



# Animal Welfare Institute

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October 7, 2018

Puget Sound Partnership  
ATTN: SRKW DRAFT REPORT  
326 East D Street  
Tacoma, WA 98421

Dear Task Force:

On behalf of the members and constituents of the Animal Welfare Institute (AWI), I am submitting these comments on the current draft report of Governor Inslee's Southern Resident Killer Whale Recovery and Task Force (Task Force). It is very clear, given the increase in attendance by the public at the Task Force meetings over time (p. 6; all parenthetical page numbers are from the draft report), that public interest in the recovery of the southern resident orcas (SRKWs) is intense and every effort should be made to reflect that interest in forceful and novel action rather than more study and discussion.

## Introduction

The ultimate goal of the Task Force and its deliberations should be a restoration of functional ecosystems in the Columbia River Basin and Washington state waters. This will not be achieved by relying ever more heavily on technology (such as improved fish passage past barriers, including dams and culverts) or human intervention (such as increased hatchery output). It will only be accomplished by restoring river basin salmon and coastal habitats and reducing human impacts on salmon and orcas in the open ocean.

AWI supports many of the potential recommendations and actions in the draft report by the Task Force and its working groups. However, we also believe several of the potential actions relegated to Appendix 4 in the draft report should be brought forward to the main body of the report, as they appear to fit the criteria that a recommendation a) should have immediate benefit to the orcas or b) should start immediately, to have the greatest benefit to orcas in the future (see e.g., p. 20). We also find a small number of the potential actions included in the main body of this draft report to be misguided and strongly recommend their removal from the next version of the report, which will be available for public comment later this month.

All of our specific suggestions for the next version of the report are in *bold italics*.

## Overall comments

While the draft report acknowledges that "sacrifice" (p. 7) will be needed to achieve the goal of SRKW recovery, it nevertheless does little to move the potential suite of management actions forward from the current status quo. Some of the potential actions in the main body of the report would result in genuine progress<sup>1</sup>; however, for the most part they focus on variations of the

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<sup>1</sup> See, e.g., "Potential hydropower recommendation 2: In early 2019, the governor should direct WDFW, in conjunction with regional salmon recovery organizations, to compile and prioritize a list of barriers

same actions already being undertaken or considered (such as hatchery programs, noise reduction, or regulation of vessel behavior around whales), as well as on additional study, discussion, and monitoring. All of these are obviously necessary on an ongoing basis and we support them in general, but they are disappointingly far from being sacrifices on anyone's part. At this point, the Task Force needs to reach beyond "low-hanging fruit" options.

We also note that throughout the draft report, there is insufficient emphasis on measuring success of any potential action or, for that matter, actions currently being undertaken. That is, the draft report notes that millions of dollars are being spent on efforts to restore salmon, but little if any space is devoted to discussion of metrics used to determine the success of any of these current efforts, or indeed if any of these current efforts have already shown measurable success. As an example, the draft report notes, "A variety of management actions have been implemented with the goal of reducing salmon predation by birds, including controlling the size of breeding populations on the lower Columbia estuary and some interior stretches of the Columbia River" (p. 12). However, it does not clarify whether these actions have been measurably successful at reducing bird predation on salmon.

Spending considerable sums of money on, *inter alia*, predator control programs, without establishing a strategy to effectively monitor the programs' success at reducing predation, is neither fiscally nor logistically prudent. This kind of management—doing things that intuitively seem as though they should work but act on systems that are so complex as to potentially lead to counter-intuitive results—is the epitome of "throwing money" at a problem while in effect not solving it. ***AWI strongly urges the Task Force to propose metrics for measuring success for every potential action or recommendation included in the final report, wherever possible.*** Without these, the Task Force's work is left unfinished.

Our detailed comments below will focus most on those potential actions and recommendations that we feel are genuinely progressive and novel and stand to do the most to achieve functional ecosystem restoration. We will also describe why some potential actions are strongly counter-indicated. For those potential actions and recommendations for which we do not offer specific comments, we are either neutral or generally supportive.

