, when both FRC and CRC abundances were at their lowest, and that animal died almost immediately post-partum. By contrast, there were up to 9 early gestation (Low T) and 5 mid to late gestation (High T) unsuccessful pregnancies detected during that same 3 year period, with almost half of these early-term and one of the mid to late term unsuccessful pregnancies occurring in 2013. That trend reversed in 2014, with relatively high CRC returns and early onset of FRC returns in 2014 and 2015 (S1 Fig, Appendix) that was followed by 8 new births between December of 2014 and October 2015; however, up to 6 unsuccessful pregnancies still occurred that year, five of which occurred early in gestation (Low T Upg).

High T UPg samples were either from late spontaneous abortions (also known as intrauterine fetal demise), or undocumented perinatal or neonatal deaths where the infant disappeared prior to first observation. The lack of observed perinatal or neonatal deaths when most successful births during our study were observed within 2 weeks of parturition (Table 1), led us to estimate that a substantial portion of the High T UPg samples represented late spontaneous abortions. Although the negative effect of these later reproductive losses on SRKW population growth is roughly the same, infection from a failed or incomplete abortion likely poses a greater risk of removing a reproductive female from the breeding population. At least one SRKW stranding was confirmed to be a pregnant female with infection from a retained fetus listed as the cause of maternal death (J32, December 2014).

Reproductive loss among women during the well-documented 1945 Dutch Famine may exemplify the kinds of impacts expected in response to severe nutritional stress among SRKWs, since: both humans and SRKWs have relatively long interbirth intervals (gestation length and extended lactation amenorrhea), starvation was acute and the Dutch Famine outcomes were not biased by interventions from modern health care [44,47,48]. The Nazis closed off the borders of Holland between October 1944 and May 1945, causing massive starvation over a 5–8 month period, with good food conditions before and after. There was a one-third decline in the expected number of births among confirmed pregnant woman during the under-nutrition period. Conceptions during the hunger period were very low. However, women who conceived during the hunger period had higher rates of abortion, premature and stillbirths, neonatal mortality and malformation. Nutrition had its greatest impact on birth weight and length for mothers experiencing hunger during their second half of gestation, when the fetus is growing most rapidly [47].

Many of the unsuccessful pregnancies in our study were based on single genotyped samples, and it is possible that pregnancy failure rates could be somewhat overestimated. For example, we cannot rule out that some portion of the singleton Low T samples were actually from post-ovulatory luteal phase females that did not produce a detectable conception. Some low T samples could also be from pseudo-pregnancies, although those are rare, have only been reported in captivity [49], and could be an artifact of captive husbandry where males and females are housed separately. It is unlikely that any post-ovulatory luteal phase samples were misclassified

as High T UPg samples because both P4 and T concentrations in the High T samples were all well above those expected for luteal phase samples (Table 3, Fig 2). Moreover, Robeck et al [15,16] clearly distinguished luteal phase samples from pregnant samples by 4 weeks of gestation. This is consistent with our findings from Fig 2, indicating pregnancy detection among females by 100 days of gestation. Given the above, we consider only a small portion of the 8 singleton, low T UPg samples with P4 above the 2000 ng/g pregnancy threshold to be possibly misclassified as early abortions. However, the consistency of these patterns on multiple endocrine and temporal measures, across years, strengthens the assertion that pregnancy failure is a major constraint on killer whale population growth, triggered by insufficient prey.

The rise in fecal P4 concentrations that we observed among successful pregnancies was somewhat delayed compared to that observed in serum from captive killer whales [15]. This could suggest that our estimated birth dates, and hence our projected conception dates, actually occurred earlier than expected, increasing the likelihood that some perinatal mortalities were misclassified as late spontaneous abortions. However, the delayed P4 peak in feces of pregnant SRKWs compared to Robeck et al [15] most likely resulted from differences in the P4 metabolites measured in feces versus serum. The predominant P4 metabolite measured by our antibody is 5α-DHP [35]. Using an EIA version of the P4 antibody we used in our study, Robeck et al [15] found that 5α -DHP did not become the predominant progesterone metabolite in captive killer whale serum until 161–360 days of gestation, and remained secondarily so from 361 days gestation to term. Fecal progesterone metabolites spiked around mid-pregnancy in our study, consistent with the time when 5α -DHP predominated in serum [15]. It is also noteworthy that our testosterone antibody [37,40] followed a similar temporal pattern in SRKW to that described for captive whales by [16]. That also supports the reliability of our projected conception dates and occurrences of spontaneous abortion.

Exposure to persistent organic pollutants (POPs)—lipophilic compounds with established adverse health effects—in response to food stress add yet another cumulative risk of fetal demise and/or perinatal and neonatal mortality. Lundin et al. [8,50] showed that POPs, namely PCBs, DDTs, and PBDEs, increase in circulation in SRKWs when Fraser River Chinook abundance is lowest, presumably due to increased fat metabolism in response to nutritional stress. Mobilization of contaminants into circulation also occurs during the energetic demands of lactation, with an estimated 70–90% lactation transfer of maternal toxicant burden in primiparous females [51]. High POP burden has specifically been associated with disruption of reproduction success and reduced calf survival in marine mammals [52–55]. Most notably, Lundin et al. [8] found increased Persistent PCBs, the group of PCBs considered more persistent and more toxic [56], in the female whales classified with UPg's (73%; 95% CI, 61–85) compared to all other female reproductive groups (range 43–56%). Further evidence in support of the occurrence of UPg in this population is the unexpected inverse in bioaccumulation of POPs with age in "nulliparous" mature females (3 of 4 nulliparous whales had an unsuccessful pregnancy defined by fecal hormone measures). This occurrence is likely explained by toxicant offloading from an undocumented pregnancy or neonate loss.

Both poor nutrition and increased POP loads have each been demonstrated to suppress T3, which negatively impacts fetal brain growth [22,57,58]; immunosuppression may also occur, increasing risk of infection [53,59–61]. Salmon are the Southern Resident killer whales predominant prey and main source of toxic exposures [62,63]. This relation of reduced food supply and increased exposure to lipophilic POPs could be similarly impacting coastal Native American communities that depend on this same seasonal salmon resource and also appear to be experiencing high rates of reproductive loss [64,65].

Results of the SRKW study strongly suggest that recovering Fraser River (FRC) and Columbia River Chinook (CRC) runs should be among the highest priorities for managers aiming to

recover this endangered population of killer whales. SRKW are suffering significant reproductive loss due to lack of Chinook prey and associated effects (e.g., release of lipophilic toxins into circulation). The FRC run is a major prey source for the SRKW population during summer and early fall, and appears to be key to providing the needed reserves to carry the whales through the subsequent winter [6]. The early spring CRC runs likely serve to replenish energetic reserves expended during the previous winter as well as help sustain the whales until the occurrence of the subsequent late summer peak in the FRC runs. The relative importance of the early spring Columbia River Chinook run likely became all the more critical to the SRKWs as historic FRC runs that peaked earlier in summer became depleted from overfishing and habitat destruction [6]. Other species, including people, also appear to be impacted by these conditions.

Without steps taken to remedy the situation, we risk losing the endangered SRKW, an extraordinarily important and iconic species to the Pacific Northwest. Since strengthening relevant Chinook runs should significantly decrease physiological stress and increase pregnancy success rates in SRKW during the same year that fish runs increase, the physiological indices used in this study could also provide rapid assessment tools for guiding adaptive management of SRKW populations. Historical and modern dependence on fish as an essential food source for coastal communities with limited resources, in conjunction with growing food shortages and increased risk of toxicant exposure, has international implications.

Supporting information

S1 Fig. Timing and abundance of Columbia River (orange) and Fraser River (blue) Chinook runs based on DART (2015) and Albion Test fisheries (Catch Per Unit Effort, Albion 2015), respectively (see also Lundin 2015).
(TIFF)

S1 Appendix. Raw data.
(XLSX)

Acknowledgments

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Author Contributions

Conceptualization: SKW JIL.

Data curation: SKW JIL ES RB KB KP JH.

Formal analysis: SKW JIL.

Funding acquisition: SKW JIL.

Investigation: SKW ES DG RB.

Methodology: SKW JIL KA ES DG RB.

Project administration: SKW JIL ES RB.

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HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY NORTHWEST, a Washington non-profit corporation,

Plaintiff,

v.

BARRY THOM, in his official capacity as Regional Administrator of the National Marine Fisheries Service, *et al*,

Defendants.

Case No. 2:20-cv-00417-MLP

DECLARATION OF DR. ROBERT LACY, Ph.D.

I, Robert Lacy, state and declare as follows;

1. I am over eighteen years of age. I have personal knowledge of the facts contained in this declaration and am otherwise competent to testify to the matters in this declaration.

2. I received my B.A. and M.A. in Biology from Wesleyan University in 1977, where I graduated summa cum laude. I received my Ph.D. in Evolutionary Biology with minors in Genetics and Ecology from Cornell University in 1982. I serve on the faculty of the Committee on Evolutionary Biology at University of Chicago. I was a Conservation Scientist for the Chicago Zoological Society from 1985, until my recent retirement and appointment as a Conservation Scientist Emeritus. Although "retired" I still work actively with the Species

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Conservation Toolkit Initiative, a team that develops, distributes, and supports software for species risk assessments and wildlife population management.

3. My qualifications, including publications, is contained in my Curriculum Vitae, which is attached as Exhibit B to this declaration.

4. I have been retained by Wild Fish Conservancy, through its counsel, to provide expert opinions in this matter on issues related to the Southern Resident Killer Whale population and the implications of the National Marine Fisheries Service's ("NMFS") conclusions in the Biological Opinion issued with regard to the 2019 Pacific Salmon Treaty. This declaration describes my opinions and the bases therefor.

5. In addition to drawing upon my knowledge and expertise, I have reviewed the materials cited throughout this declaration and those identified in the list of cited materials attached to this declaration as Exhibit A in developing my opinions expressed herein.

6. In summary, the opinions I express herein are as follows:

a. Analyses conducted in 2015 projected that the Southern Resident Killer Whale population would decline slowly at a rate of about 0.2% per year if environmental conditions and the demographic responses to threats remained as they had been over the previous few decades. Updated analyses on the current population now project about a 1% annual decline, leading to eventual extinction of the population as demographic and genetic problems become worse with the ongoing decline in the breeding population. The numbers of Southern Resident Killer Whales increased from 1976 to a peak in 1993-1996, and has subsequently declined. The 2015 prediction of approximately zero population growth accurately reflected the lack of growth in numbers over the entire time period

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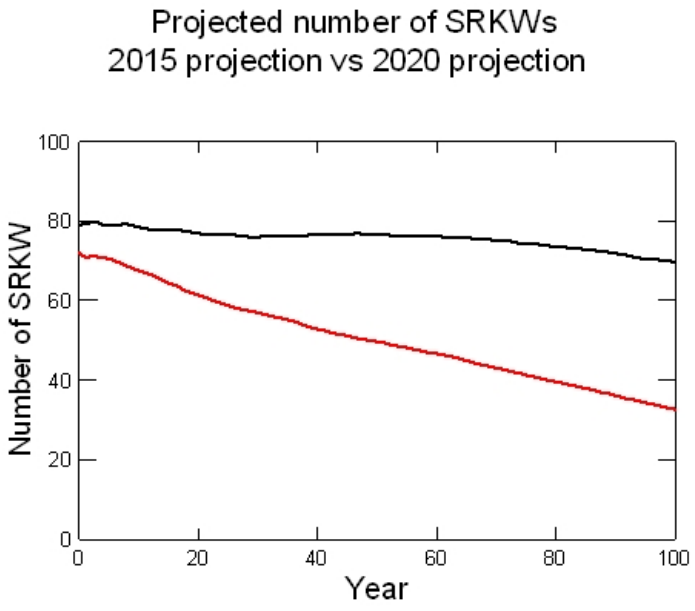
from 1976 to 2020, while the more pessimistic current prediction accurately mirrors the 1% average annual decline that has occurred since 1993. Since 2014, the Southern Resident Killer Whale population has declined at an even faster rate of about 2% per year. Although the difference between a 0.2% annual decline and a 1% annual decline might not seem large, the cumulative effect of the faster rate of decline compounds to become considerable damage across the years. The following graph shows the mean projected number of Southern Resident Killer Whales, using the data from 2015 (upper, black line) and the mean projected number using the current (2020) data (lower, red line). In 2015, we estimated a 9% probability that the population would become functionally extinct with fewer than 30 animals within the next 100 years. With updates to reflect the current situation, I now estimate a 59% probability that the population will drop below 30 animals sometime in the next 100 years, becoming functionally extinct.



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b. The abundance of Chinook prey influences the reproductive rate and the survival rates of the Southern Resident Killer Whale. Analyses indicate that prey abundance is the factor that has the largest impact on Southern Resident Killer Whale population growth or decline. Using published estimates of the effect of prey abundance on demographic rates, we calculate that Chinook total abundance available as prey to the Southern Resident Killer Whale needs to increase by about 10% over the mean levels of the last few decades for the decline of the Southern Resident Killer Whale to be halted. Recovery of the Southern Resident Killer Whale population at the rate (2.3% growth) specified for delisting in the species' Recovery Plan will require an increase in the Chinook prey abundance of about 35%.

c. The NMFS 2019 Biological Opinion ("2019 SEAK BiOp") proposes several actions aimed at increasing the number of Chinook salmon available to the Southern Resident Killer Whales. The reduction in the Southeast Alaska salmon fishery of up to 7.5% in the 2019 Pacific Salmon Treaty relative to the preceding agreement, which is described in the 2019 SEAK BiOp, results in very little change in the Chinook available to the Southern Resident Killer Whales, and therefore would not have a measurable benefit for the endangered Southern Resident Killer Whale.

d. A proposed hatchery expansion aims to increase Chinook available to the Southern Resident Killer Whales by 4-5%. That increase in prey can be estimated to reduce the annual rate of decline of the Southern Resident Killer Whale population from about 1% to about 0.5%, but this would not be sufficient to stop

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the slide toward extinction.

e. The benefits to the Southern Resident Killer Whales of other possible mitigation measures are not quantified in the 2019 SEAK BiOp, and those actions would need to amount to a further increase (above that achieved from the two above mentioned measures) of at least another 5% in the Chinook abundance available as prey to Southern Resident Killer Whales in order for me to predict that the decline of Southern Resident Killer Whales would stop.

f. More aggressive management actions would be required to start the Southern Resident Killer Whale population on a reasonably secure path toward recovery or to meet NMFS' annual population growth rate goal of 2.3%.

7. My career has focused on building the capacity of the world to be much more effective in ensuring the long-term sustainability of species. I have done this via advancing the basic science that must underlie successful programs for sustaining species; providing the accessible tools to enable others to apply the science to species assessments, conservation planning, and population management; training students and colleagues in the use of the tools; and – when necessary – doing the analyses that inform and guide conservation for individual species.

8. Over my career I have developed, freely distributed, and supported software tools for guiding species conservation and population management. My approach has always been to provide tools for powerful and flexible analyses, within user interfaces that are accessible to wildlife managers, students, and others who might not have expertise with computer languages and systems. Consequently, the tools are now used globally to guide population management in nature reserves and zoos, viability analyses and recovery planning by wildlife agencies, and

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integrated assessment of threats to species. The software is used also to teach students about population biology and conservation in many universities.

Population Viability Analysis

9. Population viability analysis (PVA) is a class of scientific techniques that uses demographic modeling to assess risks to wildlife populations and evaluate the likely efficacy of protection, recovery, or restoration options (Shaffer 1990; Boyce 1992; Burgman et al. 1993; Sjögren-Gulve and Ebenhard 2000; Beissinger and McCullough 2002; Morris and Doak 2002). (All references cited in this Declaration are listed in Exhibit A.) PVA usually starts with standard demographic analysis ("life table analysis") to make deterministic projections of the expected population growth rate from the mean birth and death rates (Ricklefs 1990; Caswell 2001). PVA then extends the standard demographic projections in two important ways: (1) the impacts of forces external to the population (e.g., changing habitat quality, extent, and configuration; interactions with other species in the community; impacts of disease or contaminants; harvest, incidental killing, or other direct human impacts) on the demographic rates are explicitly considered and evaluated, and (2) uncertainty in the population trajectory caused by intrinsic (e.g., demographic stochasticity, limitations in local mate availability or other density dependent feedbacks, inbreeding impacts) and extrinsic (e.g., environmental variation, occasional catastrophes) factors can be explicitly modeled, usually through the use of simulation modeling. The outputs of PVA include any desired measure of population performance, but commonly assessed metrics include projected mean population size (N) over time, population growth rates (r), expected annual fluctuations in both N and r, probability of population extinction, and probabilities of quasi-extinction (the likelihood of N falling below any specified number within a specific number of years). These outputs are used to assess risk (e.g., for listing under the

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Endangered Species Act or other protective regulations), assess vulnerability to possible threats, determine sustainable harvest in the context of uncertainty, and determine the suites of actions that would be needed to achieve stated resource protection or restoration goals.

10. A requirement for any PVA model to provide sufficiently accurate and robust projections to allow estimation of population performance is the availability of detailed demographic data. Model input is required from the focal population or comparable reference populations for mortality rates, aspects of reproduction (e.g., age of breeding, age of reproductive senescence, inter-birth intervals, and infant survival), population size, and habitat carrying capacity – as well as the natural fluctuations in these rates. The difficulty in obtaining sufficient demographic data on endangered or protected species is a common challenge to the usefulness of PVA models, and many practitioners consequently recommend that PVA models be used only to provide assessments of relative risk and relative value of management options, rather than absolute measures of population trajectories. In the case of the Southern Resident Killer Whale population, however, demographic data are available from studies by the Center for Whale Research and others that are unprecedented in duration and detail of data collection. This exceptional data set provides a complete census of the total abundance as well as the age and sex composition of the Southern Resident Killer Whale population from 1976 to 2020. This allows for much more accurate projections of population performance and the ability to compare predicted trajectories to the precisely documented fate of the population.

11. PVA models were developed initially for quantifying future risk to populations that are vulnerable to collapse due to a combination of threatening processes (Shaffer 1990). They were soon recognized to be more reliable for assessing relative risk than absolute probabilities of decline or extinction (Beissinger and McCullough 2002; but see Brook et al.

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2000 for evidence that even absolute predictions of population trends can be accurate), and have become most useful in the identification of conservation actions that are most likely to achieve conservation goals (Sjögren-Gulve and Ebenhard 2000). The same methods can be used to quantify injury caused by an externally imposed stress, by comparing measures of population performance in the presence vs. absence of the stress, and to determine what actions would be needed to reverse the impact, restore the population to pre-injury health, and compensate for interim losses. The PVA forecasts can then be used to set the targets for expected performance under proposed restoration plans.

12. The Vortex PVA model that I developed (Lacy and Pollak 2020) is what is known as an individual-based model that projects the fate of each individual in a population. It simulates the effects of both deterministic forces and demographic, environmental and genetic stochastic (or random) events on wildlife populations. Vortex models population dynamics as sequential events that are determined for each individual in a population with probabilities determined from user-specified distributions. Vortex simulates a population by stepping through a series of events that describe an annual cycle of a sexually reproducing organism: mate selection, reproduction, mortality, dispersal, incrementing of age by one year, any managed removals from, or supplementation to, the populations, and limitation of the total population size (habitat "carrying capacity"). The simulations are iterated to generate the distribution of fates that the population might experience. Vortex tracks the sex, age, and parentage of each individual in the population as demographic events (birth, sex determination, mating, dispersal, and death) are simulated. A detailed description of the program structure is provided in Lacy (1993; 2000) and details about the use of Vortex are provided in the manual (Lacy et al. 2020).

13. The Vortex PVA modeling software is well-suited for the analyses of threats to

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the Southern Resident Killer Whale population, as Vortex is the most widely used, tested, and validated individual-based PVA model, and it is publicly accessible so that anyone can re-examine and repeat published analyses. It is highly flexible in allowing all input demographic parameters to be specified optionally as functions of external forces or as rates that change over time. Vortex has been used for modeling population dynamics of various marine mammal species (including bottlenose dolphins, Indo-Pacific bottlenose dolphins, baiji, manatees, dugongs, Hawaiian monk seals, and Mediterranean monk seals), as well as thousands of other species. Vortex has been shown to produce projections that accurately forecast dynamics of well-studied populations (Brook et al. 2000). Both NMFS in its 2019 SEAK BiOp (e.g., pp. 86, 90, 311) and Fisheries and Oceans Canada (Murray et al. 2019, e.g., pp. 3-5, 30, 33, 44, 62) have relied on analyses completed with Vortex for assessing the status of the Southern Resident Killer Whales.

Southern Resident Killer Whales

14. In 2015, at the request of Canada's National Energy Board ("NEB"), I led a team of six scientists conducting a PVA of the risk associated with aspects of the proposed Trans Mountain Expansion Project (Project) on the endangered Southern Resident Killer Whales. In that analysis, the PVA model was used to estimate the increased risk to the Southern Resident Killer Whales from three threats associated with the marine shipping component of the Project: an oil spill, increased acoustic and physical disturbance from ships, and ship strikes. The report also examined the possible effects of decreased Chinook salmon prey base that might result from climate change or human activities, and evaluated those impacts in comparison to the more immediate threats of the proposed Project and as the environmental context within which the impacts of the Project are likely to occur. The report to NEB (Lacy et al. 2015), including

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detailed descriptions of the methods and the data used in the PVA, is publicly available at http://docs.neb-one.gc.ca/fetch.asp?language=E&ID=A4L9G2. The analyses were extended and published in a peer-reviewed scientific paper (Lacy et al. 2017). Further updating of analyses using demographic data on the population through 2018 (Lacy et al. 2018) was submitted to NEB and is available at https://apps.cer-rec.gc.ca/REGDOCS/Search?txthl=A96429-3%20A%20-%20Expert%20Report%20of%20Lacy%20et%20al%20-%202018%20-%20Final%20-%20A6L5R2.

15. As of 2015 and 2017, based on status quo conditions, we projected the Southern Resident Killer Whale population would remain about at its current size or continue a very slow decline (estimated at a mean annual decline of 0.2%). We projected a 9% chance of quasi-extinction within the next 100 years, where the population falls below 30 whales and is no longer viable.

16. I have now updated the PVA model again, using fecundity and survival rates calculated from the detailed records from 1976 through 2018 and applying those rates to the current population of 72 Southern Resident Killer Whales. The following graph shows the mean projected population size (heavier, middle line) and the uncertainty in the trajectory (upper and lower lines showing $\pm$ 1 standard deviation among independent repeated simulations of the population).

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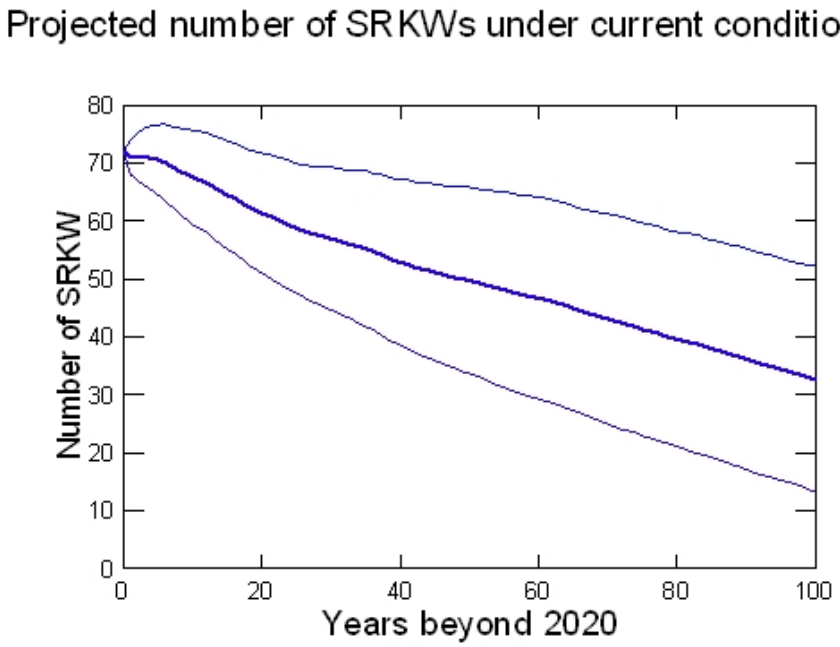

17. With current data, and if the Chinook availability remains at the mean level of the past few decades, the model projects a mean annual decline in the population of Southern Resident Killer Whales of about 1.0%. This is close to what has been occurring recently, and it compares to our 2018 projection of a smaller decline of 0.6% per year (Lacy et al. 2018). About half of difference between the 2018 and 2020 projections is due to the fact that the population is aging (with the mean age of living whales now just over 22 years, whereas it was just over 21 years in 2018), and more animals are now post-reproductive or nearing post-reproductive age. The other half of the difference is due to the fact that we now have parentage data for more of the animals, and that allows us to have more complete estimates of kinships among animals, and that in turn leads to slightly higher estimates of current and future inbreeding.