AWI acknowledges that some of the progressive actions we support, particularly those found in Appendix 4 and not selected by the Task Force for inclusion in the main body of this draft of the report, would be relatively costly to certain industries or the state budget. However, we assume this is the sacrifice to which the draft report alludes; frankly without such sacrifice, the Task Force, the Governor's office, and the federal government will not achieve SRKW recovery. The SRKWs and Pacific salmon stocks do not need more study (although, as noted above, some important studies should continue and all efforts undertaken should be monitored on an ongoing basis to measure effectiveness). They need bold action, action that may cause short-term pain for some economic sectors such as fisheries, but will lead to long-term gain for all. The Pacific Northwest without the SRKWs is inconceivable but inevitable unless bold action is taken. The Pacific Northwest without salmon is even more unfathomable, but sacrifice is indeed needed to save them.

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where removal would yield high benefit to Chinook and provide this list to the task force by June 2019. The legislature via the various salmon recovery accounts *should ensure funding for removal of the high priority barriers* in its 2020 supplemental capital budget" (p. 24, emphasis added).

## Detailed Comments

### *Key threats*

We note that the draft report separates “Harvest” from “Predation.” This may seem appropriate to many and a trivial point, but ecologically there is no difference between them. Human fisheries, commercial and recreational, are predators. Given that the goal of the Task Force and the entire effort by Governor Inslee’s office should be to restore functional ecosystems, considering human predation separately from wildlife predation perpetuates the myth that fish removal by humans is somehow less significant ecologically than removal by predatory wildlife.

This is a myth for two reasons: 1) from an ecological perspective, a predator is a predator—they kill fish; and 2) fisheries remove at least 200 times more adult Chinook salmon from the ecosystem as pinnipeds do at “pinch points” such as Bonneville Dam (1,337,301 Chinook in 2017 by Pacific Salmon Treaty Fisheries versus 6,663 salmon annually—not all of which were Chinook—by pinnipeds at Bonneville Dam, p. 10). At best, “Harvest” is a subset of “Predation” (“Predation” should have two sub-sections: “fisheries” and “wildlife predators”). In addition, ***the report should provide the percentage of the adult run represented by the 1,337,301 Chinook taken annually by treaty fisheries, as it does for the 6,663 salmon consumed annually by pinnipeds at Bonneville Dam.***

We note, under forage fish, that the draft report does not include a discussion of second order impacts; that is, there is no reference to the impact of predators such as pinnipeds and birds on fish that eat forage fish or salmon. It is well known that terrestrial predator control programs often have counter-intuitive results, *inter alia* because targeted predators may also prey on species that prey on the species managers seek to protect. For example, if pinnipeds also prey on native and/or non-native fish species that prey on juvenile salmon, removing the pinnipeds may lead to increased populations of these fish and thus more predation on juvenile salmon, even if predation on adult salmon by pinnipeds declines. The overall effect of removing pinnipeds thus may be detrimental to salmon. ***The report should include some discussion of these second order effects*** (references could include work by, e.g., Daniel Pauly and Kristin Kaschner).

We also note that the draft report does handle human predation on a par with wildlife predation when discussing forage fish, as it should when discussing salmon fisheries (see above). We find it extremely significant that human fisheries may be having a large impact on forage fish, yet ultimately the draft report puts less emphasis on curtailing human fisheries than it does on controlling pinniped and bird predators (see below). AWI finds the focus on removing wildlife predators of salmon and forage fish, versus closing or severely curtailing fisheries, to be misdirected.

We find the relatively abbreviated attention paid to the risk of oil spills in this section and in the potential actions and recommendations to be troubling. It is indeed a low risk outcome, but the potential impact is very high. When assessing risks to a species, managers often underemphasize low risk/high impact scenarios. The Task Force should not do the same. The discussion in the *Key threats* section is probably sufficient, but the potential high impacts of an oil spill are not really reflected in the potential recommendations offered later in the report (see pp. 29-33, where only two of 13 Potential Vessel Recommendations relate to the possibility of oil spills, and below).

### *Draft recommendations*

Two of the criteria for the working groups when developing their draft potential actions and recommendations were whether the potential action or recommendation would 1) have immediate benefit to the orcas or 2) need to start immediately to have the greatest benefit to orcas in the future (pp. 20, 29, 43). Some of our comments are related to these criteria, some are based on our concerns about threats or proposed solutions, and yet others are related to our belief that bold(er) action is required to save the SRKWs from extinction. We also note that several of the Task Force's potential recommendations are suggestions for more studies or additional strategic discussions, which may be more easily implemented, but do not in fact have any immediate benefit to the orcas. We urge the Task Force to keep in mind the difference between what has immediate benefit and what is expedient.