18. For our model, we obtained estimates of the impact of Chinook prey abundance on the reproductive rates and survival rates of the Southern Resident Killer Whales from published scientific reports (Ward et al. 2009; Velez-Espino et al. 2015; Ford et al. 2010). We

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scaled the numerical relationships so that the mean demographic rates observed in the Southern Resident Killer Whales from 1976 through 2015 were correctly predicted. (The details of the methodology are documented in Lacy et al. 2015 and Lacy et al. 2017 publications.) We then use these relationships to project the Southern Resident Killer Whale population trajectory in several scenarios that tested the impact of prey availability, expressed as a percent change in the annual abundance of Chinook salmon available as prey to the Southern Resident Killer Whales from the mean level over the last three decades.

19. The abundance of Chinook varies over time, and that variation in prey can be entered into the PVA model. However, as documented in the 2019 SEAK BiOp, the extent of that variation is very dependent on which stocks of Chinook are assessed, and it is not known precisely what proportion of the Southern Resident Killer Whale diet is composed of salmon from each stock. I examined the model projections with the Chinook abundance varying randomly across years around the long-term mean values being tested. I found that such an elaboration of the model had very little effect on the long-term projections for the Southern Resident Killer Whale population. This occurs because killer whales are very long-lived and slow breeders, so year to year fluctuations in demography will average out over their lifespans. Therefore, as was done in our prior PVA reports, the results from analyses presented in this declaration assume that the abundance of Chinook is at a fixed level each year and does not vary randomly around that value.

20. Also included in the model are the current estimates of both PCBs and noise disturbance, based on published estimates of the current magnitudes and effects of these threats (Hall et al. 2011; Hall and Williams 2015; Lusseau et al. 2009). These threats are part of the current environment for the Southern Resident Killer Whale, and they interact with the effect of

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prey limitation. (The documented impact of noise disturbance is via a reduction in time that the Southern Resident Killer Whales spend feeding. The primary impact of PCBs is on survival of calves, compounding the reduction in survival that occurs with low prey availability.) Only with these effects of PCB and noise disturbance in the model do we accurately predict the recent observed rate of decline of the population. However, even if these other threats were completely eliminated—which is not possible in the near term and unlikely in the long term—our modeling shows that there would not be adequate prey available to achieve the population growth goal established in the Recovery Plan for the Southern Resident Killer Whale (Lacy et al. 2017).

21. By applying the published relationships of Southern Resident Killer Whale reproductive and survival rates to Chinook abundance, and then testing the benefits to Southern Resident Killer Whales of incremental improvements in the abundance of Chinook prey, the model shows that to achieve a mean zero population growth (i.e., to stop the decline), there would need to be a sustained 10% increase (relative to the 1976-2015 average) in the mean abundance of the Chinook stocks available as prey to the Southern Resident Killer Whales.

22. The analyses conducted in 2015, 2017, and 2018 estimated that a 30% increase in Chinook could achieve the 2.3% growth called for in the Southern Resident Killer Whale Recovery Plan. With the further decline that has occurred in the population in the last few years, our analysis of the 2020 population now projects that a 30% increase in Chinook would result in about 2% growth per year, and a 35% increase in prey would be necessary to meet the recovery goal. The graph below shows the expected Southern Resident Killer Whale population growth across a range of levels of Chinook abundance. The two horizontal lines indicate zero population growth and the 2.3% growth goal of the Recovery Plan.

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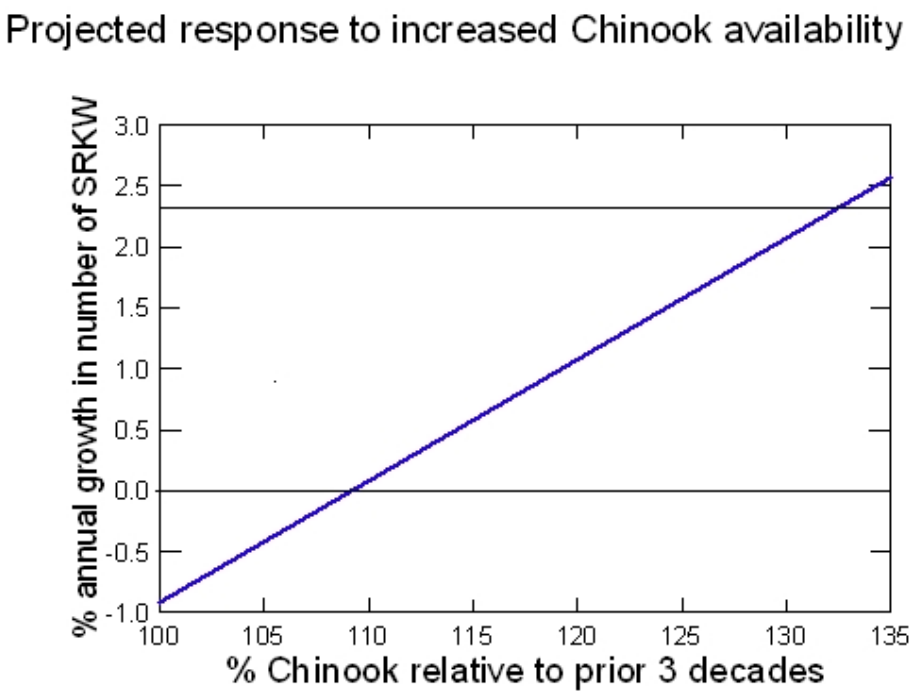

NMFS' Biological Opinion and Impact on Southern Resident Killer Whale Population

23. I was provided with NMFS' 2019 SEAK BiOp for Southeast Alaska salmon fisheries at issue in this matter. I reviewed it closely. In the 2019 SEAK BiOp, NMFS acknowledges that the Southern Resident Killer Whale population is declining, and that is at least partly and maybe mostly due to inadequate prey availability. The 2019 SEAK BiOp cites my previous work (p. 311) as evidence that the biggest threat is that lack of prey, although other factors such as noise, PCBs, oil spills, and other environmental factors all make things worse.

24. In several places, and in various ways, the 2019 SEAK BiOp estimates the reduction in prey available for Southern Resident Killer Whales caused by the Southeast Alaska fisheries (e.g., Tables 41, 42, and 97) as between 2-15% in coastal fisheries and 1-2% in inland fisheries. However, there is significant uncertainty depending on which salmon stocks and for which years the calculations are based. Importantly, the BiOp does not explain how the various percentage reductions mentioned translate to corresponding changes in the total mean abundance of Chinook that provide potential prey for Southern Resident Killer Whales, which is what is

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required for accurate projections of the benefits expected from reductions in the fisheries. The 2019 SEAK BiOp directly states (p. 94) "the impact of reduced Chinook salmon harvest on future availability of Chinook salmon to the Southern Residents is not clear."

25. The 2019 SEAK BiOp also discusses possible mitigation measures, which could increase the prey availability for Southern Resident Killer Whales. The 2019 SEAK BiOp estimates the newly negotiated 2019 Pacific Salmon Treaty will reduce the Southeast Alaska fishery annual harvest of Chinook by up to 7.5% relative to the harvest under the 2009 Treaty. A proposed increase in hatchery production mitigation seeks to provide 4 to 5% increase in prey available to the Southern Resident Killer Whales. The increase in hatchery production is not yet funded, so I would expect a delay of at least 5 to 10 years to account for allocation of funds, construction of any new facilities, increased programs of production, and then return of hatchery raised Chinook as mature adults.

26. I applied these estimates from the 2019 SEAK BiOp to the Vortex PVA model, in order to project the consequences of the possible scenarios described in the 2019 SEAK BiOp. The estimated 7.5% (maximum) reduction in the Southeast Alaska fishery, applied to a typical 6% reduction in prey available to the Southern Resident Killer Whales caused by the Southeast Alaska fishery as a whole (the 6% being an approximate middle value from the many estimates made in the BiOp), results in a less than 0.5% increase in the Southern Resident Killer Whale prey. This is only 1/20th of the 10% increase that is needed to achieve even a cessation of the decline in Southern Resident Killer Whale population.

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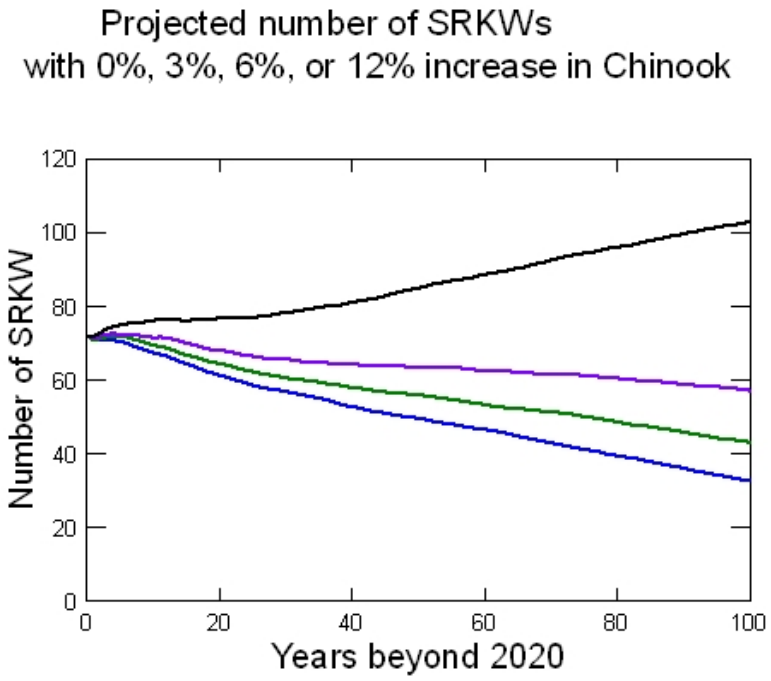
27. To estimate the possible reductions in threats to the Southern Resident Killer Whale that might be achieved with greater reductions in the Chinook fisheries, I projected a Southern Resident Killer Whale population growth with an immediate 6% increase in Chinook prey, and a 3% and a 12% increase in prey (half and double the middle estimate, covering most of the range of values reported in the 2019 SEAK BiOp for specific stocks and years). As shown in the following graph, with the existing baseline in blue (bottom line), the PVA projections for these scenarios show that the 3% increase in Chinook results in a mean 0.7% decline in Southern Resident Killer Whale population per year (green line), the 6% increase in Chinook results in a mean 0.4% decline of the Southern Resident Killer Whale population (purple line), and the 12% increase results in 0.3% positive growth annually (top, black line).



28. The impacts on Southern Resident Killer Whales of other estimates of prey increases that could be achieved by reductions in the fisheries can be extrapolated from the projections of Southern Resident Killer Whale population growth across a range of levels of Chinook abundance, as shown in the graph in paragraph 22, above.

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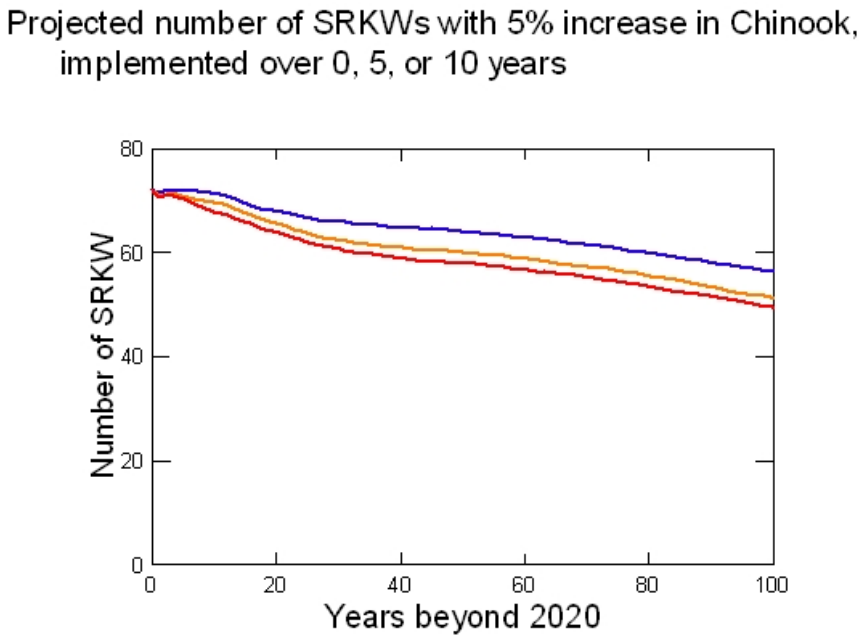
29. I projected the benefits to the Southern Residents of possible (but not yet funded) hatchery projects assuming a 5% increase in Chinook, beginning either 5 years or 10 years in the future. With either time scale for implementation and return of the hatchery-produced Chinook, the mean long-term consequence is a slowing of the decline in Southern Resident Killer Whales from 1.0% to 0.5% per year; therefore, not enough improvement to completely halt the decline. The difference between a 5-year delay and a 10-year delay in enhancement is that by year 10, the slower implementation will result in the Southern Resident Killer Whale population having declined by about 2 more whales before the improvement can begin to take effect. The following graph shows the projections if the mitigation measures achieve a 5% increase in Chinook (as estimated from the proposed hatchery expansion) instantly (top, blue line), after 5 years (middle, orange line), or after 10 years (bottom, red line). As this graph plainly demonstrates, delays in implementation of these theoretical mitigation measures have a very real and lasting impact on the Southern Resident population. Notably, it also shows that the proposed measure – even if implemented immediately – is not enough to stop the decline of Southern Residents.



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30. Combining the actions of reducing the Southeast Alaska Chinook fishery and increasing abundance to the Southern Resident Killer Whale of hatchery-raised Chinook, and possibly other mitigating actions as well (such as additional reductions in additional fisheries managed under the Pacific Salmon Treaty), could achieve the 10% increase in prey necessary for stabilization of the Southern Resident Killer Whale population or even greater increases in prey that would allow for recovery of the Southern Resident Killer Whales. Importantly, however, none of the scenarios proposed in the 2019 SEAK BiOp are projected to achieve this 10% increase in prey abundance. The analyses described above in paragraph 22 document the long-term growth in the Southern Resident Killer Whale population that could be achieved if Chinook abundance is increased by 35% above the mean levels of the last three decades.

31. Implementing mitigation measures, however, will likely require time. To examine responses of the Southern Resident Killer Whale population to delayed implementation, I tested models with increases in the prey abundance starting either 5 years or 10 years from now. The following graph shows the mean projected Southern Resident Killer Whale population size when a 10% increase in Chinook is implemented immediately (top, blue line), after 5 years (middle, orange line), or after 10 years (bottom, red line). The long-term population growth rates after implementation again show that a 10% increase in prey is needed to stop the decline of Southern Resident Killer Whales. However, before that positive result is achieved, the population will have lost 4 whales if implementation takes 5 years, or 8 whales if implementation takes 10 years, relative to the expected population size if the increase in prey were achieved immediately. With positive growth of Southern Resident Killer Whale numbers after implementation of sufficient mitigation measures, a delay in implementation results in a loss of the potential initial years of recovery, and that lack of growth for those initial years leaves the population at a deficit in

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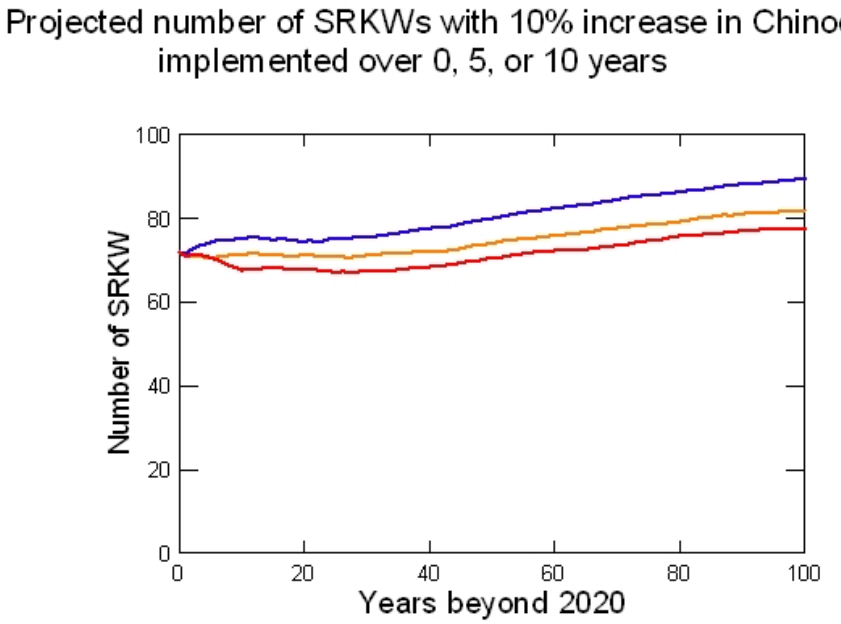
numbers throughout the subsequent recovery compared to what could have been. A 20% increase in Chinook allows for a long-term population growth of about 1% annually, but a delay of 5 or 10 years results in a loss of 8 or 16 whales before the growth begins, respectively, relative to the expected population size if growth had started in 2020.



32. In summary, although the 2019 SEAK BiOp does not provide management targets for slowing, stopping, or reversing the decline of the Southern Resident Killer Whale population, and it does not give specific estimates of the benefits to the Southern Resident Killer Whales of the proposed mitigation measures, for the above analyses I extracted from the 2019 SEAK BiOp what I could regarding the expected benefits of proposed actions. The 2019 SEAK BiOp provides various estimates of changes to Chinook stocks that might be expected from two of the mitigation measures – a reduction in the Southeast Alaska Chinook fishery as specified in the 2019 Pacific Salmon Treaty, and a proposed hatchery expansion – and it mentions other possible actions, such as habitat improvements, for which there is no quantification of expected results. Only if the additional, as yet unquantified, mitigation measures can boost Chinook abundance by

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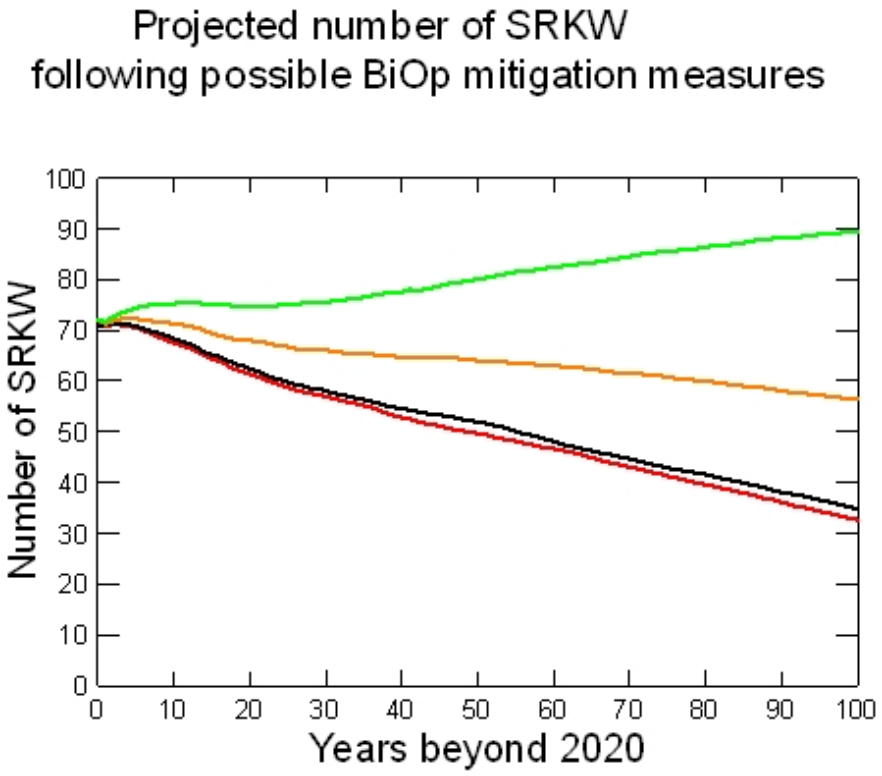
another 5%, would the combined effect of the proposed actions yield the 10% increase in Chinook that is necessary to halt the decline of the Southern Resident Killer Whales. The following graph summarizes the expected trajectory of the Southern Resident Killer Whale population if no changes are made from current conditions (bottom, red line), if a 0.5% increase in overall Chinook available to Southern Resident Killer Whales is produced by the reduced Chinook harvest in the 2019 Pacific Salmon Treaty (black line), if a 5% increase in Chinook is achieved by the hatchery mitigation (orange line), or if sufficient actions can be taken to achieve a 10% increase in Chinook (top, green line).



Conclusions

33. Based on previously published analyses, the results of updated models, my professional experience, and the information contained in the 2019 SEAK BiOp, I make the following conclusions with a reasonable degree of certainty:

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a. The Southern Resident Killer Whale population is in decline, and the projected status has deteriorated in just the past few years. The PVA models, using the latest available data on the current numbers, reproduction, and survival, project accurately the recent population changes.

b. The abundance of Chinook salmon prey available to the Southern Resident Killer Whales is a critical determinant of Southern Resident Killer Whale reproductive success and survival.

c. The mean Chinook abundance over recent years is not enough to allow reproduction by the Southern Resident Killer Whales sufficient to offset mortalities. An increase of about 10% in Chinook abundance would be required to stop the decline of Southern Resident Killer Whales, and an increase of about 35% in Chinook abundance would be required to achieve the healthy population growth rate of 2.3% that is the stated goal in the Southern Resident Killer Whale Recovery Plan.

d. The proposed mitigation measures in the 2019 SEAK BiOp have not been shown to be adequate to protect the future of the Southern Resident Killer Whale population – a short-coming that is admitted even within the 2019 SEAK BiOp. The quantitative estimates made in the 2019 SEAK BiOp would account for, at best and after full implementation, a reduction of half in the rate of decline in numbers of Southern Resident Killer Whales.

e. Full closure of the Southeast Alaska Chinook fishery, especially if combined with other mitigation measures, could result in enough prey to sustain a growing population of Southern Resident Killer Whales. Further enhancement measures

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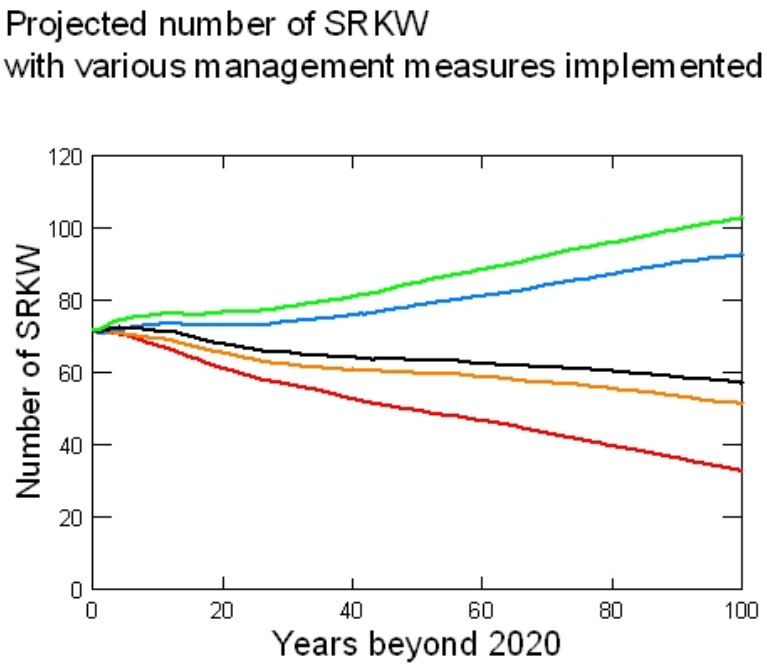
would be required to achieve the recovery goals set in the Recovery Plan for the Southern Resident Killer Whale. The last graph, below, shows projected Southern Resident Killer Whale numbers under current environmental conditions and management (bottom, red line), with the 5% increase in Chinook prey after 5 years, projected to result from the proposed hatchery enhancements (orange line), with a 6% increase in Chinook prey as might be achieved if the Southeast Alaska Chinook fishery is immediately closed (black line), with both the proposed hatchery project plus an additional 6% increase in Chinook abundance (blue line), or if a 12% increase in prey is achieved by the closure of the Southeast Alaska Chinook fishery (top, green line). The amount of increase in Chinook abundance as a result of reductions or closure of fishery harvests and other measures is uncertain, so responses of both the Chinook abundance and then the Southern Resident Killer Whale demography should be monitored closely, with adaptive management adjusting mitigation and enhancement measures as needed.



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I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and accurate.

Executed this 15th day of April, 2020.

Robert Lacy, Ph.D.

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EXHIBIT A

Exhibit A – Publications cited

Beissinger, S.R., and D.R. McCullough (eds.). 2002. Population Viability Analysis. Chicago University Press, Chicago. 577 pp.

Boyce, M.S. 1992. Population viability analysis. Annual Review of Ecology and Systematics 23:481-506.

Brook, B.W., J.J. O'Grady, A.P. Chapman, M.A. Burgman, H.R. Akcakaya, and R. Frankham. 2000. Predictive accuracy of population viability analysis in conservation biology. Nature 404:385-387.

Burgman, M., S. Ferson and H.R. Akçakaya. 1993. Risk Assessment in Conservation Biology. Chapman and Hall, New York.

Caswell, H. 2001. Matrix Population Models. 2nd ed. Sinauer, Sunderland, Mass. 722 pp.

Ford, J.K.B., G.M. Ellis, P.F. Olesiuk, and K.C. Balcomb. 2010. Linking killer whale survival and prey abundance: food limitation in the oceans' apex predator? Biology Letters 6:139-142.

Hall, A.J., L. Schwacke, B.J. McConnell, and T.K. Rowles. 2011. Assessing the population consequences of pollutant exposure to cetaceans using an individual based modelling framework. Paper SC/63/E5, International Whaling Commission, Tromsø, Norway.

Hall, A.J. and R. Williams. 2015. The potential effect of PCBs on Killer whales – using the 'SPOC' individual based pollution model approach to estimate impacts on population growth. International Whaling Commission Scientific Committee meeting document SC/66a/E/2.

Lacy, R.C. 1993. VORTEX: A computer simulation model for Population Viability Analysis. Wildlife Research 20:45-65.

Lacy, R.C. 2000. Structure of the VORTEX simulation model for population viability analysis. Ecological Bulletins 48:191-203.

Lacy, R.C., K.C. Balcomb III, L.J.N. Brent, D.P. Croft, C.W. Clark, and P.C. Paquet. 2015. Report on Population Viability Analysis model investigations of threats to the Southern Resident Killer Whale population from Trans Mountain Expansion Project. Attachment E, Ecojustice – Written

Evidence of Raincoast Conservation Foundation (A70286), National Energy Board (Canada). 120 pp. Available at http://docs.neb-one.gc.ca/fetch.asp?language=E&ID=A4L9G2.

Lacy, R. C., R. Williams, E. Ashe, Kenneth C. Balcomb III, L. J. N. Brent, C. W. Clark, D. P. Croft, D. A. Giles, M. MacDuffee, and P. C. Paquet. 2017. Evaluating anthropogenic threats to endangered killer whales to inform effective recovery plans. Scientific Reports 7(1):1-12.

Lacy, R., P. Paquet, and M. MacDuffee. 2018. Population Viability Analyses for the Southern Resident Killer Whales. ATTACHMENT A To the Evidence of Raincoast Conservation Foundation (A96429-3 A - Expert Report of Lacy at al – 2018 – Final – A6L5R2). Available at: https://apps.cer-rec.gc.ca/REGDOCS/Search?txthl=A96429-3%20A%20-%20Expert%20Report%20of%20Lacy%20et%20al%20-%202018%20-%20Final%20-%20A6L5R2

Lacy, R.C., and J.P. Pollak. 2020. VORTEX: A Stochastic Simulation of the Extinction Process. Version 10.4.0. Chicago Zoological Society, Brookfield, Illinois, USA.

Lacy, R.C., P.S. Miller, and K. Traylor-Holzer. 2020. Vortex 10 User's Manual. 1 April 2020 update. IUCN SSC Conservation Breeding Specialist Group, and Chicago Zoological Society, Apple Valley, Minnesota, USA.

Lusseau, D., D.E. Bain, R. Williams, and J.C. Smith. 2009. Vessel traffic disrupts the foraging behavior of southern resident killer whales *Orcinus orca*. Endangered Species Research 6:211-221.

Morris, W.F., and D.F. Doak. 2002. Quantitative Conservation Biology. Theory and Practice of Population Viability Analysis. Sinauer, Sunderland, Mass.

Murray, C.C., L.C. Hannah, T. Doniol-Valcroze, B. Wright, E. Stredulinsky, A. Locke and R. Lacy. 2019. Cumulative Effects Assessment for Northern and Southern Resident Killer Whale Populations in the Northeast Pacific. DFO Can. Sci. Advis. Sec. Res. Doc. 2019/056. x. + 88 p.

Ricklefs, R.E. 1990. Ecology. 3rd ed. Chiron Press, New York.

Shaffer, M.L. 1990. Population viability analysis. Conservation Biology 4:39-40.

Sjögren-Gulve, P., and T. Ebenhard (eds.). 2000. The use of population viability analysis in conservation planning. Ecological Bulletins No. 48.

Vélez-Espino, L.A., J.K.B. Ford, H.A. Araujo, G. Ellis, G., C.K. Parken, and R. Sharma. 2015. Relative importance of Chinook salmon abundance on resident killer whale population growth and viability. Aquatic Conservation 25:756-780.

Ward, E.J., E.E. Holmes, and K.C. Balcomb. 2009. Quantifying the effects of prey abundance on killer whale reproduction. Journal of Applied Ecology, 46:632-640.

EXHIBIT B

ROBERT C. LACY

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Education

B.A., summa cum laude, Biology, Wesleyan University 1977
M.A., Biology, Wesleyan University 1977
Ph.D., Evolutionary Biology (minors: Genetics, Ecology), Cornell University 1982

Positions Held

2019 to present	Senior Conservation Scientist Emeritus, Chicago Zoological Society
1985 to 2019	Senior Conservation Scientist, Chicago Zoological Society
2003 to 2011	Chairman, IUCN Species Survival Commission (SSC) Conservation Breeding Specialist Group
1992 to 1993	Chairman, Dept. of Conservation Biology, Chicago Zoological Society
1982 to 1985	Assistant Professor of Biology, Franklin & Marshall College

Academic Appointments/Graduate Advisory Committees/Postdoctoral Advisees

1985 to present	Chicago Zoological Society, Department of Conservation Biology (Supervised 5 post-doctoral research associates.)
1991 to present	University of Chicago, Lecturer, Committee on Evolutionary Biology (Served on PhD advisory committees for 8 students.)
1999 to present	University of Illinois, Chicago, Adjunct Professor, Department of Biology (Served on PhD advisory committees for 4 students.)
various	External committee member for graduate students at University of Illinois-Urbana, Univ of Maryland, Univ of Wisconsin-Milwaukee, Macquarie Univ, Univ of New South Wales, Monash Univ, South Dakota State Univ, Univ Missouri-St Louis, Univ Montana, Purdue Univ, Otago Univ

Current Research Interests

Interaction among genetic, demographic, and environmental causes of extinction
Modeling the dynamics of linked systems affecting wildlife – including population biology, epidemiology, wildlife harvest, habitat fragmentation, and changes in human populations
Genetic management of wildlife populations
Inbreeding and outbreeding depression

Teaching Experience

Franklin and Marshall College
Genetics, Vertebrate Biology, Biosocial and Environmental Problems
University of Chicago
Conservation Biology graduate seminar
Chicago Zoological Society

Lectures on evolution and conservation
Professional schools of the American Zoo and Aquarium Association
Population Management (demography and genetics sections)
Advanced Training Program in the Conservation of Biodiversity
Program coordination, lectures, and mentor for biologists from tropical countries
Escola Superior de Conservação Ambiental e Sustentabilidade (ESCAS, Brazil)
Introduction to Conservation Decision-making
Numerous other workshops on genetic analysis and population management taught to wildlife biologists, zoo managers, and conservation biologists

Professional Societies
Association of Zoos and Aquariums
American Genetic Association
Society for Conservation Biology
Society for the Study of Evolution

Professional Service
Journal advisory boards: Zoo Biology, Conservation Genetics, International Zoo Yearbook
Species Conservation Strategic Planning Task Force, chair (2005-2008), IUCN SSC
Conservation Planning Specialist Group, IUCN SSC (Chair, 2003-2011)
Recent activities include advising US Fish and Wildlife Service, state wildlife agencies, wildlife agencies of other nations (Australia, Canada, Spain, Brazil, Kenya, Indonesia, Malaysia, India, Chile, Peru, Ecuador, South Africa) and international conservation organizations on the management of Florida panther, whooping crane, Sumatran rhinoceros, lion tamarins, lion-tailed macaque, black rhinoceros, Iberian lynx, Humboldt penguin, African penguin, grizzly bear, lowland tapir, and many other species.
Member of IUCN SSC Conservation Genetics Specialist Group
Member of AZA Small Population Management Advisory Group
Advisor to AZA Field Conservation Committee
Conservation Fellow, St Louis Zoo WildCare Institute

Honors
Peirce Award for Excellence in the Sciences, Wesleyan University, 1977
Phi Beta Kappa, 1976
Sigma Xi, 1978
Outstanding Service Awards, American Zoo & Aquarium Assoc (AZA), 1988, 1989, 2001, 2011
President's Award, Chicago Zoological Society, 2007
IUCN Species Survival Commission Chair's Citation of Excellence Award, 2008
George B Rabb Award for Conservation Innovation, IUCN Species Survival Commission, 2012
Ulysses S Seal Award for Innovation in Conservation, IUCN Conservation Breeding Specialist Group, 2012
Devra Kleiman Scientific Advancement Award, AZA, 2019
EAZA Lifetime Achievement Award, 2019

Grants

Predoctoral Fellowship. NSF, 1977 - 1980

Doctoral Dissertation - Research in Population Biology. NSF, 1979 – 1981

Faculty research grants. Franklin & Marshall College, 1982 - 1985

Studies of inbreeding depression in *Peromyscus* mice. Institute of Museum Services (IMS), 1985 - 1987, $22,775

Electrophoretic analysis of zoo populations. IMS, 1986 - 1988, $24,995

Studies of outbreeding depression in *Peromyscus* mice. IMS, 1987 - 1989, $25,000

Electrophoretic analyses of endangered species. IMS, 1988 - 1990, $25,000

Chromosomal analysis of endangered species. IMS, 1989 - 1991, $101,347

Predictability of inbreeding depression in insular and mainland populations. NSF, 1991-1994, $182,683

Population Management 2000 software development. AZA Conservation Endowment Fund, 1999, $20,540

Biocomplexity: Models and meta-networks for interdisciplinary research in biodiversity risk assessment. NSF, 2000-2002, $98,000 (with P Nyhus, F Westley, P Miller, and G Ness)

An experimental test of the effects of breeding strategies used in AZA conservation programs. AZA Conservation Endowment Fund, 2001, $42,926

Experimental tests of the effects of captive breeding of wildlife. IMLS, 2002-2005, $75,000.

Pedigree reconstruction to sustain populations. IMLS, 2005-2007, $200,293 (with J. Dubach)

Meta-models as an approach to understanding biocomplexity. Private donor to Chicago Zoological Society, 2006-2010, $100,000

Linking behavioral types and animal "job performance" with population management in zoos. 2009 IMLS National Leadership Planning Grant, $22,535 (with J. Watters and D. Powell)

Incorporating mate choice into breeding recommendations. 2009 IMLS National Leadership Planning Grant, $48,997 (with C. Asa and K. Traylor-Holzer)

RCN: Using metamodels to enable transdisciplinary research for the study of dynamic biological systems under global change. NSF, 2012-2017, $490,905 (with H R Akcakaya, Stony Brook University)

LCP NRDA Dolphin Assessment, sub-contract with Industrial Economics on contract from NOAA. 2014-2015. $118,000 (co-PI with R. Wells)

Building capacity in population modeling for species conservation. Chicago Board of Trade Endangered Species Fund, 2014, $3,000

Assessing conservation strategies for the Panamanian Golden frog. Chicago Board of Trade Endangered Species Fund, 2014, $4,250

Species Conservation Toolkit Initiative, a partnership to design, develop, disseminate, and support software for species risk assessments and conservation planning. Funding from 15 institutions, 2015-2020, $800,000

Impact of allowing mate choice on reproductive success and animal welfare. Association of Zoos & Aquariums, 2016-2017, $11,280 (with L. Miller, T. Snyder, C. Asa, and C. Kozlowski)

Presentations and international workshop participation in 2015

Workshop on computer modeling of disease risk in amphibians, Smithsonian Tropical Research Institute, Panama (organizer and instructor)
Workshop on the use of epidemiological models for wildlife conservation, Auckland, New Zealand (organizer and instructor).
Workshop on the use of metamodels for species conservation assessments and planning, Sydney, Australia (organizer and instructor).
CBSG Strategic Committee, Al Ain, UAE
CBSG Annual Meeting, Al Ain, UAE
Presented paper and led session on "Species Conservation Toolkit Initiative", Association of Zoos and Aquariums (AZA).
Working session, Small Population Management Advisory Group, AZA.
Workshop on the design on ZIMS (Zoological Information Management System) R3, Minneapolis.
Workshop on the effects of plague on the dynamics of prairie dogs and black-footed ferrets, National Black-footed Ferret Conservation Center.
Training on Outbreak model of infectious disease, Chicago Zoological Society (organizer and instructor).
Training on MetaModel Manager software for integrated conservation assessments, Chicago Zoological Society (organizer and instructor).

Presentations and international workshop participation in 2016
Invited presentation on "The what, why, who, where, and when of sustainabilities", Joint TAG Chairs Meeting, World Association of Zoos and Aquariums.
Led workshop on "Computer simulations aren't just for games!" King Scholars Program, Brookfield Zoo.
Led workshop on "Integrating molecular genetic data into pedigree analyses", Chicago Zoological Society.
Invited presentation on "Using Population Viability Analysis to explore impacts of noise on cetaceans", Scientific Committee, International Whaling Commission, Bled, Slovenia.
Workshop on assessing injury to bottlenose dolphins due to PCB contamination of an estuarine system, NOAA and Georgia Dept of Natural Resources, Atlanta, Georgia.
Invited plenary presentation on "Considering human impacts – if not yet the humans – in species risk assessments", IUCN SSC Conservation Breeding Specialist Group, Puebla, Mexico.
Led workshop on "MetaModels for interacting species (multi-species PVAs and conservation planning)", IUCN SSC Conservation Breeding Specialist Group, Puebla, Mexico.
Dept of Fisheries and Oceans Canada, presentation on "Predicting responses of St. Lawrence beluga to environmental change and anthropogenic threats to orient effective recovery actions".
University of Maine – Machias, invited talk on "Building tools for wildlife conservation".

Presentations and international workshop participation in 2017
Tools for managing island populations. Presented to New Zealand Department of Conservation.
One Plan Approach: Working together for species conservation. Presented at Latin America Zoo Association (ALZPA) annual conference. Havana, Cuba

Training in advanced techniques for population modeling with Vortex. Presented at AZA Reproductive Management Center, St Louis, Missouri
Overview of Species Conservation Toolkit Initiative. IUCN SSC Conservation Planning Specialist Group annual meeting, Berlin, Germany
Outbreak software for modeling infectious disease. Presented at Disease Risk Assessment Workshop. IUCN Conservation Planning Specialist Group, Sao Paulo, Brazil

Presentations and international workshop participation in 2018
Training in advanced techniques for population modeling with Vortex. Seattle, WA
Workshop on "Using Outbreak software for modeling infectious disease in wildlife populations". Prague, Czech Republic
Synthesis workshop on "Using metamodels to enable transdisciplinary research for the study of dynamic biological systems under global change." White Oak, Florida

Presentations and international workshop participation in 2019
Population and Habitat Viability Assessment for the Humboldt penguin. Lima, Peru
Workshop projecting the possible outcomes and mitigation strategies if Ebola infects Mountain Gorilla populations. Washington, DC
Population Viability Analysis of the Florida ScrubJay. Archbold Biological Station and Kennedy Space Center, Florida
EAZA (European Association of Zoos and Aquaria) annual meeting, Valencia, Spain
Strategic Planning, IUCN SSC Conservation Planning Specialist Group, Minneapolis, Minnesota
Strategic Planning, Species Conservation Toolkit Initiative, Brookfield, Illinois

Publications
Lacy, R.C., C.B. Lynch and G.R. Lynch. 1978. Developmental and adult acclimation effects of ambient temperature on temperature regulation of mice selected for high and low levels of nest-building. Journal of Comparative Physiology B 123:185-192.
Lacy, R.C. 1978. Dynamics of t-alleles in *Mus musculus* populations: Review and speculation. The Biologist 60:41-67.
Lacy, R.C. 1979. The adaptiveness of a rare male mating advantage under heterosis. Behavior Genetics 9:51-54.
Lacy, R.C. and C.B. Lynch. 1979. Quantitative genetic analysis of temperature regulation in *Mus musculus*. I. Partitioning of variance. Genetics 91:743-753.
Lacy, R.C. 1980. The evolution of eusociality in termites: A haplodiploid analogy? American Naturalist 116:449-451.
Lacy, R.C. 1981. Taxonomic and distributional notes on some fungus-feeding North American *Drosophila* (Diptera, Drosophilidae). Entomological News 92:59-63.
Lacy, R.C. 1982. Niche breadth and abundance as determinants of genetic variation in populations of mycophagous drosophilid flies (Diptera:Drosophilidae). Evolution 36:1265-1275.
Lacy, R.C. 1983. Structure of genetic variation within and between populations of mycophagous *Drosophila*. Genetics 104:81-94.
Lacy, R.C. and P.W. Sherman. 1983. Kin recognition by phenotype matching. American

Naturalist 121:489-512.
Lacy, R.C. 1984. Ecological and genetic responses to mycophagy in Drosophilidae (Diptera). Pages 286-301 in Q. Wheeler and M. Blackwell (eds.), Fungus/Insect Relationships: Perspectives in Ecology and Evolution. Columbia University Press, New York.
Lacy, R.C. 1984. Predictability, toxicity, and trophic niche breadth in fungus-feeding Drosophilidae (Diptera). Ecological Entomology 9:43-54.
Lacy, R.C. 1984. The evolution of termite eusociality: Reply to Leinaas. American Naturalist 123:876-878.
Hayssen, V. and R.C. Lacy. 1985. Basal metabolic rates in mammals: Taxonomic differences in the allometry of BMR and body mass. Comparative Biochemistry and Physiology 81A:741-754.
Hayssen, V., R.C. Lacy and P.J. Parker. 1985. Metatherian reproduction: Transitional or transcending? American Naturalist 126:617-632.
Lacy, R.C. 1985. Evidence that group selection counters the evolution of sexual dimorphism. Evolutionary Theory 7:173-177.
Lacy, R.C. 1985. Some genetic considerations for the management of captive populations suggested by computer simulations. AAZPA 1985 Annual Proceedings, 627-630.
Lacy, R.C. and C.E. Bock. 1986. The correlation of range size and local abundance of some North American birds. Ecology 67:258-260.
Lacy, R.C. 1987. Loss of genetic diversity from managed populations: Interacting effects of drift, mutation, immigration, selection, and population subdivision. Conservation Biology 1:143-158.
Lacy, R.C. 1987. Further genetic and demographic analyses of small rhino populations. Pachyderm (Newsletter of the African Elephant and Rhino Specialist Group) No. 9, pp. 16-19.
Lacy, R.C. 1988. A report on population genetics in conservation. Conservation Biology 2:245-247.
Lacy, R.C. 1988. Genetic variability in captive stocks: Assessing past loss, present status, and future outlook. AAZPA 1988 Annual Proceedings 113-121.
Lacy, R.C., M.L. Foster, and the Primate Department Staff. 1988. Determination of pedigrees and taxa of primates by protein electrophoresis. International Zoo Yearbook 27:159-168.
Lacy, R.C. 1988. Conservation genetics at Brookfield Zoo and the Brookfield-Melbourne genetics research programme. Bulletin of Zoo Management 26:27-29.
Lacy, R.C. and T.W. Clark. 1989. Genetic variability in black-footed ferret populations: Past, present, and future. Pages 83-103 in U.S. Seal, E.T. Thorne, M.A. Bogan, and S.H. Anderson (eds.), Conservation Biology and the Black-Footed Ferret. Yale University Press, New Haven.
Lacy, R.C. 1989. How many pairs are needed on the ark? Bison 4:24-28.
Lacy, R.C. 1989. Analysis of founder representation in pedigrees: Founder equivalents and founder genome equivalents. Zoo Biology 8:111-124.
Lacy, R.C, Flesness, N.R., and Seal, U.S. 1989. Puerto Rican parrot population viability analysis. Report to the U.S. Fish and Wildlife Service. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.
Seal, U.S. and R.C. Lacy. 1989. Florida panther population viability analysis. Report to the

U.S. Fish and Wildlife Service. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.

Paine, F.L., J.D. Miller, G. Crawshaw, B. Johnson, R. Lacy, C.F. Smith III, and P.J. Tolson. 1990. Status of the Puerto Rican crested toad. International Zoo Yearbook 28:53-58.

Maguire, L.A. and R.C. Lacy. 1990. Allocating scarce resources for conservation of endangered subspecies: Partitioning zoo space for tigers. Conservation Biology 4:157-166.

Brewer, B.A., R.C. Lacy, M.L. Foster, and G. Alaks. 1990. Inbreeding depression in insular and central populations of *Peromyscus* mice. Journal of Heredity 81:257-266.

Maguire, L.A., R.C. Lacy, R.J. Begg, and T.W. Clark. 1990. An analysis of alternative strategies for recovering the eastern barred bandicoot in Victoria. Pages 147-164 in T.W. Clark and J.H. Seebeck (eds.), The Management and Conservation of Small Populations. Chicago Zoological Society, Brookfield, Illinois.

Lacy, R.C. and T.W. Clark. 1990. Population viability assessment of the eastern barred bandicoot in Victoria. Pages 131-146 in T.W. Clark and J.H. Seebeck (eds.), The Management and Conservation of Small Populations. Chicago Zoological Society.

George, G.G., J. Dixon, G. Challis, and R.C. Lacy. 1990. Taxonomy and palaeontology of the eastern barred bandicoot. Pages 33-46 in T.W. Clark and J.H. Seebeck (eds.), The Management and Conservation of Small Populations. Chicago Zoological Society.

Seal, U.S. and R.C. Lacy. 1990. Florida Key Deer (*Odocoileus virginianus clavium*) population viability assessment. Report to the U.S. Fish and Wildlife Service. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.

Lindenmayer, D.B., V.C. Thomas, R.C. Lacy, and T.W. Clark. 1991. Population Viability Analysis (PVA): The concept and its applications, with a case study of Leadbeater's Possum, *Gymnobelideus leadbeateri* McCoy. Report to the Forest and Timber Inquiry (Resource Assessment Commission), Consultancy Series No. FTC91/18, Canberra, Australia. 170 pp.