### **Hatcheries**

Generally, we are concerned about any proposals to increase hatchery fish releases. In our view, hatchery programs have been developed more to benefit sport fishing than functional ecosystems. Also, as the draft report clarifies, the greater the number of hatchery releases, the greater the risk to wild runs (p. 9). We are grateful that the Task Force reflects this latter concern by offering only one potential recommendation (with three options) under this category. ***AWI supports Potential Hatchery Recommendation 1C, the combination of 1A and 1B, as the most comprehensive option.***

### **Hydropower**

We strongly support any potential recommendations that take concrete steps toward *removal*—as opposed to *modification*—of barriers to fish passage. The dams, culverts, and other barriers throughout the Columbia River Basin have had, in our opinion, the single most damaging impact on salmon stocks. Consequently, of the potential recommendations in the main body of the draft report, ***AWI strongly supports Potential Hydropower Recommendation 2 and we also support Recommendations 1 and 3, as these would provide funding for positive actions.***

We are disappointed that so few potential recommendations are offered in the draft report related to hydropower when, in our view, this is the single most important category of threat that must be substantively addressed to improve the recovery outlook of both salmon and the SRKWs. The Task Force notes that “[in] the Columbia River Basin, dams completely block passage to over 55 percent of the spawning and rearing habitat historically used by salmon” (p. 10). Improving fish passage over and through these barriers has been a major focus of salmon recovery efforts to date and has clearly been *insufficient* to recover salmon stocks. Fish ladders, spill, and other assists have been available to migrating salmon for some time and yet declines continue. These barriers have altered rivers and estuaries substantially, often to the point of eliminating 100% of essential types of habitat (p. 8). Dam *breaching* rather than fish passage improvement must be the primary focus (under hydropower and indeed all categories) of the Task Force in its final report.

We realize that this recommendation list may grow in the next report iteration, as the September 27 webinar had not yet taken place when this draft was distributed, but several of the Appendix 4 hydropower recommendations could have been included in this draft even without the webinar's input. We strongly urge the Task Force to be decisive and innovative when it comes to addressing the threat to the region's ecosystems posed by hydropower and other barriers (such as

dikes, bridges, bulkheads, culverts, and storm-water systems, per p. 7). We understand the value of hydropower to the region and are by no means suggesting all dams be removed, but without sacrifice and bold action related to this key threat, the SRKWs (and the salmon) will be lost.

### **Harvest and predation**

While we understand the rationale behind Potential Harvest Recommendation 4, we are concerned about its emphasis on closing salmon fisheries only when SRKWs are in an area. While this may make more adult Chinook available to the whales when they are in an important foraging area at any one moment, it does nothing to improve availability of prey for the long-term. We do not oppose this option, but ***AWI strongly urges the Task Force to recommend the pursuit of full closures of several important Chinook fisheries for some period, on the order of years, in both the United States and Canada, in order to maximize the probability of a greater number of adult Chinook returning to spawn.***

We noted above that, from data provided in the draft report, human fisheries remove on the order of 200 times more adult Chinook from the ecosystem than other predators at artificial pinch points annually. Closing the fisheries for adults of endangered salmon species and, as needed, forage fish is clearly called for at this moment of crisis for the salmon and the SRKWs. Not offering this option, from a Task Force charged with developing recommendations that will “have immediate benefit to the orcas” or “need to start immediately to have the greatest benefit to orcas in the future,” is a notable omission. We understand the economic forces opposing this option, but while costs must be considered, they should not be the basis for the Task Force’s decisions about which recommendations to make.

The failure of the Task Force to include a recommendation to fully close fisheries for Chinook for some set period of time—including a recommendation for the state government to urgently pursue negotiations with the necessary federal authorities to effect such closures outside of Washington waters and in Canada under the Pacific Salmon Treaty—while including recommendations to support federal legislation that expands lethal removal of pinnipeds (see below), is extremely disappointing. We understand that closing fisheries for some set period to allow recovery may be a lengthy process, especially given the treaty, but beginning that process clearly meets the criterion of needing “to begin immediately to have the greatest benefit to orcas in the future.”