Clark, T.W., G.N. Backhouse, and R.C. Lacy. 1991. The population viability assessment workshop: A tool for threatened species management. Endangered Species Update 8:1-5.

Clark, T.W., G.N. Backhouse, and R.C. Lacy. 1991. Report of a workshop on population viability assessment as a tool for threatened species management and conservation. Australian Zoologist 27:28-35.

Lacy, R.C. 1991. Zoos and the surplus problem: An alternative solution. Zoo Biology 10:293-297.

Johnston, L.A. and R.C. Lacy. 1991. Utilization of sperm banks to maintain genetic diversity in captive populations of wild cattle. Pages 107-118 in D.L. Armstrong and T.S. Groves (eds.), Wild Cattle Symposium Proceedings. Henry Doorly Zoo, Omaha, Nebraska.

Seal, U.S., R.C. Lacy, K. Medley, R. Seal, and T.J. Foose. 1991. Tana River Primate Reserve Conservation Assessment Workshop Report. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.

Mirande, C., R. Lacy, and U. Seal. 1991. Whooping crane (*Grus americana*) conservation viability assessment workshop report. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.

Foose, T.J., R.C. Lacy, R. Brett, and U.S. Seal. 1991. Kenya black rhinoceros metapopulation workshop report. IUCN SSC Captive Breeding Specialist Group, Apple Valley,

Minnesota.
Lacy, R.C. 1992. The effects of inbreeding on isolated populations: Are minimum viable population sizes predictable? Pages 277-296 in P.L. Fiedler and S.K. Jain (eds.), Conservation Biology: The Theory and Practice of Nature Conservation, Preservation and Management. Chapman and Hall, New York.
Lacy, R.C. and T. Kreeger. 1992. VORTEX Users Manual. A stochastic simulation of the extinction process. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.
Seal, U.S., R.C. Lacy, et al. 1992. Genetic management strategies and population viability of the Florida panther (*Felis concolor coryi*). Report to the U.S. Fish and Wildlife Service. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.
Ellis, S., K. Hughes, C. Kuehler, R. Lacy, and U. Seal. 1992. `Alala, Akohekohe, and Palila Population and Habitat Viability Assessment Reports. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.
Ellis, S., C. Kuehler, R. Lacy, K. Hughes, and U. Seal. 1992. Hawai`ian forest birds conservation assessment and management plan. IUCN SSC Captive Breeding Specialist Group, Apple Valley, Minnesota.
Lacy, R.C. 1993. Impacts of inbreeding in natural and captive populations of vertebrates: Implications for conservation. Perspectives in Biology and Medicine 36:480-496.
Lacy, R.C. 1993. VORTEX: A computer simulation model for Population Viability Analysis. Wildlife Research 20:45-65.
Lacy, R.C. 1993. GENES: A computer program for the analysis of pedigrees and genetic management of populations. Chicago Zoological Society, Brookfield, Illinois.
Lacy, R.C. and T.W. Clark. 1993. Simulation modeling of American marten populations: Vulnerability to extinction. Great Basin Naturalist 53:282-292.
Lacy, R.C., A.M. Petric, and M. Warneke. 1993. Inbreeding and outbreeding depression in captive populations of wild species. Pages 352-374 in N.W. Thornhill (ed.), The Natural History of Inbreeding and Outbreeding. University of Chicago Press.
Lindenmayer, D.B., R.C. Lacy, V.C. Thomas, and T.W. Clark. 1993. Predictions of the impacts of changes in population size and environmental variability on Leadbeater's Possum, *Gymnobelideus leadbeateri* McCoy (Marsupialia: Petauridae) using Population Viability Analysis: an application of the computer program VORTEX. Wildlife Research 20:67-86.
Lindenmayer, D.B., T.W. Clark, R.C. Lacy, and V.C. Thomas. 1993. Population viability analysis as a tool in wildlife conservation policy: With reference to Australia. Environmental Management 17:745-758.
Lindenmayer, D.B. and R.C. Lacy. 1993. Using a computer simulation package for PVA to model the dynamics of sub-divided populations: An example using hypothetical meta-populations of the mountain brushtail possum. International Congress on Modelling and Simulation. Proceedings. 2:615-620.
Lacy, R.C. 1993/1994. What is Population (and Habitat) Viability Analysis? Primate Conservation 14/15:27-33.
Lacy, R.C. 1994. Review of Hartl, G.B. and Markowski, J. (eds.) Ecological genetics in mammals. Journal of Mammalogy 75:1090-1093.

Jiménez, J.A., K.A. Hughes, G. Alaks, L. Graham, and R.C. Lacy. 1994. An experimental study of inbreeding depression in a natural habitat. Science 266:271-273.

Lacy, R.C. 1994. Managing genetic diversity in captive populations of animals. Pages 63-89 in M.L. Bowles and C.J. Whelan (eds.), Restoration and Recovery of Endangered Plants and Animals. Cambridge University Press, Cambridge.

Lacy, R.C. 1995. A sibling is as valuable as an offspring: Reply to Xia. American Naturalist 145:480-482.

Lindenmayer, D.B. and R.C. Lacy. 1995. Metapopulation viability of Leadbeater's Possum, *Gymnobelideus leadbeateri*, in fragmented old-growth forests. Ecological Applications 5:164-182.

Lindenmayer, D.B. and R.C. Lacy. 1995. Metapopulation viability of arboreal marsupials in fragmented old-growth forests: comparison among species. Ecological Applications 5:183-199.

Lacy, R.C., J.D. Ballou, F. Princée, A. Starfield, and E. Thompson. 1995. Pedigree analysis. Pages 57-75 in J.D. Ballou, M. Gilpin, and T.J. Foose (eds.), Population Management for Survival & Recovery. Analytical Methods and Strategies in Small Population Conservation. Columbia University Press, New York.

Ballou, J.D. and R.C. Lacy. 1995. Identifying genetically important individuals for management of genetic diversity in pedigreed populations. Pages 76-111 in J.D. Ballou, M. Gilpin, and T.J. Foose (eds.), Population Management for Survival & Recovery. Analytical Methods and Strategies in Small Population Conservation. Columbia University Press, New York.

Johnston, L.A. and R.C. Lacy. 1995. Genome resource banking for species conservation: Selection of sperm donors. Cryobiology 32:68-77.

Lacy, R.C. 1995. Culling surplus animals for population management. Pages 187-194 in B.G. Norton, M. Hutchins, E.F. Stevens, and T.L. Maple (eds.) Ethics on the ark: Zoos, animal welfare, and wildlife conservation. Smithsonian Institution Press, Washington, DC.

Lindenmayer, D.B. and R.C. Lacy. 1995. A simulation study of the impacts of population subdivision on the mountain brushtail possum, *Trichosurus caninus* Ogilby (Phalangeridae: Marsupialia), in south-eastern Australia. I. Demographic stability and population persistence. Biological Conservation 73:119-129.

Lacy, R.C. and D.B. Lindenmayer. 1995. A simulation study of the impacts of population subdivision on the mountain brushtail possum, *Trichosurus caninus* Ogilby (Phalangeridae: Marsupialia), in south-eastern Australia. II. Loss of genetic variation within and between subpopulations. Biological Conservation 73:131-142.

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PMx: Software for demographic and genetic analysis and management of populations. (Developed jointly with J. Ballou and J.P. Pollak). Used to guide management of captive populations of more than 1000 species globally.

Vortex: Simulation of interacting genetic, demographic, and environmental causes of extinction in small, isolated populations interconnected by occasional migration. Used by conservation and wildlife biologists to assist in the analysis and management of wild populations of 100s of species in more than 70 countries.

Vortex Adaptive Manager. Software for guiding adaptive management of wildlife populations.

Outbreak: Epidemiological simulation for modeling infectious disease. (Developed with J.P. Pollak, P.S. Miller, et al.)

MetaModel Manager: Flexible modeling platform for linking simulation models representing diverse processes (such as species interactions, habitat change, climate change, disease, and social systems) to provide more holistic risk assessments for wildlife populations. (Developed with J.P. Pollak.)

HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, *et al.*, Defendants.	Case No. 2:20-cv-00417-MLP FIRST DECLARATION OF KURT BEARDSLEE

I, Kurt Beardslee, declare the following:

1. My name is Kurt Beardslee. I am a co-founder of Wild Fish Conservancy ("Conservancy") and have served as the organization's Executive Director for the last 30 years. I make this declaration based on personal knowledge. As the Executive Director, I am familiar with the membership, structure and funding of the Conservancy and am competent to testify before the Court to the matters declared herein if necessary.

2. The Conservancy is a membership-based non-profit 501(c)(3) organization formed under the laws of Washington State that is dedicated to the recovery and conservation of the region's wild fish ecosystems. Through science, education, and advocacy, the Conservancy promotes technically and socially responsible resource management to better sustain the region's

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wild fish heritage. The Conservancy is continually engaged in research and monitoring projects aimed to guide its restoration, protection, advocacy, and public education efforts, and to improve basic understanding of the natural and anthropogenic processes influencing the health of wild fish populations. The Conservancy develops and implements ecological process restoration initiatives intended to recover important ecosystem functions, to recreate dynamic and self-maintaining habitat systems, and to serve as models through the region. The Conservancy is devoted to educating members of the community about wild fish, their habitats, and the ways that humans impact native fish stocks. The Conservancy provides a variety of education resources and opportunities to increase awareness, stimulate thinking, and encourage informed decision-making. The Conservancy advocates for socially responsible and scientifically credible conservation by reviewing and commenting on policy proposals and other proposed government actions, participating in technical forums, working with resource management officials, developing information/action campaigns, and legally challenging actions when necessary. The Conservancy currently employs twenty members who carry out the organization's science, education, and advocacy programs.

3. The Conservancy regularly seeks to participate in decision-making processes related to salmonids and aquatic species in the Northwest. The Conservancy has provided detailed technical and scientific comments on numerous actions proposed by the National Marine Fisheries Service ("NMFS"), including actions related to federal funding and approval of hatchery programs and salmon harvest, and on the environmental documents prepared under the National Environmental Policy Act ("NEPA") to accompany those proposed actions.

4. One of the claims alleged in this matter challenges NMFS's failure to prepare any documents under NEPA for its issuance and adoption of the incidental take statement included

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with NMFS's 2019 Biological Opinion for salmon harvest in the federal waters of Southeast Alaska ("2019 SEAK BiOp"). The Conservancy would certainly have participated in any such NEPA or other public process provided for the 2019 SEAK BiOp and its incidental take statement. The Conservancy has studied salmon and their ecosystems, salmon hatcheries, and salmon fisheries for many years and has developed extensive expertise on these matters. The Conservancy would have used that expertise to review and evaluate NMFS's proposal and alternatives thereto. The Conservancy would then have provided NMFS with detailed scientific comments on the salmon harvests in Southeast Alaska, the impacts of those harvests on the Southern Resident Killer Whale and wild salmon populations, and the likely effectiveness and harmful impacts of NMFS's proposal to offset harvests with hatchery programs. NMFS's failure to provide a NEPA process deprived the Conservancy of the detailed scientific information required in NEPA documents and it prevented the Conservancy from providing comments to NMFS advocate on behalf of its members and on behalf of imperiled species. It is particularly disconcerting that NMFS appears to have elected to authorize the harvests in reliance on uncertain future hatchery programs without fully studying the consequences of that proposal and all reasonable alternatives thereto. NEPA requires such an analysis of alternatives.

5. The Conservancy has been a plaintiff in several lawsuits seeking to compel compliance with laws designed to protect native fish and their ecosystems. The Conservancy prosecutes these public interest lawsuits under wide array of environmental statutes, including the Endangered Species Act. The Conservancy initiates litigation only after serious consideration and exhausting other means of advocacy. The Conservancy takes its role as a citizen group enforcing public interest laws seriously and endeavors to treat the parties and the Court with the utmost respect. The Conservancy regularly and routinely does not pursue potential litigation that

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I believe would directly serve the public interest and prevent illegal environmental harm, because of our financial inability to do so.

6. The Conservancy has an average annual operating budget of approximately one million dollars, which comes from grant-funding and donations. Nearly all of this funding is restricted to specific projects, so the organization has very little discretionary funding that is generally available. The organization's funding primarily supports scientific research, restoration projects, salaries for staff members, and basic operating expenses. As a non-profit organization, the Conservancy does not earn or retain profits for itself or its members.

7. At the end of 2018 (the last year for which a Form 990 has been filed with the Internal Revenue Service), the Conservancy had assets (net of liabilities) of $154,191. The Conservancy's non-profit status, funding situation, and relatively small base of assets prevent the organization from being able to post a substantial bond in this litigation. Because the majority of the organization's funds are restricted to existing projects and staff salaries, the organization would likely be forced to lay off staff members or cease certain operations if required to post a bond in this litigation. Therefore, a substantial bond would harm the organization's ability to fulfill its mission and serve its members. Because a substantial bond requirement would pose such undue hardships, the Conservancy would not be able to pursue a preliminary injunction if such a bond was required. It would greatly reduce or prevent the Conservancy's ability to obtain adequate relief if it could not obtain the requested preliminary injunction for the reasons stated in the expert witness declarations submitted in support of the motion.

8. The imposition of a bond would have a chilling effect on the Conservancy's litigation efforts and discourage its participation in lawsuits where a preliminary injunction might

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be necessary to protect its interests. If the Conservancy is forced to bear a large financial burden, it will be discouraged from seeking to vindicate public interests through citizen suits.

9. The Conservancy has no personal or financial stake in this litigation, beyond its litigation expenses, and will not profit from this litigation in any way. The Conservancy brings this action on behalf of the public interests, including those of its members, intended to benefit by the Endangered Species Act and the National Environmental Policy Act. The Conservancy would not be able to enforce these interests through citizen suit actions as envisioned by Congress if it was required to post a substantial bond each time it sought a preliminary injunction.

10. William (Bill) McMillan is currently a member of the Conservancy and has been since long before 2000, which is as far back as we maintain membership records. In fact, Mr. McMillan has been a member since he helped found the organization in 1989.

11. Pete Soverel is currently a member of the Conservancy and has been a member continuously since long before 2000, which is as far back as we maintain membership records.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed this 14 day of April 2020 at Duvall, Washington.

Kurt Beardslee
Executive Director
Wild Fish Conservancy

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HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, *et al.*, Defendants.	Case No. 2:20-cv-00417-MLP FIRST DECLARATION OF WILLIAM JOHN MCMILLAN

I, William John McMillan, declare the following on the basis of personal knowledge to which I am competent to testify:

1. I have lived in at 40104 Savage Road in Concrete, Washington since 1998. Prior to 1998, I lived in Duvall, Washington from 1996 to 1998. I spent the remainder of my adult life in the Washougal, Washington area.

2. I am a founding member of Wild Fish Conservancy, previously known as Washington Trout. I helped found Wild Fish Conservancy to fill a void created by a lack of groups focused on wild fish issues in Washington. I have been and still am a member of the organization since 1989 and I make regularly financial donations to support the organization's

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efforts. I was employed by Wild Fish Conservancy as a field biologist between November 1996 and 2007, when I retired. I continue to volunteer for the organization by performing spawning surveys, sampling fish carcasses, and assessing habitat changes, among other field activities.

3. I live on the Skagit River, the largest native salmon bearing stream in Puget Sound. All of the streams in the Puget Sound ecosystem are in hard times right now, with fish not returning and populations dwindling. Compared to most of the streams, the Skagit provides significant remaining areas of healthy habitat for salmon, making it critically important for keeping up fish populations, including Puget Sound Chinook, steelhead, and bull trout populations.

4. I use and enjoy the Puget Sound ecosystem almost daily, through spawning surveys and documenting my results in reports, walking along the streams, photographing the ecosystem and fish, and fishing. I am an avid fisherman. I fish the Skagit 75–100 days per year—virtually every day that conditions are good and the river is open for fishing—and I have fished a number of other rivers in the Puget Sound ecosystem. I fish both because I want to try and keep contact with wild fish to determine whether things are changing for the better or worse and because I get spiritual enjoyment from connecting with nature while fishing.

5. My son lives on the Elwha River, and I go up there and walk through, enjoy, and observe that ecosystem as it recovers following dam removal. The Elwha used to have some very large Chinooks return, sometimes 90 or more pounds. The never return at that size any more.

6. One part of my life in Puget Sound remains unfulfilled: I have never seen a Southern Resident killer whale. I have created opportunities to do so, such as by sitting on the deck of ferries in Puget Sound, one of the ideal spots for viewing orcas, but have never had any

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success. I fear I may never see a Southern Resident killer whale despite my best efforts. If their populations increased, my chance of seeing one would increase.

7. I will continue to enjoy the Puget Sound ecosystem for the rest of my life. I intend to remain in my house along the Skagit for the rest of my life, and as long as I can walk, I will fish the Skagit. I also intend to continue fishing and enjoying the ecosystem of other rivers in the Puget Sound regularly, and I will continue doing the fish surveys and supplementing my reports with the data I gather.

8. While I continue to use the Puget Sound ecosystem, I am deeply concerned about the harm commercial troll and sport fisheries in Southeast Alaska are having and will continue to have on the Puget Sound ecosystem, particularly on Southern Resident killer whales and wild salmon, including those with numbers so depleted that they are listed under the Endangered Species Act ("ESA"), such as Puget Sound Chinook salmon, and Lower Columbia River Chinook salmon, and Willamette River Chinook salmon. These fisheries over harvest, depleting wild salmon populations and depriving Southern Resident killer whales of their primary food source. I am concerned that the National Marine Fisheries Service ("NMFS" or "NOAA Fisheries") is neglecting its duties to protect these species under the ESA, instead delegating its authority to manage the fisheries without ensuring their protection. I am also concerned that NMFS is neglecting its duties under the National Environmental Policy Act ("NEPA") to fully evaluate its decisions related to the fisheries. I am concerned that, without gathering the requisite information under NEPA and the ESA, NMFS cannot possibly make informed decisions to ensure protection of Southern Residents and ESA-listed salmonids that are harmed by the fisheries. I understand that, rather than making an informed decision, NMFS is relying on hypothetical future mitigation measures to offset current adverse effects on Southern Residents

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and ESA-listed Chinook, and I am concerned that there will be no need for future mitigation if we do not protect Southern Residents and ESA-listed salmonids now. As I discuss below, all of these effects and my concerns related to them in turn affect my scientific and recreational use and spiritual and aesthetic enjoyment of the Puget Sound ecosystem and they impact my ability to continue using the Puget Sound ecosystem as I have in the past. I believe my concerns and the harm from NMFS's actions would—at least in part—be remedied if NMFS, the Department of Commerce, and their officials were made to comply with ESA and NEPA before they take actions that could adversely affect ESA-listed species.

9. Today, I am primarily a fly fisher, but my love of fishing stems from learning how to bait fish as a child. My father taught me how to fish, and I taught my son, daughter, and grandchildren how to fish. Fishing is an important part of my family history.

10. I was born in Oregon City, on the Willamette River. Chinook salmon were a huge part of our life there. My uncle, Edward, lived life-long on the Willamette River. I can still remember when he won the Willamette Fall Fishing Derby in about 1950 by catching a 42 pound wild spring Chinook salmon. There are none of that size anymore, with the common maximum about 30 pounds today, and most far smaller. Historically, a 1921 U.S. Fish Commission report indicated that the average sport caught spring Chinook at Willamette Falls was 25 pounds with those 50 pounds or more not uncommon. This is an example of the increasingly small size of Chinook that has occurred over time making it more difficult for orcas to survive. The returning Chinook are ever fewer, and ever smaller.

11. I grew up close to the Washougal River, which flows into the Columbia River. Chinook returns in the mid-1950s were already greatly depleted, but they still had a small wild run. When I was 11 or 12, I went fishing in the Washougal River with my dad. He hooked a very

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large 40 pound wild Chinook while we were steelhead fishing. We were so excited about it as it played out for nearly an hour. All of a sudden, the hook pulled out, and he lost the fish. It remains a great memory because it was so rare to see a Chinook like that in the Washougal.

12. The first anadromous fish I caught was in 1956 in the Camas Slough, a side channel of the Columbia River where the Washougal River enters. It was a 21-inch wild Chinook.

13. As soon as I was able to drive a car, I sought out opportunities to fish for wild species wherever I could afford to go. I fish for many species of wild fish, including bull trout, cut throat trout, winter and summer steelhead, Chinook salmon, coho salmon, pink salmon, chum salmon, and sockeye salmon. While I greatly enjoy fishing for a diverse array of wild fish, I feel that Chinook salmon are part of my spiritual identity, and the identity of my family. I was born and raised on the Willamette and Columbia River systems, with the Columbia noted as historically having the greatest runs of Chinook salmon anywhere in the world, and then I moved to the Puget Sound area, so 100% of my life has been bound by the presence of Chinook salmon.

14. When I first moved to my current house in 1998, we were busy moving, and I did not have as much time to fish. But I was excited to live right on the Skagit River because I knew the river historically had good populations of Chinook and other salmon. As a boy I used to read that it was not uncommon for a 50 to 60 pound Chinook to win the Hope Island fishing derby off the mouth of the Skagit in the 1940s and 1950s, whereas those populations were depleted in the Washougal River where I fished a lot as a kid and young adult. I knew the populations had suffered since the 1950s, but I hoped there would still be a good run. And sure enough, the first fish I hooked in the Skagit was a very large 30 to 35 pound, beautiful wild Chinook, which I carefully released. Since that time, I feel guilty even hooking one in their comparative rarity and

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diminishing numbers that orcas require to be sustained.

15. I keep and eat the fish I catch whenever I can do so without causing damage to wild fish stocks. Accordingly, I no longer keep wild salmon or steelhead with most now protected from harvest when fishing in rivers due to ESA listings. However, I very much enjoy eating wild fish and wish their recovery could eventually allow me to do so.

16. In 1972 I began writing about fishing. I began journal-writing as a hobby and later had articles published as a freelance writer. I have had over 50 articles published in magazines and books about fishing and conservation, including articles about fishing the Columbia River, Puget Sound, and Olympic National Park streams. I co-authored a book in 2012 with my son published with the title *May the Rivers Never Sleep* about wild fish conservation, and the importance of the return of anadromous fish to river systems. *May the Rivers Never Sleep* also discusses watching wild fish as an alternative to angling, something that is increasingly necessary due to dwindling wild fish populations. As fish populations continue to decline, I find that I prefer to watch wild fish in some Puget Sound rivers as an alternative to angling. Spending time in the Puget Sound ecosystem observing the wildlife is of great spiritual and learning significance to me, but I do wish I could angle more frequently.

17. I also enjoy photographing native fish habitats throughout the Puget Sound ecosystem, including in the Nooksack, Samish, Skagit, Stillaguamish, Snohomish, Cedar/Lake Washington, Duwamish, Dungeness, Morse Creek, and Elwha basins, all of which I have walked, surveyed, and/or photographed since moving to the Puget Sound area. My photographs have appeared on several magazine and book covers. I enjoy photographing nature because I love things that are visibly attractive. Wild fish are creatures of beauty and perfection as determined by the rigors of natural selection. As wild fish populations continue to diminish, I

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have fewer opportunities to photograph wild fish, which lessens my enjoyment of this activity.

18. In addition to fishing and photography, I absolutely enjoy walking the tributaries of the Skagit River in spawning season and documenting wild fish spawning numbers as related above. I have done and continue to do spawning surveys along nine Skagit Basin tributaries and one Elwha tributary in the Puget Sound ecosystem. To do these spawning surveys, I spend an average of 150 to 200 days per year walking along the creeks and collecting data about spawning populations. I share the surveys with management agencies, tribes, and conservation interest groups. I have produced five reports, varying in length from 40 to 250 pages, related to the survey data, and I keep these reports on file on an Academia website so people can access them.

19. Based on my surveys, I have documented reasonably good numbers of Chinook in some years at Finney Creek, a tributary to the Skagit River, with 30 to 50 wild Chinook reds in it, which is exciting. However, their spawning at the other streams is less common and declining. My way to keep in touch with Chinook in the Skagit basin is now through spawning surveys. And while I wish I could fish for Chinook in the Skagit, I still enjoy connecting with wild ESA-listed species through the surveys, particularly when the numbers are promising.