Finally, ***AWI strongly opposes the inclusion of Potential Predation Recommendation 2A.*** It is absolutely unacceptable for the Task Force, whose recommendations are meant to reflect the best available science (p. 4), to support “efforts to amend the Marine Mammal Protection Act, or MMPA, to more effectively manage pinniped predation of salmonids in the Columbia River. The task force should join the governor in expressing public support for a Columbia River-specific amendment to the MMPA, which is currently under consideration in Congress” (p. 28).

This recommendation apparently refers to H.R. 2083 and S. 3119. If enacted, these bills would result in the pointless deaths of as many as 930 California sea lions a year. They rely on the assumption—untested and highly unlikely to be true—that removing sea lions that are found up the Columbia River will increase adult fish passage past Bonneville Dam because predation at this “pinch point” will be eliminated. However, short of a genuine cull that reduces the size of the sea lion population throughout its range (which, despite the size of the proposed removal program, will almost certainly not happen, as this kill rate is only 10% of the potential biological

removal level for California sea lions), predation at Bonneville will not be eliminated. Naïve sea lions will learn to exploit this “pinch point,” just as sea lions before them have done, and thus the predation rate may not even be slowed by much. Indeed, removing artificial pinch points is the only sure way to eliminate this risk. The proposed lethal removal program *will not work* and is being pursued purely for political expediency.

In addition, the bills to which the Task Force alludes vary in their requirements for lethal removal of sea lions. The Senate bill, S. 3119, requires humane removal, with methods approved by an Institutional Animal Care and Use Committee (IACUC), while H.R. 2083, a similar bill in the House of Representatives, does not. Regardless of which provision is enacted, only up to 250 individuals a year haul out on the traps established at Bonneville Dam<sup>2</sup>. The remaining animals to be killed under these bills (almost 700 sea lions) are therefore likely to be shot even if permit conditions require “humane euthanasia,” as there are no other reasonable field methods for lethal removal. Regardless, Potential Predation Recommendation 2A neither mentions nor supports the requirement for humane removal included in S. 3119.

Finally, it may ultimately be difficult to determine if predation has indeed declined. The Senate bill requires a report after three years on the efficacy of the bill’s provisions but the House bill has no reporting requirements. A conference between the two chambers regarding these differences may result in the failure to adopt the reporting provision from S. 3119. Potential Predation Recommendation 2A is vague and does not support the Senate’s reporting requirement. This is consistent with the draft report generally not insisting on metrics to determine if actions are proving effective over time.

***AWI strongly urges that, if this potential recommendation is retained in the next iteration of the report—which again, we strongly oppose—it specifically support the inclusion of the humane removal and reporting requirements found in S. 3119 when (and if, as the Senate bill has not yet passed the chamber) the bills go to conference.*** We also suggest the Task Force recommend an amendment that specifies metrics for success of the lethal removal program; for example, after some period of time, there should be an increase of X number of additional Chinook salmon spawning in the Columbia River Basin.

Politicians supporting H.R. 2083 and S. 3119 are pointing to the millions of dollars spent every year on salmon restoration efforts as proof of how much “failed” effort is being put into salmon restoration, claiming this therefore justifies an increased lethal removal of natural predators as a “last resort” (yet without any concomitant required decrease in fisheries quotas). However, these politicians offer no tangible evidence that these efforts would in fact be successful absent pinniped predation at artificial pinch points, which weakens the claim that decreasing pinniped presence through lethal removal will result in a measurable increase in salmon numbers.

### **Vessel and noise recommendations**

In general, ***AWI supports the potential recommendations of this section, especially those that recommend the establishment of a whale watching licensing scheme (e.g., Potential Vessel Recommendation 4).*** However, we note that this section has 13 potential recommendations,

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<sup>2</sup> AWI also notes that supporting H.R. 2083 and S. 3119 is not entirely consistent with Potential Predation Recommendation 1B, which recommends a pilot project to remove artificial haul-out sites in Puget Sound. The trap platforms at Bonneville, while not in Puget Sound, are themselves artificial haul-out sites, which is how they function as traps.

more than any other section, consistent with this threat being seen as “low-hanging fruit” for some time. However, this is inconsistent with the goal of the Task Force deliberations, which AWI perceived was to come up with bold and innovative proposals that would require sacrifice on the part not only of the whale watching industry but other sectors as well, such as recreational and commercial fisheries.