20. I have also done a great deal of historical research on ESA-listed salmonids in Puget Sound and throughout the Pacific Coast, including funding from NOAA Fisheries to do so in 2008. I have provided reports to federal and state agencies, including NOAA Fisheries, to address problems relating to fish mortality in the Puget Sound ecosystem. For example, in 2006, I was asked to provide a presentation to the NOAA Biological Review Team during their considerations for Puget Sound steelhead for listing under the ESA due to my familiarity with wild steelhead history in Washington, Puget Sound, and as distant as the Russian Kamchatka Peninsula and Alaska. In 2008, I was invited by the NOAA Puget Sound Steelhead Technical

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Review Team to accompany them on a tour of the Stillaguamish River and Sauk River (tributary of the Skagit River), and I provided them with a report relating to the loss of early run timing for winter-run steelhead. Since then I have regularly done volunteer steelhead and salmon spawning surveys on numerous tributary creeks in the Skagit River basin with regular reports to Skagit Basin interests, including Washington Department of Fish and Wildlife personnel, members of the NOAA Technical Review Team for Puget Sound Steelhead, personnel from Skagit River System Cooperative Tribes, biologists from Seattle City Light, and varied fish conservation group leaders, employees, and/or members. These reports have included tables and sometimes photographs of the findings sent to this list of recipients regarding the species of fish found, when they spawn, how many spawn, where they spawn, and the presence or absence of hatchery or farmed fish among the spawning populations.

21. While I can connect to ESA-listed salmonids through surveys, walking the rivers, and sometimes fishing, I have never been able to connect with Southern Resident killer whales, despite my best efforts. I regularly take the ferries in Puget Sound because my son lives in Port Angeles and my daughter lives in Victoria. On these trips, I almost always try to see an orca by sitting on viewing deck. Seeing just one killer whale would be a highlight of my life. I will continue trying to see an orca on these trips, but I am not optimistic about my chances unless their populations increase. I believe that, for their populations to increase, they need more and bigger Chinook, which means the Southeast Alaska commercial troll and sport fisheries must stop harvesting so many ESA-listed Chinook. For Chinook to reach the particularly large sizes that orcas require for the most caloric intake with the least feeding effort, the Chinook have to commonly live to ages 4 to 7 years, as was far more common historically than today. Ocean harvest pressures today, particularly in the Southeast Alaska area where many Columbia,

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Willamette, and Puget Sound Chinook make their migrations, make it unlikely that very many Chinook reach these older ages, and therefore larger sizes, that Southern Residents require to better sustain themselves.

22. My pursuits in protecting and enjoying the Puget Sound ecosystem and wild native fish are substantially diminished by the effects from NMFS's mismanagement of the commercial troll and sport fisheries in Southeast Alaska. We are already suffering from river closures throughout the basin because threatened and endangered fish populations are so low, due to pollution, warming streams, and other harms, and this will only be exacerbated by the continued unlawful harvest at those fisheries.

23. I understand that, in this lawsuit, Wild Fish Conservancy alleges that NMFS, the Department of Commerce, and NMFS and Department of Commerce officials violated and are violating the ESA and NEPA for their actions related to and evaluations of the Southeast Alaska commercial troll and sport fisheries. While I am generally concerned by their failure to gather all necessary information and science and to let that science inform their decisions, one of my biggest concerns with this is that they are planning future, hypothetical mitigation to offset current, real impacts to ESA-listed species. This concerns me because some of the ESA-listed species, such as the Southern Residents, are on the brink of extinction now, and I am concerned that they do not have time to wait for future mitigation. I am concerned about their violations and the effects they have on wild native fish, ESA-listed species, the Puget Sound ecosystem, and the public, all of which in turn impacts my interests and activities now and in the future.

24. While being mindful and respectful of the recovery of depressed fish populations and the adverse effects from the Southeast Alaska fisheries on the Puget Sound ecosystem, I will continue fishing, engaging in spiritual observation, photographing, surveying, and researching in

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the area almost daily for the rest of my life. While I will continue to enjoy the ecosystem regularly, my enjoyment would be improved if ESA-listed species' populations increased, and if I did not have to worry about their recovery while I try to engage with the species in their ecosystem. My enjoyment would be improved if I knew NMFS was fully complying with the law, considering all the necessary science, and making the best decisions for ESA-listed species.

25. I am very concerned that NMFS has not complied and is not complying with the ESA and NEPA. The concerns from the adverse effects of the Southeast Alaska fisheries diminish the enjoyment I get from fishing, walking along rivers, surveying and documenting spawning, and photographing throughout the Puget Sound ecosystem. The concerns also diminish my enjoyment of orca viewing from Puget Sound ferries, because it makes me think of why I have never seen an orca, which is because they are starving to death from lack of adequate food. My concerns would be remedied by a court order requiring NMFS to comply with the ESA and NEPA. I would certainly feel a lot better if NMFS consulted again to do a better job, considered the best available science, and actually required mitigation measures that would mitigate the impacts to ESA-listed species. I am very distrustful of how ESA enforcement has progressed for Chinook and Southern Residents, but compliance with more stringent measures would be welcome. Any reduction in harvest would be a step in the right direction toward recovery. If NMFS lives up to its obligations under the law, I would get greater enjoyment out of my activities in the Puget Sound ecosystem.

I declare under penalty of perjury that the foregoing declaration is true and correct.

Executed this 30th day of March 2020.

William John McMillan

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HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, *et al.*, Defendants.	Case No. 2:20-cv-00417-MLP FIRST DECLARATION OF PETER W. SOVEREL

I, Peter W. Soverel, declare the following on the basis of personal knowledge to which I am competent to testify:

1. I have lived in Washington State since December 1968. I have resided at 16430 72nd Avenue W., Edmonds, WA 98026 since November 1987.

2. I am currently a member of Wild Fish Conservancy and have been a member since the beginning of the organization and its predecessor, Washington Trout, nearly 30 years ago. I am a member because I believe that the organization is a leading light in Washington State for promoting policies and practices that conserve and restore wild steelhead stocks and other marine animals throughout the Pacific Northwest. I support the efforts of the organization

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through direct financial contributions and by serving as a standing declarant in the organization's lawsuits. I also work closely and collaborate with Wild Fish Conservancy in my professional capacity as President and CEO of Conservation Angler, a non-profit watch-dog organization that seeks to hold public agencies, countries, and nations accountable for protecting and conserving wild fish for present and future generations.

3. I have been interested and engaged with the Puget Sound ecosystem for 50 years. I enjoy fishing throughout Puget Sound for native fish, including Puget Sound Chinook, Hood Canal summer-run chum, and Puget Sound steelhead, all of which are listed under the Endangered Species Act ("ESA"); observing sea life, including the Southern Resident killer whales and other wildlife that depend on Chinook; and working to protect and restore wild fish populations in the Pacific Northwest. I moved to Washington in 1968 to be near wild salmon, and I have been near wild salmon in the Puget Sound area ever since. I have fished all around the Puget Sound basin, including the Green River, Sammamish, Snohomish, Skykomish, Snoqualmie Stillaguamish, Skagit, Nooksack, Nisqually Rivers, to name a few. I fish in Puget Sound rivers roughly 50 to 60 days per year, and I will continue fishing in Puget Sound rivers regularly for as long as I am able to do so. I observe wildlife in the Puget Sound daily, and I will continue to do so for as long as I am able. I have also fished for salmon, including Chinook, in the Columbia River and its tributaries and on the Washington coast, and I intend to do so in the future if I can lawfully do so without harming their recovery.

4. I will engage in the Puget Sound ecosystem for years to come, but I am gravely concerned about the Puget Sound ecosystem and the survival and recovery of salmon and Southern Resident killer whales, upon which my recreation and livelihood depend. I have personally witnessed the significant decline in wild salmon and orca populations over the years,

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and I believe that decline is, in part, caused by the troll and sport salmon fisheries in Southeast Alaska. I am concerned that those fisheries over-harvest and hinder the survival and recovery of ESA-listed species. I am concerned that the National Marine Fisheries Service ("NMFS") has continued to fund the fisheries and has not restricted harvest, instead continuing to let Alaska operate the fisheries at an unsustainable level. I find it particularly disconcerting that, instead of reducing commercial harvests to protected imperiled species, NMFS relies on hypothetical and ill-advised increases in hatchery production to feed killer whales. I am concerned that NMFS has not adequately analyzed the impacts to ESA-listed species under the ESA or under the National Environmental Policy Act ("NEPA"). Without a complete analysis, NMFS cannot possibly make the best decision for ESA-listed salmonids and Southern Resident killer whales. My concerns significantly decrease my enjoyment of the Puget Sound ecosystem and ESA-listed species. If NMFS were made to consult again under the ESA to fully vet the impacts of the Southeast Alaska fisheries on ESA-listed species, and were made to prepare a proper NEPA analysis, conditions for ESA-listed species would improve and would remedy the harm to the Puget Sound ecosystem and to me personally.

5. My recreational and professional interests in wild salmon and the Puget Sound have been steady over the past 50 years, and I enjoy all wild salmon, including ESA-listed Chinook. Wild salmon are amazing creatures and one of God's great inventions. Salmon are born in inland waters and migrate thousands of miles. Some swim all the way to Japan. Others spawn at four- or five-thousand feet above sea level. The loss of my opportunities to see and angle for wild ESA-listed salmon in the Puget Sound is a serious loss for me.

6. I moved to Washington State in December 1968 specifically to engage with the wild fish populations. My mother sent my photos of wild steelhead while I was on a 13-month

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combat tour with the U.S. Navy in the Mekong Delta, Vietnam. The Navy was sending me to graduate school and I had a choice of Tufts University (Boston), Georgetown University (Washington DC), or the University of Washington (Seattle). All are fine universities, but only the University of Washington provided the prospect of regular interactions with wild fish. I have been a serious wild steelhead angler and angler of other fish since that time. And although I have fished my entire life and experienced angling around the globe from Yugoslavia to western Russia, Norway, Sweden, Austria, German, Belgium, UK, eastern Canada, the Bahamas, Argentina, Chile, Mexico, Panama, New Zealand and Kamchatka Russia, I am, first and foremost, a Washington fly fisher. I have fished the rivers of the Puget Sound basin hundreds of times over the past 50 years for salmon. They are my "home" rivers, but my ability to fish and enjoy them is hindered by the continual population decline of wild ESA-listed salmon. I am restricted from my primary source of recreation and relaxation and the opportunity to interact with the object of my affections.

7. Because there are so few Puget Sound Chinook left, I have not had as many experiences with them over the past few years in my "home" rivers. I used to be able to have prime fishing opportunities for Chinook and steelhead in Puget Sound rivers throughout the month of March. But now many of my home rivers have populations so depleted that they are usually closed for fishing Puget Sound Chinook. Others are open for short spring fishing seasons, usually in May.

8. Because I can no longer fish for Chinook and steelhead in Puget Sound rivers in March, for the past few years I have been going to British Columbia for March and April to fish for Chinook and steelhead on the Skeena River. I went to the Skeena for fishing in March and April 2019, as well as August 2019. I had that trip scheduled for this March and April, but I had

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to cancel because of the coronavirus pandemic. I will likely schedule that trip again for next March and April because I anticipate Chinook and steelhead populations in Puget Sound will remain dismal. I would love to stay in Washington in March and April and fish for wild Chinook and steelhead if there were enough fish.

9. While I continue to fish in Puget Sound rivers 50-60 times a year, I have not caught a wild Chinook for several years. In fact, I would feel guilty for catching and killing one because their populations are so low that it could harm their recovery. I wish I could feel comfortable catching Chinook in the Puget Sound rivers.

10. In addition to traveling throughout the Puget Sound and Canada to enjoy Puget Sound Chinook and other salmonids, I get to enjoy the ecosystem created by these precious creatures from the comfort of my own home. I live on a bluff above Puget Sound. From the window of my house, I enjoy watching Southern Resident killer whales and many other species that live in the Sound. When I see a Southern Resident killer whale from my house, it is always the highlight of my day. Many of the animals I view, like the resident orcas, depend on salmon, so threats to wild ESA-listed salmon threaten my enjoyment of wildlife viewing from my house. At the bottom of my bluff, I can go fishing at Meadowdale Park. During these fishing trips, which I enjoy two to three times per month, I catch an array of salmon, and I wish I did not have to worry about the harm I could cause by catching the precious few remaining Chinook.

11. Every year in June, I travel to the San Juan Islands with my wife on our anniversary. One of the highlights of our annual trips is driving to the west side of the island to watch for Southern Residents, have a glass of wine, and enjoy a picnic. We pretty much always see orcas on these trips, including in June 2019. We will take this trip annually for years to come,

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as long as we remain able to do so. I fear there may be a time in the near future when we will no longer see the orcas on our trips, and that would devastate us.

12. I will continue recreating and enjoying ESA-listed species, including Puget Sound Chinook and Southern Residents, in whatever ways I can given their population decline. I will continue observing wildlife from my house, taking trips to the San Juans, and fishing throughout Puget Sound many times each year. If Chinook and Southern Resident populations recovered, I could enjoy them more. If Chinook populations recovered, I could stay in Washington in March and fish in my home rivers.

13. Not only is my recreation centered around wild salmon in Puget Sound, but since retiring in 1990 after a thirty-year career in the Navy, I have devoted my professional life to preserving and conserving wild salmon. In 1992, I founded the Wild Salmon Center, the largest international salmon conservation group around the Pacific Rim working to protect wild salmon around the Pacific Rim. I am also the founder of Wild Salmon Rivers, another non-profit organization devoted to wild salmon, and I was the chairmen of the Steelhead Committee of the Federation of Fly Fishers for approximately 10 years. Additionally, I was:

- Board member, Steelhead Society of British Columbian 1990-2000;
- Board member Habitat Conservation Corporation 1995-2000;
- Member, Washington delegation to the North Pacific Anadromous Fish Commission 1993-2005;
- Founding Board member Save our *Wild* Salmon;
- Founder, Wild Steelhead & Biodiversity Foundation (Kamchatka Russia);
- Publisher of *The Osprey: Journal of Steelhead Conservation* 1990-2000; and
- Editorial Board member of *The Osprey: Journal of Steelhead Conservation*.

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I have received numerous awards for my conservation work including conservationist of the year Federation of Fly Fishers (1993) and Conservationist of the Year, Steelhead Society of British Columbia (2001). As a professional conservationist, I am exceedingly distressed by the rapid decline in ESA-listed salmonids and the huge loss in angling opportunity for Washington State.

14. I have observed the significant population decline of wild salmon over the years. Puget Sound is an enormous body of water with a couple hundred streams and rivers of various sizes. When I first moved to Washington, these rivers used to be full of fish, and many rivers and creeks were open 12 months per year. The rivers of the Puget Sound Basin make up a very diverse collection of rivers and streams that offer a wide variety of angling opportunities. Additionally, given their different characteristics, they respond differently to weather events rising and dropping at very different rates in response to winter storms and then dry periods between storms. Angling is typically best when rivers just come into "shape"—that is the rivers are dropping in level and clearing. When the river flows are higher, typically the river is not suitable for angling. Similarly, when the rivers have dropped substantially, they become low, clear and cold—again less than idea angling conditions. A knowledgeable angler can select from a large suite of Puget Sound rivers to pick the ones that are, at that moment, suitable for angling. When I first moved here, I was able to pick from the rivers for the best angling opportunities throughout the entire year.

15. As I indicated above, I have stopped fishing in many of these rivers due to the decline of wild stocks and the resulting closures of fishing opportunities during times that I want to fish. In areas where I do fish, I am less able to enjoy fishing as a result of reduced angling opportunity. Even in those areas that remain open to angling, my recreation is reduced because of the uncertainty about the impact of my angling on the depressed ESA-listed salmonid

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population. Virtually all Puget Sound rivers close for portions of the year, dramatically restricting my opportunities to fish and reducing the complexity and diversity of rivers for me to choose from throughout the year. Given that I moved to Washington for the purpose of interacting with wild salmonids, the loss of opportunities for fishing and the reduction of my enjoyment of fishing is a serious loss for me. I am concerned that, if we do not change our ways to better protect ESA-listed salmonids, they will soon be extinct.

16. It is my understanding that Wild Fish Conservancy's complaint in this lawsuit alleges numerous violations against the NMFS, U.S. Department of Commerce, and some of those agencies' officials related to their failure to comply with the ESA and NEPA for NMFS' ongoing management over, and delegation of authority to, the State of Alaska for commercial troll and sport salmon fisheries in Southeast Alaska. I am greatly concerned about the effects of those fisheries on ESA-listed salmonids and Southern Residents and about NMFS's failure to fully and adequately evaluate such effects under the ESA and NEPA. I am particularly concerned about NMFS's assumption that new hatchery production will offset harm from the harvests. My concerns diminish my enjoyment of fishing and observing wildlife, including Southern Residents, throughout the Puget Sound region. I believe these "interception fisheries," as I call them, are directly responsibility for the inability of ESA-listed Chinook and orcas to recover because they intercept wild fish that would otherwise return to Washington, other parts of the United States, and Canada. The fisheries catch too many fish that do not belong to them, ensuring that Southern Residents and ESA-listed Chinook will soon be extinct. NMFS's efforts to oversee these interception fisheries and the mitigation plan it has outlined for these fisheries has not worked and will not work if it continues to prioritize harvesting and future mitigation over the species' current recovery needs.

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17. I understand that these fisheries can be profitable, but I think NMFS must fully consider the effects of these fisheries on ESA-listed species. In doing so, NMFS must consider and follow the science to come to the logical conclusion that these fisheries are threatening the continued existence of wild salmon and Southern Residents. NMFS must consider whether these fisheries should continue to operate when wild Chinook and Southern Resident populations are so severely depleted. Only in ESA consultation and NEPA analysis with full consideration and weight of the adverse effects and possible alternatives should NMFS make its decision about these fisheries. NMFS needs to listen to their science and make the conclusions in accordance with the ESA. If NMFS were made to comply with the ESA and NEPA and were held accountable to Washington and the many citizens who use and enjoy the Puget Sound, the harm caused by the Southeast Alaska fisheries to my interests in Puget Sound would be remedied.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 26th day of March, 2020.

Peter W. Soverel

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HONORABLE MICHELLE L. PETERSON

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, in his official capacity as Regional Administrator for the National Marine Fisheries Service, *et al.*, Defendants.	Case No. 2:20-cv-00417-MLP [**PROPOSED**] ORDER GRANTING PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION

BEFORE THE COURT is Plaintiff Wild Fish Conservancy's Motion for Preliminary Injunction, Dkt. No. 14.

The Court makes the following findings:

1. Plaintiff Wild Fish Conservancy ("Conservancy") is likely to succeed on the merits of Claims One, Two, and Three, *see* Dkt. No.1 ¶¶ 114–19, for at least the following reasons: (1) the Biological Opinion on salmon fisheries within the Economic Exclusive Zone off the Coast of Southeast Alaska issued on April 5, 2019 ("2019 SEAK BiOp") is unlawful because it relies on uncertain mitigation to offset certain and immediate harm from the fisheries to Southern Resident Killer Whales; (2) the incidental take statement in the 2019 SEAK BiOp is

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unlawful because it failed to adequately define the amount of take of Southern Resident Killer Whales that can lawfully result before Defendant National Marine Fisheries Service ("NMFS") must reinitiate Endangered Species Act ("ESA") consultation on the fisheries; (3) NMFS is in violation of the substantive duty under section 7(a)(2) of the ESA to ensure that any action it authorizes is not likely to jeopardize threatened or endangered species or adversely modify such species' critical habitat because NMFS relied on the unlawful 2019 SEAK BiOp to authorize the salmon fisheries within the Economic Exclusive Zone off the Coast of Southeast Alaska; and (4) NMFS violated the National Environmental Policy Act ("NEPA") by issuing the incidental take statement in the 2019 SEAK BiOp without preparing any NEPA documents;

2. The Conservancy has demonstrated that, absent an injunction, the unlawfully authorized commercial salmon harvests in the Exclusive Economic Zone of Southeast Alaska are likely to cause irreparable injury under the ESA by depriving endangered Southern Resident Killer Whales of necessary prey and thereby contributing to the continued loss in population size and increase in extinction risk for this species; such injuries to the Southern Resident Killer Whale cause irreparable injury to the Conservancy's and its members' interests in this species;

3. The Conservancy has demonstrated that, absent an injunction, the unlawfully authorized commercial salmon harvests in the Exclusive Economic Zone of Southeast Alaska are likely to cause irreparable injury because NMFS has committed resources that will harm the environment without providing for NEPA procedures, including consideration of alternatives and opportunities for public participation;

4. The balance of hardships and the public interests favor the issuance of an injunction to protect endangered Southern Resident Killer Whales from the salmon harvests that were approved in violation of the ESA because, *inter alia*, Congress intended, in enacting the

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ESA, that conserving threatened and endangered species be afforded the highest priority and therefore, in accordance with United States Supreme Court and Ninth Circuit Court of Appeals precedent, the Court is not to balance hardships or public interests when considering an injunction for violations of the ESA;

5. The balance of hardships and the public interests favor the issuance of an injunction to protect endangered Southern Resident Killer Whales from the salmon harvests that were approved in violation of NEPA because, *inter alia*, public interests in preserving nature, avoiding irreparable environmental injury, and fully considering proposed actions and alternatives before implementation outweigh economic concerns;

6. The requested preliminary injunction is appropriately tailored because it seeks to remedy the specific harm at issue, namely, NMFS's unlawful approval in the 2019 SEAK BiOp of commercial salmon fisheries within the Exclusive Economic Zone of Southeast Alaska and the resulting impacts to endangered Southern Resident Killer Whales; and

7. A bond is not warranted because it would effectively deny judicial review to the Conservancy, a small non-profit environmental organization seeking to enforce public rights that has no financial stake in this lawsuit.

The Court therefore **GRANTS** Plaintiff's motion for injunctive relief as follows:

A. NMFS's authorization of "take" of threatened and endangered species resulting from commercial salmon fisheries within the Exclusive Economic Zone off the Coast of Southeast Alaska provided by the incidental take statement issued in the 2019 SEAK BiOp is hereby stayed and otherwise ineffective while this matter is pending;

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B. NMFS's delegation of authority to the State of Alaska to manage and allow commercial salmon fisheries within the Exclusive Economic Zone off the Coast of Southeast Alaska is hereby stayed and otherwise ineffective while this matter is pending;

C. NMFS shall take any additional steps that are reasonably necessary to halt commercial salmon fisheries within the Exclusive Economic Zone of Southeast Alaska before commencement of the summer fishing season on July 1, 2020 and while this matter is pending; and

D. The Court does not require a bond from Plaintiff.

IT IS SO ORDERED.

DATED this _____ day of _____, 2020.

_____
The Honorable Michelle L. Peterson
United States Magistrate Judge

Presented by:

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UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, Plaintiff, v. BARRY THOM, *et al.*, Defendants, and ALASKA TROLLERS ASSOCIATION, Defendant-Intervenor.	Case No. 2:20-cv-417-RAJ-MLP DEFENDANTS' OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION

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BiOp	Biological Opinion
DPS	Distinct Population Segment
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FMP	Fishery Management Plan
ITS	Incidental Take Statement
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
PST	Pacific Salmon Treaty
SRKW	Southern Resident Killer Whale
WDFW	Washington Department of Fish and Wildlife
WFC	Wild Fish Conservancy

INTRODUCTION

In its Motion for Preliminary Injunction, Plaintiff seeks an emergency order staying the National Marine Fisheries Service's (NMFS) "authorizations of commercial Chinook salmon fisheries in federal waters off the coast of Southeast Alaska, set to commence on July 1 [2020]." Dkt. # 14 at 9 (Mot.). This requested relief is aimed directly at NMFS's delegation of fisheries management authority to the State of Alaska under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). *See id*. But the time for lodging such a challenge has passed because the MSA provides a limited 30-day window for judicial review. Moreover, Plaintiff cannot salvage its flawed Motion by reference to the Endangered Species Act (ESA) and the National Environmental Policy Act (NEPA) because the MSA's jurisdictional provision encompasses claims brought under other statutes and courts do not permit end-runs around the provision via artful pleading. This Court also lacks jurisdiction because Plaintiff has not established organizational or representational standing as it pertains to the Southern Resident killer whale (SRKW), which the Motion seeks to protect. *See* Mot. at 9.