#### *Appendix 4*

***We strongly urge the inclusion in the main body of the report of the following potential actions and recommendations from Appendix 4, with additional details and discussion***, as we believe they fully comply with the criteria that recommendations should 1) have immediate benefit to the orcas or 2) start immediately to have the greatest benefit to orcas in the future. While we understand that some or all of these potential recommendations may be included in the Task Force’s 2019 report, we believe those we highlight below belong in the 2018 report, as a matter of urgency.

#### **Habitat**

***Potential habitat recommendation 14:*** Fund and complete an assessment of regulations relative to key Chinook and Southern Resident orca habitats and report on the effectiveness of existing regulations. Improve regulations based on findings.

This recommendation is relevant to AWI’s general concern about the draft report’s lack of focus on metrics and determining effectiveness of current and future actions. This recommendation focuses on assessing the effectiveness of existing regulations, which seems highly relevant to the goal of recovering SRKWs. If existing regulations are ineffective, then they should be either 1) discontinued; 2) modified until they are effective; or 3) replaced entirely with more effective actions. If they are ineffective, then this calls into question any decision to pursue actions (such as natural predator control) that are primarily based on the assumption that existing regulations and actions would be effective “if only.”

***Potential habitat recommendation 18:*** Have [the Department of] Ecology and local governments require emphasis on low-impact development practices and prioritize retrofits in urbanized areas in Southern Resident priority Chinook and coho salmon watersheds.

Clearly, emphasizing low-impact development *and* prioritizing retrofits of urbanized areas would improve and begin restoration of salmon habitat.

***Potential habitat recommendation 20:*** Direct state agencies to conserve important Southern Resident, salmon and forage fish habitat on state-owned and managed aquatic lands from future development.

#### **Hydropower**

Generally speaking, we urge inclusion of more of these potential recommendations in the next iteration of the report. We do not have the expertise regarding dams to be overly specific, but we certainly support moving the following recommendations to the main body of the report, as they seem likely to result in immediate benefits or should be started immediately for future benefits *and* they seem reasonable actions to take, at nominal or no additional cost. We especially urge the inclusion of potential action 15, as it recommends “advocacy” and “work” toward goals, rather than direct or expensive action from the state of Washington, yet still moves closer to

targeted dam removal, an action AWI believes is imperative to recover salmon and SRKWs. Potential action 16 is related to 15 and we support its inclusion as well.

Potential hydropower action 11: Support non-lethal dissuasion to reduce bird predation near dams.

Potential hydropower action 12: Develop a list of dams that have already been removed to benefit salmon and develop a list of priority projects for potential removal.

Potential hydropower action 15: Advocate that the US Army Corps unilaterally make a decision to stop operating the Lower Snake River dams and seek authority to breach the dams in near-term. Work to develop a mitigation package for affected communities and stakeholders, and to fund necessary hatcheries and habitat actions in the absence of mitigation funding depending on dam operations. Work to ensure the dams' energy is replaced with carbon-free alternatives.

Potential hydropower action 16: Pass an executive order in favor of Lower Snake River dam removal and replacement with carbon-free alternatives.

Potential hydropower action 18: Request that the federal Columbia River hydropower system NEPA process and related biological opinion issued by NMFS on the operations of the hydropower system fully consider the impact of the hydropower system on the Southern Resident orcas and recommend that the alternatives analysis fully consider, especially in light of climate change, a) increased spill system-wide up to 125 TDG, and b) breaching the lower Snake River dams.

Potential hydropower action 19: Oppose any additional extension of time to complete the federal Columbia River hydropower system NEPA review process.

## **Harvest and predation**

Potential harvest action 6: Further reduce the number of days open to harvest for both recreational and commercial fisheries in marine areas 4, 5, 6, and 7 (Strait of Juan de Fuca and San Juan Islands) in the months of June through September.

***This potential action should be revised from “Further reduce the number of days open to harvest for” to “Close ...” and add a time frame that is biologically relevant to salmon recovery (e.g., 5-10 years).*** Apparently this is something the state of Washington can do without amending the Pacific Salmon Treaty or consulting its management bodies.