Although the jurisdictional defects alone provide sufficient basis for a denial of the Motion, Plaintiff also fails to meet its burden of showing that a preliminary injunction is warranted. Plaintiff is not likely to succeed on the merits because NMFS's 2019 Biological Opinion (BiOp), which determined that commercial salmon fisheries in Southeast Alaska would not jeopardize ESA-listed species, represents a sound, scientifically based assessment of the fisheries and their effects. In particular, NMFS reasonably concluded that the funding for conservation hatcheries, habitat restoration, and hatchery production of Chinook salmon would mitigate adverse effects that result from reductions in prey availability for SRKW. Nor has Plaintiff met its burden of showing irreparable harm is likely to occur absent an injunction—

Plaintiff's assertions regarding harm are substantially undermined by the one-year delay between the issuance of the BiOp and Plaintiff's Motion. In addition, the balance of equities and public interest weigh in favor of preserving NMFS's comprehensive approach to Chinook salmon and SRKW. For these reasons, as discussed below, the Court should deny Plaintiff's Motion.

STATUTORY BACKGROUND

I. Magnuson-Stevens Act

Congress enacted the MSA "to conserve and manage the fishery resources found off the coasts of the United States, and the anadromous species and Continental Shelf fishery resources of the United States." 16 U.S.C. § 1801(b)(1). Congress recognized that this purpose would be achieved "by exercising . . . sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone [EEZ]." *Id.* The EEZ—sometimes referred to herein as "federal waters"—extends from the seaward boundary of each coastal state to 200 nautical miles from the coastline. *Id.* §§ 1802(11), 1811(a).

The MSA provides the Secretary of Commerce, by and through NMFS,[1] the authority to regulate fisheries in the EEZ where necessary and appropriate. *Id.* §§ 1854, 1855(d). The Act empowers the Secretary to review and implement Fishery Management Plans (FMPs), which are developed by eight Regional Fishery Management Councils and submitted to NMFS. *Id.* § 1854(a)-(b). The Councils also prepare proposed regulations necessary to implement FMPs and plan amendments. *Id.* §§ 1852(h)(1); 1853(c). NMFS approves, disapproves, or partially approves plans and implements approved plans through regulations. *Id.* § 1854(a), (b). NMFS has primary responsibility for carrying out any plans it implements; however, states can regulate

[1] The Secretary delegated that authority to NMFS, a division of the National Oceanic and Atmospheric Administration. U.S. Dep't of Commerce, *Department Organization Order* 10-15, § 3.01(aa) (Dec. 12, 2011), *available at* http://www.osec.doc.gov/opog/dmp/doos/doo10_15.html (last visited May 8, 2020); U.S. Dep't of Commerce, *NOAA Organizational Handbook Transmittal No. 61*, Part II(C)(26), *available at* http://www.corporateservices.noaa.gov/ames/delegations_of_authority/ (last visited May 8, 2020).

fishing vessels in the EEZ when the FMP delegates management of the fishery to a State and the State's laws and regulations are consistent with the FMP. *Id.* § 1856(a)(3)(B). The North Pacific Fishery Management Council (NPFMC) has "authority over the fisheries in the Arctic Ocean, Bering Sea, and Pacific Ocean seaward of Alaska," *id.* § 1852(a)(1)(G), and NMFS has delegated authority over salmon fisheries in the EEZ in Southeast Alaska to the State of Alaska. 50 C.F.R. § 679.3(f). Section 1855 provides for judicial review of NMFS regulations if a petition is filed within 30 days of promulgation of the regulation. 16 U.S.C. § 1855(f)(1). A court may expedite review, however, a preliminary injunction is not available. *Id.* § 1855(f)(3)(A), (1)(A).

II. Endangered Species Act

ESA Section 7(a)(2) requires federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of designated critical habitat. *Id.* § 1536(a)(2). An agency proposing an action (the action agency) must determine whether its action "may affect" a listed species or critical habitat. 50 C.F.R. § 402.14. If the agency determines that the action may affect listed species, it must consult, either informally or formally, with NMFS or the Fish and Wildlife Service (the Services), or both. *Id.* §§ 402.03, 402.13, 402.14. Formal consultation culminates in the issuance of a BiOp by the Service as the consulting agency. *Id.* § 402.14(h)(3). A BiOp includes the Service's opinion on whether the proposed action is likely to jeopardize the continued existence of the affected species or result in the destruction or adverse modification of its designated critical habitat. *See id.* § 402.14. Section 9 prohibits "take" of listed species, 16 U.S.C. § 1538, which is defined to include harming, harassing, or killing listed species, among other things, *id.* § 1532(19). If the consulting agency determines that the proposed action is not likely to jeopardize

the species, but will reasonably likely result in the incidental "take" of some individual members of a listed species, the consulting agency provides an "incidental take statement" (ITS) along with the BiOp for that specific action. *See* 16 U.S.C. § 1536(b)(4)(i)-(ii). Any take that is in compliance with an ITS does not violate Section 9 of the Act. *See id.* § 1536(o)(2).

III. National Environmental Policy Act

NEPA serves the dual purpose of informing agency decisionmakers of environmental effects of proposed major federal actions and ensuring that relevant information is made available to the public. 42 U.S.C. § 4321; 40 C.F.R. § 1501.1; *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). NEPA does not require an agency to follow the most environmentally sound course of action, but rather to take a "hard look" at the environmental consequences. *Robertson*, 490 U.S. at 350. An agency must prepare an Environmental Impact Statement (EIS) for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C).

FACTUAL BACKGROUND

On April 5, 2019, NMFS issued a BiOp that considers the combined effects of two distinct (but related) actions and one programmatic action on ESA-listed species: (1) the ongoing delegation of management authority over the salmon fisheries in the Southeast Alaska EEZ to the State of Alaska; (2) the funding of grants to Alaska for monitoring and managing salmon fisheries; and (3) the funding of a conservation program for stocks of Puget Sound Chinook salmon and SRKW. *See* 2019 BiOp (Exhibit A) at 1-12. In the BiOp, NMFS analyzed the relationship between the management of salmon fisheries, especially Chinook salmon, and ESA-listed species. *Id.* This analysis was conducted against the backdrop of a long history of fishery management, which includes agreements under the Pacific Salmon Treaty (PST) and the

regulation of salmon fisheries in Southeast Alaska under the NPFMC's FMP for the Salmon Fisheries in the EEZ Off Alaska (Salmon FMP) (Exhibit B)[2].

I. Pacific Salmon Treaty Agreements

Because Chinook salmon migrate across the boundary between United States and Canadian waters, fish that originate in one country are often caught or "intercepted" by those fishing in the other country. Ex. A at 2. To resolve some of the resulting conflicts, the countries signed the PST, which established a framework for the management of Pacific salmon fisheries. Pacific Salmon Treaty, Jan. 28, 1985, T.I.A.S. No. 11091. The United States and Canada subsequently entered into Agreements under the PST in 1999 and 2009. The countries negotiated a 2019 Agreement, which establishes the upper limits of the intercepting fisheries. PST Agreement, Annex IV, Chapter 3 (Exhibit C).

II. Salmon Fishery Management Plan

Under the PST umbrella, fisheries in federal waters in Alaska and the Pacific Northwest are governed by FMPs that are prepared and proposed by fishery management councils and implemented by NMFS. For the federal waters in Southeast Alaska, the commercial and recreational fishing for Chinook salmon is governed by the Salmon FMP. The Salmon FMP was comprehensively amended in 1990 to address inefficiencies resulting from the overlap between federal and state management measures. Declaration of Glenn Merrill (Merrill Decl.) ¶ 9; *see* 55 Fed. Reg. 28,789 (July 13, 1990). Of particular relevance here, the amended FMP delegated management authority to the State of Alaska to regulate sport and commercial troll fishing for salmon. Merrill Decl. ¶ 9. At issue in this case is the commercial troll fishery (fishery). This fishery occurs in both state and federal waters, and is divided into two seasons: the winter season

[2] The attached version of the FMP was produced in 2018, which is when the most recent amendment was approved.

(October 11 through April 30) and the summer season (May 1 through September 30), which includes a spring fishery that occurs only in state waters and a summer fishery (July 1 through September 30). NMFS reaffirmed its delegation of authority over salmon fisheries in the EEZ of Southeast Alaska in FMP Amendment 12 (Exhibit D). *See* 77 Fed. Reg. 75,570 (Dec. 21, 2012).

III. Endangered SRKW and Threatened Chinook Salmon

The SRKW distinct population segment (DPS), which occurs in the coastal and inland waters of the Pacific Northwest, was listed as endangered in 2005. 70 Fed. Reg. 69,903 (Nov. 18, 2005). NMFS designated critical habitat for SRKW in 2006. 71 Fed. Reg. 69,054 (Nov. 29, 2006). The SRKW DPS faces a variety of threats, including limits on the quantity and quality of prey, toxic chemicals, oil spills, and disturbance from vessels. Ex. A. at 90-98. NMFS has listed a number of evolutionarily significant units (ESU) of Chinook salmon as threatened, including the Lower Columbia River, Puget Sound, Upper Willamette River, and Snake River fall-run ESUs. *See* 70 Fed. Reg. 52,630, 52,706 (Sept. 2, 2005). NMFS has consulted on the effects of various fisheries on SRKW and threatened Chinook over the last two decades. Ex. A. at 3-5.

STANDARD OF REVIEW

A plaintiff seeking a preliminary injunction must show: "(1) it is likely to succeed on the merits; (2) it is likely to suffer irreparable harm if the preliminary injunction is not granted; (3) the balance of equities tips in its favor; and (4) an injunction is in the public's interest." *Conservation Cong. v. U.S. Forest Serv.*, 720 F.3d 1048, 1054 (9th Cir. 2013) (citing *Winter v. Nat. Res. Def. Council*, 555 U.S. 7, 20 (2008)). A "preliminary injunction is an extraordinary and drastic remedy." *Mazurek v. Armstrong*, 520 U.S. 968, 972 (1997) (per curiam) (citation omitted). Thus, the moving party must make "a clear showing that the plaintiff is entitled to such relief." *Winter*, 555 U.S. at 22 (citation omitted).

ARGUMENT

I. This Court Lacks Jurisdiction to Issue the Requested Relief.

Fisheries in federal waters are authorized through regulations issued by NMFS under the MSA, which imposes a 30-day deadline within which to challenge such regulations. 16 U.S.C. § 1855(f). Plaintiff asks this Court to shut down the commercial troll fishery in federal waters in Southeast Alaska set to begin on July 1, 2020. *See* Mot. at 9. But because the source of this relief falls squarely within the judicial review provisions of the MSA, and because Plaintiff has missed the deadline for challenging the relevant regulation, the Court lacks jurisdiction to enjoin the fishery. *Norbird Fisheries v. NMFS*, 112 F.3d 414, 416 (9th Cir. 1997). The Court also lacks jurisdiction because Plaintiff has not established organizational or representational standing.

A. The MSA's Statute of Limitations Bars the Requested Relief.

There is a fundamental disconnect between Plaintiff's requested relief—shutting down the fishery—and what Plaintiff claims is the source of the alleged violation—the ESA and NEPA. A closer look at the Motion, the MSA, and case law makes clear that the MSA applies in these circumstances. The judicial review provision of the MSA provides in pertinent part that:

> (1) Regulations promulgated by the Secretary under this chapter and actions described in paragraph (2) shall be subject to judicial review to the extent authorized by, and in accordance with, chapter 7 of Title 5, if a petition for such review is filed within 30 days after the date of the regulations are promulgated or the action is published in the Federal Register, as applicable; except that—
>
> > (A) section 705 of such Title is not applicable, and
> >
> > (B) the appropriate court shall only set aside any such regulation or action on a ground specified in section 706(2)(A), (B), (C), or (D) of such Title.
>
> (2) The actions referred to in paragraph (1) are actions that are taken by the Secretary under regulations which implement a fishery management plan, including but not limited to actions that establish the date of closure of a fishery to commercial or recreational fishing.

16 U.S.C. § 1855(f). This provision applies even if a party does not use "the magic words, 'the Magnuson Act.'" *Turtle Island Restoration Network v. U.S. Dep't of Commerce*, 438 F.3d 937, 944 (9th Cir. 2006). Indeed, "the decisive question is whether the regulations are being attacked, not whether the complaint specifically asserts a violation of the Magnuson Act." *Id.* at 945.

Here, although Plaintiff has not expressly alleged a violation of the MSA, Plaintiff seeks to enjoin the sole source of authorization for the commercial troll fishery, which is the MSA regulation implementing the Salmon FMP. 77 Fed. Reg. 75,570. The wording of Plaintiff's Motion confirms the centrality of the MSA to Plaintiff's claims. It acknowledges the process by which FMPs are implemented, *see* Mot. at 12-13 (describing the process for review of FMPs and promulgation of regulations), as well as the applicable FMP, *see* Mot. at 14-15 (noting that the FMP "provides for two salmon fisheries" and "delegates management authority over these fisheries to the State of Alaska"). And crucially, Plaintiff asks this Court to enter an order "staying [NMFS's] authorizations of commercial Chinook salmon fisheries in federal waters off the coast of Southeast Alaska." Mot. at 9; *see id.* at 29 (seeking an order staying "delegation of authority"); *id.* at 32 (noting "the harm posed by the unlawfully approved harvest"). In *Turtle Island*, the Ninth Circuit examined similar language in plaintiff's motion for a preliminary injunction, which sought "to 'requir[e] defendants to withdraw their authorization of swordfish longlining in the Pelagic fisheries of the Western Pacific, and enjoin[ ] . . . all longline swordfish fishing activities,'" and the court determined that the "challenge cannot credibly be viewed as anything other than an attack on the regulations." 438 F.3d at 945. The same is true here.

Plaintiff may contend that its Motion is brought under the ESA and NEPA. *See* Mot. at 10-11. But the specific terms of the MSA's judicial review provision leave no doubt that it encompasses claims brought under other statutes, and is not limited to allegations of MSA

violations. Under subsection 1855(f)(1)(B), "the appropriate court shall only set aside any such regulation or action on a ground specified in section 706(2)(A), (B), (C), or (D)." 16 U.S.C. § 1855(f)(1)(B). As such, an action challenged under the MSA can be set aside if it is "without observance of procedure required by law," 5 U.S.C. § 706(2)(D), which would include claims under the ESA and NEPA. This conclusion is confirmed by the requirement that FMPs must comply with "other applicable law," including the ESA. 16 U.S.C. § 1853(a)(1)(C).

Courts have rejected attempts by parties to avoid a strict jurisdictional limit by seeking relief under other statutes. In *Blue Water Fishermen's Association v. NMFS*, 158 F. Supp. 2d 118 (D. Mass. 2001), plaintiffs challenged regulations closing portions of the Atlantic Ocean to pelagic longline fishing, sought a preliminary injunction, and asserted claims under the MSA and ESA. The court noted that although the rules were premised on a jeopardy finding in a BiOp, they were issued pursuant to NMFS's authority "under the Magnuson-Stevens Act, *not the Endangered Species Act*." *Id.* at 122. The court held that "couching the action in different statutory language 'is not a hook which can remove the prohibitions of the Magnuson-Stevens Act.'" *Id.* (quoting *A.M.L. Int'l, Inc. v. Daley*, Civil Action No. 00-10241-EFH, at *2 (May 18, 2000)); *see also Sea Hawk Seafoods v. Locke*, 568 F.3d 757, 765 (9th Cir. 2009); *Am. Bird Conservancy v. FCC*, 545 F.3d 1190, 1195 (9th Cir. 2008).

Here, too, the authorization for the salmon fisheries in the Southeast Alaska EEZ derives from the regulations promulgated under the MSA.[3] The most recent action that affirmed delegating management authority to Alaska was issued 2012. *See supra* at 6. Moreover, even if the BiOp could be construed as an authorization, or even re-affirmance of the regulations,

[3] An ITS does not "authorize" any activity, nor does it change the parameters of a proposed action. 16 U.S.C. § 1536(b)(4)(i)-(ii). It is only an exemption from liability for "take" that is incidental to the proposed action. *Id.* § 1536(o)(2). Plaintiff misconstrues the legal effect of an ITS by characterizing it as an "authorization." Mot. at 29.

Plaintiff was required to have brought its challenge within 30 days of issuance on April 5, 2019. *See supra* at 4. Thus, whether the authorization is the regulations promulgated under the MSA or the BiOp, because of the nature of Plaintiff's challenge, the MSA statute of limitations precludes the Court from adjudicating Plaintiff's challenge.

This conclusion does not mean that Plaintiff is completely without recourse. Plaintiff apparently overlooks the "administrative process by which a person may seek federal review of state management measures." Ex. B at 55. The Salmon FMP, which was approved by NMFS pursuant to 16 U.S.C. § 1854, establishes an avenue to petition NMFS to review management measures implemented by Alaska. Chapter 9 provides that any member of the public can petition NMFS if that person believes the measure is inconsistent with the FMP, the MSA, or other applicable federal law. *Id.* To the extent Plaintiff believes that management of the fishery runs afoul of federal law, it can challenge those measures if it first exhausts the State's administrative procedure. *Id.* at 56. And if Plaintiff was further dissatisfied, it could ultimately seek judicial review of NMFS's response. Yet Plaintiff has not availed itself of this option. Merrill Decl. ¶ 18. This Court should not circumvent the MSA's statute of limitations, especially when there is an administrative process that Plaintiff did not utilize. *See Woodford v. Ngo*, 548 U.S. 81, 90 (2006) ("[C]ourts should not topple over administrative decisions unless the administrative body not only has erred, but has erred against objection made at the time appropriate under its practice.").[4]

B. Plaintiff Lacks Standing to Pursue the Requested Relief.

Plaintiff's Motion focuses on the alleged irreparable harm to SRKW. *See* Mot. at 9. But the sole Plaintiff, Wild Fish Conservancy (WFC), which is an organization "dedicated to the preservation and recovery of Washington's native fish species and the ecosystems on which

[4] The Motion should also be denied because MSA also precludes courts from entering the preliminary injunctive relief that Plaintiff seeks. 16 U.S.C. § 1855(f)(1)(A).

those species depend," Compl. ¶ 14, has not shown that it has organizational standing as it pertains to SRKW. And although individual members of WFC attest that they have an interest in SRKW, they have either failed to identify an injury in fact or the interest is not germane to the WFC's purpose, and thus Plaintiff has not demonstrated representational standing.

An organization can establish standing on its own behalf or as a representative of its members. *Smith v. Pac. Props. & Dev. Corp.*, 358 F.3d 1097, 1101 (9th Cir. 2004). But WFC has not established either as it pertains to its claim that the salmon fishery is harming SRKW. *Contra* Mot. at 19 n.5. An organization can establish an injury to its own interests if it can demonstrate "(1) frustration of its organizational mission; and (2) diversion of its resources to combat the particular conduct in question." *Am. Diabetes Ass'n v. U.S. Dep't of the Army*, 938 F.3d 1147, 1154 (9th Cir. 2019) (citation omitted). As an initial matter, there is scant indication from the pleadings that the protection of SRKW is part of WFC's mission. *See* Compl. ¶ 14 (referencing work on water quality, wild fish, and fish habitat); Dkt. # 14-4 (Beardslee Decl.) ¶¶ 2-4 (referencing the heritage and populations of wild fish). A brief mention about either meeting with NMFS to discuss salmon and SRKW or commenting on the impact of harvesting on salmon and SRKW, *see id.*, does not explain *how* WFC's mission has been impeded. Moreover, Plaintiff makes no assertions that NMFS's actions "required, and will continue to require, a diversion of resources, independent of expenses for this litigation, from their other initiatives." *E. Bay Sanctuary Covenant v. Trump*, 932 F.3d 742, 766 (9th Cir. 2018).

WFC also fails to establish representational standing, which requires that one of the organization's "members would otherwise have standing to sue in their own right, the interests at stake are germane to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit." *Friends of the Earth*

v. Laidlaw Envtl. Servs. (TOC), 528 U.S. 167, 181 (2000) (citation omitted). Plaintiff attaches the declarations of William John McMillan and Peter W. Soverel in support of its Motion, but neither satisfies the second prong because the interests at stake in the Motion—the alleged harm to SRKW—are not germane to WFC's purpose, which is the preservation of wild fish and their habitat.[5] *See* Beardslee Decl. ¶¶ 2-4; *Pac. Nw. Generating Coop. v. Brown*, 38 F.3d 1058, 1063 (9th Cir. 1994) (organization of hydropower purchasers lacked standing to raise aesthetic interests of customers); *Levine v. Johanns*, No. C. 05-04764 MHP, 2006 WL 8441742, at *11 (N.D. Cal. Sept. 6, 2006) ("An interest in consumer health is not germane to the purpose of promoting animal welfare."). To be clear, an individual member may have an interest in SRKW *and* the preservation of wild fish, but that does not mean, *a fortiori*, that WFC's mission actually encompasses both. WFC lacks representational standing.

II. Plaintiff Is Not Likely to Succeed on the Merits.

Plaintiff asks this Court to invalidate the BiOp based on what it characterizes as a flawed jeopardy analysis and lack of NEPA analysis. *See* Mot. at 19-29. But Plaintiff overlooks key aspects of NMFS's jeopardy analysis, misconstrues the hatchery conservation program, and erroneously shoehorns the facts of this case into other cases. And, NMFS was not required to conduct NEPA analysis for the ITS it issued. Thus, Plaintiff is unlikely to succeed on the merits.

A. Plaintiff Ignores Key Factors Supporting NMFS's "No Jeopardy" Decision.

In the incomplete picture painted by Plaintiff, NMFS purportedly based its "no jeopardy" determination *solely* on the funding of a conservation program. *See* Mot. at 19. In actuality, there are several other crucial elements that informed NMFS's analysis. *First*, under the 2019 PST

[5] Mr. McMillan's declaration does not support the first prong because he merely attests that he "will continue trying to see an orca" on his trips. Dkt. # 14-5 ¶ 21. This type of "some day" intention—"without any description of concrete plans, or indeed even any specification of *when* the some day will be"—should be rejected because it fails to support a finding of actual or imminent injury. *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 564 (1992).

Agreement, at most abundance levels there will be overall reductions of 7.5% and 12.5% in the levels of Chinook harvest from the Southeast Alaska salmon fisheries and the West Coast Vancouver Island fisheries, respectively, as compared with harvest levels in the 2009 PST. Ex. A at 17, 312. In the BiOp, NMFS examined the impact of the decrease in the Southeast Alaska fisheries across the various Chinook salmon stocks. *Id.* at 174-227. NMFS determined that although there will still be some decline in prey availability, the adverse effects on SRKW will be reduced. *Id.* at 312; *see* Declaration or Lynne Barre (Barre Decl.) ¶ 18.

Furthermore, NMFS examined the data about the Chinook salmon stocks that serve as the largest contributors to the Southeast Alaska fisheries and compared it with a list of the priority stocks for SRKW. Ex. A at 251-53. NMFS concluded that based on an analysis it conducted in 2018 with the Washington Department of Fish and Wildlife (WDFW), most of the priority stocks were not high on the list of the stocks harvested in Southeast Alaska. *Id.* at 92-93; 253. With the exception of Columbia Upriver bright stocks, the other stocks at the top of the Southeast Alaska catch list are not high on the SRKW priority list. *Id.* at 251. Conversely, the highest-priority stocks for SRKW—Puget Sound and lower Columbia River fall stocks—account for only 2-3% of the total catch in the Southeast Alaska fisheries. *Id.* at 314.

In addition, the potential effects of the Southeast Alaska salmon fisheries on SRKW were not considered in a vacuum—NMFS analyzed the fisheries in the context of the environmental baseline, which captured other threats to SRKW. *Id.* at 163-67. Also, activities other than fisheries have affected the prey availability for SRKW, including agriculture and forestry. *Id.* at 155-56. This context informed NMFS's conclusion that the proposed actions would not appreciably reduce the likelihood of survival and recovery of SRKW. *Id.* at 316.