While we understand the complexities of international regulation of salmon fisheries (see our comments above), both Canada and the United States are responsible for restoring salmon and protecting the SRKWs. Chinook are struggling almost everywhere in the northeast Pacific. Closing fisheries, commercial and recreational, for all Chinook stocks that spend any time as likely prey for the SRKWs (regardless of where they originate or where they spend the majority of their life cycle) should be a priority for both nations. These closures would of course be temporary but by necessity relatively prolonged. However, given the disparity in removals between human fisheries and predatory wildlife, predator control simply cannot be justified without also closing human fisheries. While closing these marine areas under the jurisdiction of Washington state are a start, ***AWI urges an expansion of this recommendation to include whatever actions are needed to begin a range-wide closure for Chinook salmon that spend any time as potential prey for SRKWs.***



*Potential predation action 5:* Integrate best management practices that discourage pinniped haul-outs into review and permitting of projects (e.g., docks, swim platforms, buoys, riprap) that could create haul-out sites at predation hotspots.

*Potential predation action 7:* The governor should support removing catch and size limits on nonnative predatory fish (including, but not limited to, walleye, bass, and channel catfish) to encourage removal of these predatory fish, where appropriate. Walleye, bass and channel catfish catch and size limits have been removed in the anadromous zones of the Columbia River and tributaries.

*Potential predation action 8:* Fund research into harassment devices for pinnipeds, specifically devices that target the middle ear reflex rather than painful high-intensity noise. Also research the use of drones. If successful, these might offer effective alternatives between lethal removal and inaction.

AWI finds this last potential action particularly appropriate, as its goal is to avoid the unnecessary and pointless deaths of hundreds of pinnipeds per year. Again, in part because there has been precious little examination of the effectiveness of existing regulations, the conclusion that the existing lethal removal program under Section 120 of the MMPA has been ineffective is, in our opinion, premature.

### **Forage fish**

All of the potential actions listed below seem likely to result in immediate benefit, need to start immediately for future benefits, or seem reasonable in terms of cost or required effort. We also think the establishment of baselines (#5) is essential, and also required under the National Environmental Policy Act (NEPA), to adequately measure success of any action. Therefore, this potential action seems vital to our recommendation above that the draft report focus more on requiring and providing metrics to measure effectiveness of actions.

We also note that there appears to have been less resistance within the Task Force to the idea of closing, rather than merely restricting, the forage fish fisheries (## 20, 21), as opposed to the salmon fisheries themselves. We realize this may be due to economic forces, but we strongly urge the Task Force to include potential closure of the salmon fisheries in the next iteration of their report as well.

*Potential forage fish action 5:* Complete the ongoing Puget Sound forage fish assessment to establish baseline condition/current condition for measuring future progress or loss against.

*Potential forage fish action 6:* Support and fund the Salmon Recovery Funding Board and Washington Coast Restoration Initiative nearshore projects this biennium to restore forage fish habitat.

*Potential forage fish action 8:* Monitor and enforce regulations to protect nearshore habitat.

*Potential forage fish action 9:* Increase public awareness and landowner education about the importance of properly functioning nearshore habitat and its relationship to Southern Resident orcas by expanding the current Puget Sound “Shore Friendly” outreach efforts via ESRP, including funding and other incentives for landowners to remove armoring and restore natural shorelines.

Potential forage fish action 13: Conduct development and redevelopment operational activities in a manner that does not affect spawning behavior; or disturb spawning substrate or sediment sources that support spawning including nearshore riparian shading in upper intertidal spawning areas.

Potential forage fish action 14: Inventory shoreline geomorphology and assess spawning beaches to identify locations where upper beaches have space for upslope/landward expansion and prioritize these areas for acquisition.

Potential forage fish action 15: Reduce anthropogenic sources of light pollution in spawning areas.

Potential forage fish action 20: Close commercial and recreational harvest of surf smelt in Puget Sound until a full inventory and assessment of existing population levels and impacts from harvest or benefit from reduced harvest has been completed.

Potential forage fish action 21: Close commercial and recreational harvest of herring in Puget Sound until a full inventory and assessment of population levels and impact from harvest or benefit from reduced harvest has been completed.

## **Vessels**

***AWI urges the inclusion of every potential action that refers to oil spills, including potential vessel action 15.*** We also support potential vessel action 19, as private ferries probably pose a greater risk to SRKWs, due to their speed and their tendency to stop and watch when orcas are sighted.

We thank Governor Inslee and the Task Force for the opportunity to offer input to this important process. We urge the consideration of our comments and look forward to the next version of this report.

Sincerely,

A handwritten signature in black ink, appearing to read "Naomi Rose", written in a cursive style.

Naomi A. Rose, Ph.D.  
Marine Mammal Scientist