B. The Mitigation Measures Support NMFS's "No Jeopardy" Finding.

Besides ignoring the reduction in harvest levels, Plaintiff makes multiple flawed assertions about the suite of mitigation measures that make up the conservation program. Plaintiff begins with the contention that it is "unclear when, if ever, these projects will [be] funded." Mot. at 21. But Congress has passed an appropriations bill that provides NMFS with $35.5 million dollars "to address all responsibilities and commitments associated with implementation of the 2019 PST Agreement." Declaration of Scott Rumsey (Rumsey Decl.) ¶ 11; Pub. L. No. 116-93, 113 Stat. 2317 (Dec. 20, 2019). The relevant congressional committees have also directed NMFS to develop a "Spend Plan." Rumsey Decl. ¶ 12. The Spend Plan agreed to on February 21, 2020 directed $19.1 million to ESA-related conservation activities, with $3.1 million for the conservation hatchery programs, $10.4 million for habitat restoration actions, and $5.6 million for hatchery production aimed at increasing prey for SRKW. *Id.* ¶ 13. This allocation of funds is consistent with the programmatic nature of the funding contemplated by the BiOp, and thus represents a "definite commitment of resources."[6] *Contra* Mot. at 21 (quoting *Nat'l Wildlife Fed'n v. NMFS*, 524 F.3d 917, 936 (9th Cir. 2008)); *see* Ex. A at 10-11.

Next, Plaintiff wrongly assails the mitigation covered by the funding because NMFS itself would not implement the measures. *See* Mot. at 21. There is no requirement that the agency implement the mitigation; such a requirement would limit the options available to an agency as it considered ways to mitigate impacts to ESA-listed species. Plaintiff's misplaced argument is not supported by the case law. In *Rock Creek Alliance v. U.S. Fish & Wildlife Service*, 663 F.3d 439, 444 (9th Cir. 2011), for example, the court found that the agency could rely upon mitigation

[6] Also, the Washington State Legislature has provided approximately $13 million of funding in the 2019-2021 biennium to increase prey abundance for SRKW. Declaration of Allyson Purcell (Purcell Decl.) ¶ 12. The expected production associated with this action is the release of an additional 13.5 million juvenile Chinook salmon in the spring of 2020 and a similar amount in the spring of 2021. *Id.*

plans that are implemented by third parties in order to conclude an action is not likely to jeopardize the species.

Plaintiff's final salvo on the contents of the mitigation measures—an alleged "lack of specific and binding plans"—also misses the mark. *See* Mot. at 21-23. NMFS's analysis included consideration of the priority Chinook stocks for SRKW and identified facilities with available capacity. Ex. A at 11; 255. Specifically, NMFS determined that producing 5-6 million smolts would lead to increases of 4-5% in inland waters in the summer, and that producing 14-15 million smolts would lead to increases of 4-5% in coastal waters in the winter, and that these increases would help offset declines in prey availability. *Id.* at 255. NMFS recognized that it may need to conduct site-specific assessments for projects, yet that is consistent with its regulations. 50 C.F.R. §§ 402.02, 402.14(i)(6) (providing for framework programmatic consultation followed by site-specific assessments when more information becomes available).[7] Moreover, "the ESA accepts agency decisions in the face of uncertainty." *Ariz. Cattle Growers' Ass'n v. Salazar*, 606 F.3d 1160, 1164 (9th Cir. 2010). And NMFS has now established the criteria that will be used in selecting candidate facilities. Purcell Decl. ¶ 8. The criteria include a focus on production of Chinook stocks that are a high priority for SRKW and, given timing and funding constraints, avoiding proposals that involve major upgrades. *Id.* Some of the likely candidates for hatchery production have been analyzed under the ESA and NEPA, and NMFS expects to complete applicable reviews by the end of August 2020. *Id.* ¶ 10.

[7] These ESA implementing regulations, which were revised in 2015, define framework programmatic action to mean "a Federal action that approves a framework for the development of future action(s) that are authorized, funded, or carried out at a later time, and any take of a listed species would not occur unless and until those future action(s) are authorized, funded, or carried out and subject to further section 7 consultation." 50 C.F.R. § 402.02. Because the regulations contemplate a subsequent site-specific analysis, the Court should reject Plaintiff's argument that any site-specific consultations for hatchery facilities had to occur before the BiOp issued. *See* Mot. at 23-26. Notably, Plaintiff makes no mention of these regulations, and relies instead on cases that pre-date them. *See id.*

As with the hatchery funding initiative, the BiOp included sufficient specifics about the conservation hatchery programs and habitat restoration measures for purposes of the jeopardy analysis. *Contra* Mot. at 22-23. Plaintiff downplays the fact that NMFS identified three existing conservation hatcheries, but these programs are currently producing Chinook salmon, and additional funding will support production. Ex. A at 151-52, 228. The BiOp also identifies a proposed fourth hatchery program and describes in detail the factors that NMFS will consider in analyzing any modifications to conservation hatchery programs. *Id.* at 228. Plaintiff attempts to characterize the habitat restoration portion of the mitigation as amorphous, but NMFS's analysis was informed by a list of 15 high priority projects and the BiOp provides details on how the projects will be reviewed once the list is finalized. *Id.* at 235-36. Based on these details, which included a framework for site specific analysis on hatcheries and habitat,[8] NMFS reasonably concluded that both "would contribute to prey abundance for SRKWs over the intermediate and longer term." *Id.* at 240.

The level of detail in the BiOp and the attached declarations distinguishes this case from the lines of cases on which Plaintiff relies. *See* Mot. at 20-23 (citing *Nat'l Wildlife Fed'n*, 524 F.3d 917; *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139 (D. Ariz. 2002); *Ctr. for Biological Diversity v. Salazar*, 804 F. Supp. 2d 987 (D. Ariz. 2011)). Whereas NMFS has developed plans for how to use the three sources of funding, in the three cases cited by Plaintiff, the measures were undeveloped or relied simply on "general commitment[s] to future

[8] Plaintiff's assertion that NMFS was required to engage in NEPA analysis on the funding of the mitigation measures suffers from multiple flaws. *See* Mot. at 25-26. *First*, the trigger for NEPA is a "major Federal action" and some of the projects may not meet this threshold requirement. *See* 42 U.S.C. § 4332(2)(C). *Second*, the case cited by Plaintiff in support of its argument about NMFS has predetermined the outcome of NEPA does not bear the weight placed on it. Mot. at 25 (citing *Metcalf v. Daley*, 214 F.3d 1135 (9th Cir. 2000)). In that case, the agency committed to a quota before the Environmental Analysis was complete, but here the only decision has been to distribute the money. Thus, if a candidate hatchery facility fails to meet the criteria, an alternate candidate will be selected. Purcell Decl. ¶ 9. *Third*, any argument that NMFS will violate NEPA by failing to consider alternatives, such as smaller hatcheries, is premature. *See* Mot. at 25.

improvements." *Nat'l Wildlife Fed'n*, 524 F.3d at 936. In both *Rumsfeld* and *Salazar*, the court reviewed BiOps resulting from consultation on continued Army operations at Fort Huachuca. In *Rumsfeld*, the court invalidated the BiOp because the mitigation would only be identified *after* the Army developed a resource management plan and helped develop another plan with an organizational partnership. 198 F. Supp. 2d at 1153-54. Similarly, the *Salazar* court found the BiOp to be arbitrary because it relied on a "proposal to develop a 'targeted mitigation strategy'" that was "*entirely unwritten*." 804 F. Supp. 2d at 1004 (emphasis added). The court added that "[w]ithout these [mitigation] measures identified and included in the BiOp, there is no factual bases and no rational basis for the opinion." *Id.* By contrast, the measures in this case are different in kind and in degree—specific uses of the funding have been identified in the BiOp, criteria have been developed for distributing funds to hatcheries and projects, and the impacts have been analyzed. *See Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 807 F.3d 1031, 1046 (9th Cir. 2015) ("[T]he conservation measures in the [Memorandum of Agreement] are not only 'included as part of the project' consulted upon; they actually *are* the project consulted upon.").[9] Thus, the hatchery and habitat program is far from being "unwrittten."

C. The Incidental Take Statement for SRKW Fulfills NMFS's ESA Obligations.

Plaintiff contends that the ITS for SRKW is inadequate, Mot. at 26-28, but this argument glosses over the applicable regulations and misreads the case law on surrogates. ESA regulations describe the requirements for an ITS, including the "amount or extent, of such incidental taking" and indicate that a surrogate can be used for expressing that amount. 50 C.F.R. § 402.14(i)(1). In 2015, the regulations were revised to clarify that an ITS can use a surrogate when it:

> [d]escribes the causal link between the surrogate and take of the listed species, explains why it is not practical to express the amount or extent of anticipated take or to monitor take-

[9] The anticipated funding for 2020 has been appropriated, but in the event that future funds are not provided in a way that could affect SRKW, then NMFS will reinitiate consultation. Ex. A at 11.

> related impacts in terms of individuals of the listed species, and sets a clear standard for determining when the level of anticipated risk has been exceeded.

Id. NMFS set the incidental take for SRKW by reference to the level of catch of Chinook salmon, and in the process discussed the three elements outlined in the regulation. Ex. A at 327.

Plaintiff errs in its assertion that the ITS "authorizes whatever amount of take of Southern Residents happens to result." Mot. at 26. This statement overlooks the fact that the catch limit for the fishery is set each year after taking into consideration factors such as abundance. Ex. A at 12-20; Merrill Decl. ¶ 20. Plaintiff's argument also goes astray with the comparison to *Oregon Natural Resource Council v. Allen*, 476 F.3d 1031 (9th Cir. 2007). Mot. at 26-27. Unlike this case, *Allen* involved the use of critical habitat as a surrogate. In any event, the Services subsequently explained that even where surrogates are "fully coextensive with the *anticipated* impacts of the project . . . , the surrogate nevertheless provides for a meaningful reinitiation trigger consistent with the purposes of an [ITS]." 80 Fed. Reg. 26,832, 26,834 (May 11, 2015). Further, there are three factors, in addition to exceedance of an ITS, that can trigger reinitiation; these include, *inter alia*, new information revealing the action may affect species in a way that has not been considered. 50 C.F.R. § 402.16(a)(2). In sum, Plaintiff fails to meet its burden of showing a likelihood of success on the merits of its procedural challenge to the BiOp.[10]

D. Plaintiff Is Not Likely to Succeed on Its NEPA Claim.

Plaintiff's assertion that NMFS violated NEPA when it issued the ITS is flawed. *Contra* Mot. at 28. Plaintiff contends that NMFS violated NEPA "by issuing the ITS without preparing any NEPA documents." *Id.* But it is well established that when NMFS acts in its role as the

[10] Plaintiff is also not likely to succeed on its substantive ESA claim. *Contra* Mot. at 28. NMFS, as the action agency, properly relied on the rational BiOp produced as part of the consultation process. *See Pyramid Lake Paiute Tribe of Indians v. U.S. Dep't of Navy*, 898 F.2d 1410, 1416 (9th Cir. 1990) (holding that the action agency did not act arbitrarily and capriciously in its reliance on a valid BiOp).

consulting agency, neither the preparation of a biological opinion, nor the issuance of an ITS constitutes major federal action that triggers NEPA. *See San Luis & Delta-Mendota Water Auth. v. Jewell*, 747 F.3d 581, 642 (9th Cir. 2014) (deciding that the ESA and its regulations support the view that the consulting agency is "merely offering its opinions and suggestions to . . . the action agency"); *Wild Fish Conservancy v. Irving*, 221 F. Supp. 3d 1224, 1236 (E.D. Wash. 2016) ("NMFS had no NEPA obligation in this case" where it issued an ITS). Accordingly, NMFS, in its role as the agency consulting on ESA-listed marine mammals and ESA-listed salmon, was not obligated to perform any NEPA when it issued the ITS.

NMFS was also not obligated to prepare NEPA documents in its role as the action agency. As an initial matter, the ITS does not "authorize[] fisheries in the federal waters." Mot. at 29. The fisheries are authorized by the MSA, and here that authorization has been delegated to the State of Alaska. *See supra*. For the MSA regulations, NMFS has satisfied any NEPA obligations through the Final Environmental Assessment (EA) it performed in connection with Amendment 12 to the Salmon FMP. That 2012 EA (Exhibit E) considered the impacts of the ongoing delegation and included an analysis of NMFS's 2008 BiOp on the delegation to Alaska and the accompanying ITS (Exhibit F). Ex. E at 152-80. The 2008 BiOp had examined the impact of the delegation on ESA-listed species, including SRKW. Ex. F at 7·110-128; 9·32-35. Plaintiff ignores the 2012 EA and the 2008 BiOp when it suggests that NMFS took no action between the 2003 EIS that followed *Ramsey v. Kantor*, 96 F.3d 434 (9th Cir. 1996), and the 2019 BiOp.[11] *See* Mot. at 28. And Plaintiff mistakenly asserts that NMFS had an obligation under NEPA to assess "massive new federal funding," which is the same funding it described as

[11] *Ramsey* is inapt. There, the court found that NEPA was required because an ITS acted as a functional "permit" for fishing regulations issued by two *states*. 96 F.3d at 444. Here, the relevant action is the delegation of authority to the state under the MSA. Further, "*Ramsey*'s holding has been construed narrowly." *Grand Canyon Tr. v U.S. Bureau of Reclamation*, No. CV-07-8164-PHX-DGC, 2011 WL 1211602, at *11 (D. Ariz. Mar. 30, 2011) (citation omitted).

"nonexistent mitigation" for purposes of its ESA argument. Mot. at 26, 29. NMFS explicitly noted that the ITS was not providing "an exemption from the take prohibition for those [funding] actions" and added that any incidental take would be addressed in future site-specific consultations or determinations of coverage by existing BiOps.[12] Ex. A at 327.

III. Plaintiff Fails to Demonstrate Irreparable Harm.

Irreparable harm is not likely to occur to SRKW or Plaintiff's purported interest in viewing them during the pendency of this case. To prevail, there must be an evidentiary showing that the Plaintiff—not the environment—is likely to suffer irreparable harm. *Winter*, 555 U.S. at 20 (requiring plaintiff to establish "that *he* is likely to suffer irreparable harm") (emphasis added). That harm must be immediate, individualized, and substantiated with evidence. *Caribbean Marine Servs. Co. v. Baldrige*, 844 F.2d 668, 674 (9th Cir. 1988). As described above, Plaintiff has failed to explain how it has an organizational interest in SRKW, or how that interest has been impeded; and Plaintiff cannot meet the standard for representational standing. But even if Plaintiff could establish standing, a demonstration of irreparable harm requires more. *Ctr. for Food Safety v. Vilsack*, 636 F.3d 1166, 1171 n.6 (9th Cir. 2011). Any harm to Plaintiff would be "based derivatively on the harm [the declarants] allege to [SRKW]" and the ability of Mr. McMillan and Mr. Soverel to view them. *Idaho Rivers United v. U.S. Army Corps of Eng'rs*, 156 F. Supp. 3d 1252, 1261 (W.D. Wash. 2015). But for the interest in viewing SRKW to be "irreparably" injured, there must be significant population-level effects to the species. *Id*. at 1261-63. Moreover, a "plaintiff must present a 'concrete showing of probable deaths during the interim period and of how these deaths may impact the species.'" *Nw. Envtl. Def. Ctr. v. U.S. Army Corps of Eng'rs*, 817 F. Supp. 2d 1290, 1315 (D. Or. 2011) (citation omitted).

[12] The other funding action—the grants to Alaska—are categorically excluded from NEPA. *See* Memorandum for the Record from Stephanie Coleman, June 21, 2019 (Exhibit G).

Plaintiff has not provided evidence that either will occur. Mr. McMillan states that, although he has never seen any SRKW, his interest in viewing them is harmed by the Southeast Alaska salmon fisheries. Dkt. # 14-5 ¶¶ 6, 21. Mr. Soverel asserts that he has watched SRKW, and that if there were more, he "could enjoy them more." Dkt. # 14-6 ¶¶ 10, 12. These concerns do not rise to the level of imminent, irreparable harm that warrants emergency relief. These viewing interests are unlikely to be irreparably harmed while the parties brief cross motions for summary judgment, which will likely be ready for adjudication, if not decided, prior to next summer's fishery. *See Defs. of Wildlife v. U.S. Army Corps of Eng'rs*, 730 F. App'x 413, 415 (9th Cir. 2018) ("The law is clear that only harm that will occur 'in the absence of preliminary relief' may be considered in determining irreparable harm.") (citation omitted).

Plaintiff relies on two other declarants—Dr. Giles and Dr. Lacy—in a flawed attempt to connect fishing to a decrease in the number of SRKW and therefore harm to the viewing interests. Dkt. # 14-2, 14-3. Even assuming a fractional decrease in viewing opportunity could rise to the level of irreparable harm (which is far from clear[13]), neither of the declarants address what effect this particular summer fishery, located thousands of miles away, will have on SRKW, and more specifically what effect the summer fishery will have within the next year. In fact, the summer fishery is not mentioned by Dr. Giles or Dr. Lacy, who focus entirely on limiting factors and long-term viability trends (which NMFS disagrees with). Plaintiff fails to present *any evidence* that the 2020 summer fishery will decrease the number of SRKW to a point that irreparably harms Plaintiff.

[13] Mr. McMillan's declaration highlights this problem. Mr. McMillan candidly acknowledges that he has never seen a SRKW. McMillan Decl. ¶ 6. Nevertheless, Plaintiff contends that this particular summer fishery will reduce his viewing opportunity, i.e., a reduction from a historical zero. Even if such a reduction could be possible, Mr. McMillan's assertion of harm is far too speculative to warrant finding a likelihood of irreparable harm. *Winter*, 555 U.S. at 23 (taking 40 years of history of whale sightings, or lack thereof, into account when evaluating harm with an alleged NEPA violation).

Plaintiff's failure is not without reason. NMFS estimates that roughly 21,142 Chinook will be caught in the summer fishery. Barre Decl. ¶¶ 5-7. But not all of these fish are destined to be SRKW prey. Because there are numerous Chinook stocks caught in the Southeast Alaska fisheries, all of which have different migratory patterns, not all stocks will overlap with SRKW. Ex. B, App'x A at 27-34. Only a small subset of these Chinook would become "available prey," if not caught in the summer fishery. Of the 21,142 expected to be caught in the summer fishery, a little more than half (12,417) are estimated to migrate south and potentially become available prey on the coast, and an even smaller number (1,482) is estimated to migrate to the Salish Sea. To put these estimates in context, it is expected that roughly 2 million Chinook will be available as prey during the same timeframe in coastal waters and 0.9 million in Salish Sea waters. As such, the summer fishery is expected to reduce prey along the coast by 0.6% and in the Salish Sea by 0.2%.

As it did on a larger scale in the BiOp, NMFS examined what this reduction in Chinook would mean for SRKW. Barre Decl. ¶¶ 8-9. The abundance and estimated energy of Chinook as a prey base (wherever SRKW are likely to travel during this timeframe) is more than the needs of SRKW. Thus, even if the Court prohibited fishing in the EEZ this summer, and even if every single one of those 13,899 Chinook became available as prey (which is not a reasonable assumption[14]), the prohibition on fishing would only have a very small effect on the availability of prey for SRKW. *Id.* ¶ 5. These additional fish would not affect foraging behavior in a measurable or detectable way or be a limiting factor for SRKW. *Id.* For these reasons, Plaintiff

[14] For example, an injunction may simply shift the troll fishing effort from federal waters to state waters (0-3 miles), and it is possible, if not likely, that the entire troll quota for this year would still be caught. Merrill Decl. ¶ 23. If this were to occur, there would not be any increase in prey availability for SRKW as a result of injunctive relief.

cannot establish that this summer fishery is likely to result in irreparable harm to SRKW, or even more tangentially, Plaintiff's interest in viewing SRKW.

Finally, Plaintiff's delay in filing suit and seeking emergency relief seriously undermines its allegation of imminent, irreparable harm. *See Garcia v. Google Inc.*, 786 F.3d 733, 746 (9th Cir. 2015) (en banc). The delegation of authority to Alaska was reaffirmed eight years ago. Moreover, even if the challenge is construed narrowly, Plaintiff could have brought suit challenging the BiOp *over a year ago*. Instead, Plaintiff waited until two weeks before NMFS had multiple deadlines[15], Dkt. # 28 at 2, manufactured an emergency, notably in the midst of a pandemic, and now demands immediate action from the Court. This tactic is particularly vexing considering there is an available administrative process through which Plaintiff could have sought redress from NMFS. *See supra*. Moreover, Plaintiff could have sought injunctive relief last summer, prior to last year's summer fishery opening, when the predicted Chinook abundance in coastal waters was notably less than predicted for this year, but chose not to do so. Plaintiff's "long delay before seeking a preliminary injunction implies a lack of urgency and irreparable harm." *Oakland Tribune v. Chronicle Publ'g Co*., 762 F.2d 1374, 1377 (9th Cir. 1985).

IV. The Balance of Equities and Public Interest Weigh Against Injunctive Relief.

"In exercising their sound discretion, courts of equity should pay particular regard for the public consequences in employing the extraordinary remedy of injunction." *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982) (citation omitted). In cases involving the ESA, "the balance of hardships and the public interest tip heavily in favor of endangered species." *Sierra*

[15] This is not the first case in which Plaintiff has submitted a filing that appears to be aimed at conflicting with NMFS's schedule. *See, e.g.*, *Wild Fish Conservancy v. Nat'l Park Serv.*, No. C12-5109 BHS, 2012 WL 6615925, at *4 (W.D. Wash. Dec. 19, 2012) ("In light of the significant procedural and substantive deficiencies in Plaintiffs' motion, the timing of the motion must be addressed. . . . [T]he fact that the motion was noted for consideration three days before a highly relevant government opinion was scheduled to be issued, the motion appears to be designed to be strategically preemptive.").

Club v. Marsh, 816 F.2d 1376, 1383 (9th Cir. 1987) (citation omitted). Here, Plaintiff ultimately seeks to interfere with a comprehensive suite of actions designed by NMFS to benefit SRKW. Interfering with a strategy to benefit endangered SRKW is decidedly not in the public interest.

NMFS recognizes that after the SRKW population grew in size from its historical low, there has been a recent declining trend. But NMFS and Plaintiff's declarants diverge on the cause of this trend, and thus the solution. Dr. Giles and Dr. Lacy focus on prey abundance as the sole limiting factor for SRKW, Dkt. # 14-2 ¶¶ 9-12; 14-3 ¶¶ 6.b, 18, 30-31, but recent data and studies demonstrate that the correlation between fisheries and SRKW health and status is not as strong as once thought. Rather, NMFS believes that a combination of limiting factors working in concert are having a deleterious effect on SRKW. That is precisely why NMFS, with its regional partners, is mitigating adverse effects through a number of mechanisms in the BiOp. *See* Purcell Decl. ¶¶ 8-10; Barre Decl. ¶¶ 18-19. Taken together, these mitigating activities are designed to ensure not only that SRKW survive, but that they recover as a population.

Although it may be convenient for a Washington fishing interest group to cast blame at an Alaskan fishing interest group, finger pointing over who catches more fish does not advance the overall health and status of SRKW and thus the public interest. It is NMFS's scientific opinion that only a collective strategy will work, and that is why NMFS compiled the BiOp with its combined actions for the benefit of SRKW. Plaintiff's attempt to interfere in this strategy for its own parochial interests is decidedly not in the public interest. The balance of harms and public interest tip against injunctive relief.

CONCLUSION

For the foregoing reasons, this Court should deny Plaintiff's Motion.

Dated: May 11, 2020

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on May 11, 2020, I electronically filed the foregoing with the Clerk of the Court for the United States District Court for the Western District of Washington by using the CM/ECF system, which will serve a copy of the same on the counsel of record.

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The Honorable Michelle L. Peterson

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

WILD FISH CONSERVANCY, a Washington non-profit corporation,

Plaintiff,

v.

BARRY THOM, in his official capacity as Regional Administrator of the National Marine Fisheries Service; CHRIS OLIVER, in his official capacity as the Assistant Administrator for Fisheries of the National Marine Fisheries Service; NATIONAL MARINE FISHERIES SERVICE; WILBUR ROSS, JR., in his official capacity as Secretary of the United States Department of Commerce; and UNITED STATES DEPARTMENT OF COMMERCE,

Defendants.

and

ALASKA TROLLERS ASSOCIATION,

Intervenor-Defendant.

No. 2:20-cv-0417-MLP

DEFENDANT-INTERVENOR ALASKA TROLLERS ASSOCIATION'S BRIEF IN OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION

ORAL ARGUMENT REQUESTED

Plaintiff Wild Fish Conservancy's motion for the issuance of a preliminary injunction to stay the Defendant National Marine Fisheries Service's (NMFS) authorizations of commercial Chinook salmon fisheries in federal waters off the coast of southeast Alaska, which is set to commence on July 1, 2020, is without merit and should be denied.

INTRODUCTION

This is the second of two separate lawsuits brought in this Court by the plaintiff, Wild

Fish Conservancy (WFC), to further restrict or eliminate Pacific coastal commercial salmon fisheries, ostensibly in order to prevent starvation of the endangered Southern Resident Killer Whale (SRKW) that frequents the waters of the Salish Sea (Puget Sound and the Strait of Georgia in British Columbia). The first such lawsuit, also filed against the National Marine Fisheries Service (NMFS) in this same Court last year, was joined by the Center for Biological Diversity (CBD).[1] CBD did not join in this lawsuit, however. Curiously, plaintiff Wild Fish Conservancy makes no mention of the earlier companion filing despite the fact it is still pending. The 2019 lawsuit targeted commercial salmon fisheries in federal waters off Washington, Oregon, and California, and was stayed by Order of the Court, dated July 19, 2019, until May 1, 2020, to allow NMFS to re-initiate consultation and issue a new 2020 Biological Opinion (BiOp) for the Pacific Fishery Management Council Salmon Fishery Management Plan for SRKW, relating to salmon fisheries in the Exclusive Economic Zone (EEZ) (3-200 miles) off the coasts of California, Oregon, and Washington. The BiOp was completed and issued on April 29, 2020. Following issuance of the new BiOp, NMFS is seeking dismissal of the case as now moot.[2]

A copy of the newly issued BiOp is attached as Exhibit "A" to the Declaration of Thane Tienson. As will be observed (see pages 90-99), salmon fisheries in federal (EEZ) waters off Washington, Oregon, and California are all being further reduced this year to make greater numbers of Chinook salmon available to the SRKW as they ply their traditional feeding grounds, especially those from Cape Falcon on the northern Oregon coast (North of Falcon or " NOF") to the Canadian border of the Salish Sea and other measures including increased hatchery salmon production, efforts to improve salmon habitat and further restriction on vessel traffic near whales are also being undertaken to assist the SRKW population. *Id.* p. 95. Canada, too. just announced additional protective measures for the SRKW for this year and beyond

[1] *See Center for Biological Diversity and Wild Fish Conservancy v. National Marine Fisheries Service, et al.*, Case No. 2:19-cv-00487-MJP.

[2] *Id.*, Dkt. #27, April 30, 2020.

(https://www.coastalnewstoday.com/post/canada-government-of-canada-announces-second-year-of-enhanced-measures-to-protect-southern-resident-killer-whales) (Tienson Decl., Ex. "B". Not content with the substantial reductions in all west coast commercial salmon fisheries that have been instituted this year, and in past years, to in part protect the SRKW and in part to protect Endangered Species Act (ESA) listed salmon species, the Wild Fish Conservancy, acting alone in this lawsuit, now seeks to close entirely southeast Alaska's commercial summer salmon troll fishery. That fishery is located many hundreds of miles away from SRKW traditional feeding areas in the Salish Sea and off the coast of British Columbia, Washington, Oregon, and California. (See April 29, 2020 BiOp, pp. 90-91, 97, Thane Tienson Decl., Ex. "A"; Deborah Lyons Decl. ¶¶ 15, 28).

As explained by Dr. Daniel Schindler in his Declaration, there is no credible scientific basis for closing this year's southeast Alaska summer salmon troll fishery. As a biologist with great expertise in the relationship between Pacific Coast salmon fisheries and the SRKW (Dr. Schindler is a co-author of the Final Report of Independent Scientific Panel on the Effects of Salmon Fisheries on the Southern Resident Killer Whales, attached as Exhibit “B” to his Declaration), Dr. Schindler states that closure of the fishery would have no more than a "trivial" impact upon Chinook salmon numbers in SRKW feeding grounds and not appreciably aid in SRKW survival. (Schindler Decl. ¶ 9) Moreover, closure of the fishery would wreak economic havoc on southeast Alaska troll fishermen and women and all of southeast Alaska's remote fishing-dependent communities, especially this year, when the COVID-19 pandemic has forced cancellation of cruise ships to southeast Alaska resulting in an accompanying dramatic reduction in tourism revenue, a large source of livelihood for many of these beautiful but remote communities. (Decl. of James Calvin ¶¶ 9-11).

None of the criteria applicable to preliminary injunction motions can be satisfied by the plaintiff. There is no immediate threat of irreparable injury, little likelihood the plaintiff will prevail at trial, and the balance of hardships tips decidedly against the plaintiff. Accordingly, the

Motion should be denied.

STANDARD FOR PRELIMINARY INJUNCTION

The traditional equitable criteria for granting preliminary injunctive relief in the Ninth Circuit are:

(1) A strong likelihood of success on the merits;
(2) The likelihood of irreparable injury to the plaintiff if preliminary relief is not granted;
(3) A balance of hardships favoring the plaintiff; and
(4) Advancement of the public interest by granting the requested injunction.

Earth Island Inst. v. Carlton, 626 F.3d 462, 469 (9th Cir. 2010);*Winter v. NRDC, Inc.*, 555 U.S. 7, 20 (2008). Here, Plaintiff, Wild Fish Conservancy, fails to meet those standards.

LEGAL ARGUMENT

A. WFC is Not Likely to Succeed on the Merits.

1. NMFS Complied with the Endangered Species Act.

"A preliminary injunction is an extraordinary remedy never awarded as of right." *Winter, supra,* 555 U.S. at 9, 24. In its Complaint, Plaintiff contends Defendants violated § 7(a)(2) of the ESA, 16 U.S.C. § 1536(a)(2), by adopting and implementing the 2019 Southeast Alaska (SEAK) BiOp and its Incidental Take Statement (ITS), and by continuing to authorize and manage salmon fisheries in southeast Alaska without ensuring that such fisheries will not jeopardize the continued existence of the endangered SRKW and the threatened Puget Sound, Lower Columbia River, Upper Willamette River, and Snake River fall-run Chinook salmon Evolutionarily Significant Units (ESUs) or destroy or adversely modify the endangered SRKW critical habitat. Second, Plaintiff contends the NMFS 2019 BiOp is arbitrary, capricious and an abuse of discretion and not in accordance with the law and, finally, that NMFS violated the National Environmental Policy Act (NEPA) by adopting and implementing the 2019 SEAK BiOp and its Incidental Take Statement (ITS) or, alternatively, by failing to prepare a new or supplemental Environmental Assessment (EA) to determine whether an Environmental Impact Statement (EIS) is required. See Complaint pp. 27-28, ¶¶ 114-119.

The Defendants have extensively briefed the issue of whether Plaintiff is likely to succeed on the merits on any of its claims and concluded it will not. Defendant-Intervenor ATA agrees and joins with Defendants' analysis of Plaintiff's claims and incorporates it by reference. Significantly, southeast Alaska is not even identified as part of the "critical habitat" of the SRKW in conjunction with its listing under the ESA. (Tienson Decl., Ex. "A", pp. 36-37).

The salmon of the Pacific west coast are managed to benefit fisheries from southeast Alaska to the central California coast. This was first formally recognized in the Stipulation and Order entered into by tribes and states in *Confederated Tribes and Bands of the Yakama Indian Nation, et al. v. Malcolm Baldrige, et al.*, 605 F. Supp. 833, 834 (W.D. WA 1985). That Stipulated Order expressly provides "for a fair interstate domestic allocation of Chinook salmon resources originating in Washington, Oregon and Idaho and migrating to waters in and adjacent to Alaska". Shortly thereafter that same year (1985), the first U.S./Canada Pacific Salmon Treaty was signed after over a decade of negotiation providing a detailed framework for allocating salmon harvest between the U.S. including Alaska and Canada. *Confederated Tribes and Bands of the Yakama Indian Nation, et al. v. Malcolm Baldrige, et al.*, 898 F. Supp. 1477, 1481 (W.D. WA 1995); Deborah Lyons Decl. ¶¶ 10-19. Plaintiff's contention that the Pacific Northwest states have an implied possessory right to all salmon that was spawned or reared in hatcheries (most of them federal) and natal streams in their waters is thus completely meritless. Those salmon were produced with the intent and clear understanding that Alaskan fisheries should benefit from their production, especially since these salmon spend the vast majority of their lives feeding in Alaskan waters. Lyons Decl. ¶ 15.

The Pacific Salmon Treaty has been renegotiated several times over the past 35 years, most recently just last year in 2019. Significantly, each such renegotiation has resulted in reductions in the allocation of Chinook salmon to southeast Alaska fishermen and women. In 2019, yet another 7.5% reduction was imposed, on top of a 15% reduction from the earlier 2009 Treaty. Deborah Lyons Decl. ¶¶ 10, 27-30. As both the 2019 SEAK BiOp and the newly issued

April 29, 2020 Pacific Salmon Fishery BiOp for SRKW make very clear, the management of Pacific Salmon harvest is an ongoing, extremely complicated, and scientifically informed process. Conservation is an overriding concern. Annual allocation of salmon harvest between all competing user groups is always subject to in-season adjustments depending upon catch results and abundance when compared to pre-season projections in order to ensure escapement goals are met and that fisheries are sustainable.

With the listing of the Southern Resident Killer Whale in 2005 as an endangered species under the Endangered Species Act (ESA), beginning in 2009, NMFS and fisheries managers first consulted on the effects of west coast salmon fisheries on the SRKW population and the needs of that particular Distinct Population Segment (DPS) of killer whales together with its preferred diet of Chinook salmon into their management and allocation decision-making process. Tienson Decl., Ex. "A" p. 6. In April 2019, NMFS reinitiated consultation in the wake of new information regarding SRKW and their primary prey, Chinook salmon, and the Pacific Fishery Management Council (PFMC) formed the ad-hoc SRKW workgroup to reassess the relationship between Chinook and SRKW and develop a long-term management approach. *Id.* On April 29, 2020, less than two weeks ago, a new BiOp was issued by Defendant NMFS setting forth its recommendations for additional restrictions on the salmon fishery and additional measures to help meet dietary needs of the SRKW. *See* Tienson Decl., Ex. "A" pp. 8-11, 90-99.

Despite Plaintiff's claim that a shut-down of the southeast Alaska summer Chinook troll fishery will translate into substantially more Chinook salmon for the SRKW and that such a closure is necessary to meet the requirements of the ESA, the best available science now indicates that there is no clear relationship between salmon abundance and the health of the SRKW population. Tienson Decl., Ex. “A” p. 84; Schindler Decl. ¶ 8.i.). As set forth in the attached Declaration of Dr. Daniel Schindler, the most likely beneficiaries of a closure of the southeast Alaska summer troll fishery will be the Northern Resident Killer Whale (NRKW) and Alaska killer whale populations, which swim in the same waters off British Columbia and the

Washington coast frequented by the SRKW, except that their populations are healthy and growing rapidly. (Schindler Decl., ¶ 8.c.). Importantly, the NRKW and the Alaska killer whale populations prefer the same large, mature Chinook salmon as do the SRKW and feed largely in the same grounds. *Id.*, ¶ 8.b. This fact alone suggests the absence of a relationship between salmon abundance and SRKW health.

As Dr. Schindler states, the analysis performed by Plaintiff's expert Dr. Lacy is "misleading" and his opinions regarding the relationship between the southeast salmon troll fishery and SRKW health are "speculative." *Id.* ¶ 8.i. In addition to the "natural mortality", *i.e.*, Chinook salmon eaten by other mammals including the robust NRKW and Alaska killer whale populations, any Chinook salmon "saved" by closing the southeast Alaska summer Chinook troll fishery must then survive the long gauntlet of other commercial, recreational, and tribal fisheries off the coasts of southeast Alaska, Vancouver Island, and Washington before they can be fairly considered an available food source for the SRKW in their traditional feeding grounds during the summer months in the Salish Sea and off the coast of Washington. *Id.*, ¶ 8.h. Dr. Schindler opines that, as a consequence, only a "trivial amount" of Chinook salmon foregone in the southeast summer troll fishery would be likely available for SRKW consumption. *Id.* ¶ 9.

Here, the best scientific and commercial data available is very recent and reliable and simply does not support Plaintiff's contention that closing southeast Alaska's summer Chinook troll fishery will confer any meaningful benefit upon the SRKW population nor appreciably aid in their survival or recovery. That is particularly true during years like this one when Chinook salmon abundance is projected to be well above critical abundance thresholds. In sum, the 2019 SEAK BiOp provides ample scientific support for NMFS to authorize this summer's troll fishery.

Courts assess a federal agency's compliance with the ESA under the Administrative Procedure Act (APA) 5 USC §§ 7011-706 standard of review. *See Western Watersheds Project v. Kraayenbrink*, 632 F. 3d 472, 496 (9th Cir. 2011) *cert. den. sub nom, Public Lands Council v. Western Watersheds Project*, 132 565 U.S. 928 (2011); *Village of False Pass v. Clark*, 733 F. 2d

605, 609-10 (9th Cir. 1984). As discussed, "this standard is highly deferential, presuming the agency action to be valid." *Ca. Wilderness Coalition v. DOE*, 631 F. 3d 1072, 1084 (9th Cir. 2011). The ESA requires that agencies "ensure that any [agency] action . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [critical] habitat of such species." 16 USC § 1536(a)(2). To accomplish this, NMFS must use "the best scientific and commercial data available". 16 USC § 1536(c)(1). This requirement means that agencies must support their conclusions with accurate and reliable data. So long as an agency considers all relevant data, it may rely on that evidence even when it is imperfect, weak, and not necessarily dispositive. *See Greenpeace Action v. Franklin*, 14 F. 3d 1324, 1336-37 (9th Cir. 1992).

The court is required to grant "considerable discretion to agencies on matters requiring a high level of technical expertise". *Ecology Center v. Castaneda*, 574 F. 3d 652, 658-59 (9th Cir. 2009). It is not the court's role to weight competing scientific analyses. *Id.* In essence, a court determines whether the agency "considered the relevant factors and articulated a rational connection between the facts found and the choice made." *Pac. Coast Fed. of Fishermen's Assn v. NMFS*, 265 F. 3d 1028, 1034 (9th Cir. 2001). Deference to the agency's considered judgment is especially appropriate where, as here, the issues involved are scientific matters within NMFS's area of expertise. *Marsh v. Oregon Natural Resources Council*, 490 U.S. 360, 377 (1989); *Earth Island Institute v. U.S. Forest Service, supra*, 351 F. 3d at 1301. Plaintiff is not therefore likely to prevail on its ESA claim .

2. NMFS Did Not Violate NEPA or the APA.

NEPA claims are also reviewed under the APA. Under the deferential standard applied to APA cases, a court will uphold an agency's decision unless it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law. 5 USC § 706(2)(A). Federal agencies must undertake a "full and fair" analysis of the environmental impacts of their activities. 40 CFR § 1502.1. In order to accomplish this, NEPA imposes

procedural requirements designed to force agencies to take a single "hard look" at environmental consequences. *Earth Island Institute v. U.S. Forest Service*, 351 F. 3d 1291, 1300 (9th Cir. 2003). NMFS did that.

Plaintiff contends that the agency was required to prepare a new or supplemental EA or even an EIS. There is no reliable evidence to show that the studies and information relied upon by NMFS were likely incorrect or that the studies and information NMFS relied upon regarding the SRKW population changed sufficiently to allow this Court to conclude that NMFS' actions were arbitrary, capricious, or an abuse of discretion or not in accordance with the law. To the contrary, the studies and information referenced in the 2019 SEAK BiOp including the 2012 Independent Scientific Panel Study of the Effects of Salmon Fisheries on the SRKW Population that Dr. Schindler co-authored, demonstrate that the BiOp and ITS are not just supported by evidence, but by the best available scientific evidence. In sum, Plaintiff has not shown that it is likely to prevail on any of its claims.

B. Neither the Plaintiff nor the SRKW nor the identified Chinook Salmon ESUs will Suffer Irreparable Injury if Preliminary Relief is not Granted.

Irreparable harm is harm that the court could not remedy even if the moving party ultimately prevailed on the merits on the action. *See Amoco Production Company v. Village of Gambell*, 480 U.S. 531, 545 (1987). To show irreparable harm, the moving party must show more than inconvenience or speculative injury. *Younger v. Harris*, 401 U.S. 37, 46 (1971), *Caribbean Marine Services Company v. Baldridge*, 844 F. 2d 668, 674-76 (9th Cir. 1988) (reversing grant of preliminary injunction). The moving party must instead present facts demonstrating immediate threatened injury. *Id.* As set forth in the declarations of Dr. Daniel Schindler, and those submitted by Defendants, the closure of the southeast Alaska salmon troll fishery and the accompanying foregone harvest of Chinook salmon, at best, translates into a "trivial amount" of that projected foregone harvest becoming available for consumption by the SRKW. (Schindler Decl. ¶ 9). Virtually none of the Chinook salmon that would otherwise be

caught in the troll fishery (a relatively small number migrating Chinook) would likely survive the "gauntlet" of predators between southeast Alaska and their natal streams to successfully spawn, including the healthy, 310-member NRKW population, which is not endangered and has "more than doubled" and, indeed, almost tripled in size in recent years and which frequents the waters of southeast Alaska and British Columbia, and also targets large, mature Chinook salmon for its diet. Schindler Decl. ¶¶8.c., h.

Plaintiff has thus not demonstrated a likelihood of irreparable harm. In the Ninth Circuit, the standard for such a showing considers whether the action sought to be enjoined "will reduce appreciably [the species'] likelihood of survival or recovery or appreciably diminish the value of their critical habitat. *Pac. Coast Federal of Fishermen's Assn. v. Gutierrez*, 606 F. Supp. 2d 1195, 1207 (E.D. Cal. 2008) (citing *Nat'l Wildlife Federation v. Nat'l Marine Fisheries Service*, 524 F. 3d 917, 931 (9th Cir. 2007)). In that case, the court accepted the FWS' definition of "appreciably diminish" to mean "considerably reduce". *Id.* at 1208 (citing USFWS/NMFS, ESA Section 7C Consultation Handbook (March 1998) at 4-34). That same definition should apply here. Defendant-Intervenor submits that Plaintiff has failed to carry its burden of proof to demonstrate that the southeast Alaska summer troll fishery will "appreciably diminish" or "considerably reduce" SRKW's likelihood of survival or recovery or appreciably diminish the value of their critical habitat. If a plaintiff fails to demonstrate a reasonable likelihood of irreparable harm, the court need not address the remaining elements of the preliminary injunction standard. *Center for Food Safety v. Vilsack*, 636 F. 3d 1166, 1174 (9th Cir. 2011). Accordingly, Plaintiff's Motion for Preliminary Injunction should be denied.

C. Balance of Hardships and the Public Interest.

Contrary to Plaintiff's position, the law does not allow the court to "abandon a balance of harms analysis just because a potential environmental injury is at issue." *The Lands Council v. McNair*, 537 F. 3d 981, 1005 (9th Cir. 2008) "Injunctive relief is an equitable remedy, requiring the court to engage in the traditional balance of harms analysis, even in the context of

environmental litigation." *Forest Conservation Council v. US Forest Service*, 66 F. 3d 1489, 1496 (9th Cir. 1995). Balancing the equities in this case requires comparison between the environmental harms claimed by the plaintiff on the one hand, the public interest as asserted by NMFS, and the economic interests of Intervenor.

Defendant-Intervenor submits the environmental injuries claimed by Plaintiff to result from allowing the SEAK summer troll fishery to proceed are at best speculative. All but a "trivial amount" (Schindler Decl. ¶8.i.) of that foregone troll fishery harvest would be consumed by other predators, including very healthy killer whale populations in British Columbia and southeast Alaska, and the commercial and sport fisheries that the "saved" salmon would have to contend with to survive their long, perilous journey south before they could fairly be considered an available food source for the SRKW. Plaintiff's claim of irreparable environmental injury, harm to the SRKW because of the Chinook salmon caught in the southeast Alaska troll fishery, has not been proven and would be unlikely to occur anyway given both the projected abundance of salmon off the west coast this year and the dubious relationship between such high salmon abundance levels and the SRKW population health.

The injuries suffered by Defendant-Intervenor Alaska Trollers Association if the requested injunction is granted, on the other hand, will be hard, certain, and substantial economic losses – particularly the loss of jobs and the harm to local, fragile economies in southeast Alaska. It would have devastating consequences on the 1,400 participants in the southeast Alaska summer salmon troll fishery who would be thrown out of work and cause an additional 250 job losses on fish processing employment with more job losses and/or reduced wages for others economically dependent upon the troll fishery, such as fuel dock operators, vessel repair yards, bait suppliers, and others. (*See* Decls. of James Calvin ¶¶ 4, 5, 8-11; Matthew Donohoe ¶¶ 3-5, Paul Olson ¶¶ 17-20; Deborah Lyons ¶ 46; and Dennis Watson, ¶¶ 3-5. Senior economist James Calvin estimates the total economic loss to the narrow-based southeast Alaska economy resulting from closure of this summer's troll fishery at $85 million – in a region already likely to be hard

hit this year by the loss of its only other large source of summer revenue – cruise ships and tourism.

In *Amoco Production Company v. Village of Gambell, supra*, the Supreme Court concluded that economic concerns – the loss of $70 million dollars that an oil company had committed to exploration – outweighed environmental concerns when the claimed injury to subsistence resources from exploration "was not at all probable" in upholding the trial court's denial of injunctive relief. 480 U.S. at 545. The same is equally true here and the same result should obtain.

D. THE BOND REQUIREMENT SHOULD NOT BE WAIVED.

The purpose of the preliminary injunction bond requirement is to cover the costs and damages suffered by the party wrongfully enjoined. *See* Fed. R. Civ. Pro. 65(c); *Grupo Mexicano de Desarrollo S.A. v. Alliance Bond Fund, Inc.*, 527 U.S. 308, 340 (1999). ATA, its members and fellow troll fishers and the Alaska communities in which they live will suffer a direct economic loss of $37.4 million if a preliminary injunction issues. James Calvin Decl. ¶¶ 6, 11. Any bond amount should cover this economic damage.

Further, Plaintiff has not shown, as it must, that posting a bond would cause undue hardship. *See Earth Island Inst. v. U.S. Forest Serv.*, No. 2:05-cv-1608, 2006 WL 3359192, *1 (E.D. Cal. Nov. 20, 2006); *Save Our Sonoran v. Flowers*, 408 F. 3d 1113, 1126 (9th Cir. 2005); *see also Habitat Educ. Ctr. v. U.S. Forest Serv.*, 607 F. 3d 453, 459-60 (7th Cir. 2010) (no blanket bond waiver for nonprofits).

CONCLUSION

For all the foregoing reasons, Plaintiff's Motion for Preliminary Injunction should be denied.

Dated this 11th day of May 2020.

s/ Thane W. Tienson
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CERTIFICATE OF SERVICE

I hereby certify that on May 11, 2020, I served the foregoing **DEFENDANT-INTERVENOR ALASKA TROLLERS ASSOCIATION'S BRIEF IN OPPOSITION TO PLAINTIFF'S MOTION FOR PRELIMINARY INJUNCTION** on the following individual(s):

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☒ by the Court's CM/ECF system to the email addresses listed above
☐ by facsimile pursuant to the fax numbers listed above
☐ by email to the email addresses listed above
☐ by overnight delivery to the addresses listed above
☐ by first class mail to the addresses listed above.

s/ Kathy Baker
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