



April 15, 2014

Via e-mail to sara@pac.dfo-mpo.gc.ca

Fisheries and Oceans Canada
SARA Secretariat
200 Kent Street
Ottawa, ON K1A 0E6

Dear Sirs/Mesdames:

Re: March 2014 Draft Action Plan for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada

Enclosed with this letter are our comments on the Draft Action Plan for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada ("Draft Action Plan"). The Department of Fisheries and Oceans ("DFO") released the Draft Action Plan for comment in March 2014 – nearly three years after publication of the 2011 Amended Recovery Strategy for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada ("Recovery Strategy"), and six years after the Recovery Strategy was first released.

These comments are made jointly by the David Suzuki Foundation, Georgia Strait Alliance, Raincoast Conservation Foundation and the Wilderness Committee, with the scientific and legal assistance of Ecojustice Canada. We sincerely thank DFO for the opportunity to comment on the Draft Action Plan.

Our organizations have long awaited the release of a Draft Action Plan for the Resident Killer Whales under the *Species at Risk Act*, SC 2002, c 29 ("SARA"). Indeed, over six

and a half years ago, in our comment on the then-Proposed Recovery Strategy for the Resident Killer Whales, we wrote:

When the Final Recovery Strategy is released, the important action planning process will begin. Our organizations strongly support dedication of significant financial and human resources to the Action Plan for the Resident Killer Whales.

With threats to critical habitat clearly identified in the Proposed Recovery Strategy, we request the Honourable Minister Hearn to instruct the Recovery Team to ensure that the Action Plan include clear, concrete measures to mitigate all identified threats.¹

We reiterate that it is essential that the Canadian government, including but not limited to DFO, must take action to tackle the threats facing Northern and Southern Resident Killer Whales. Without action, these iconic species are unlikely to survive and to recover.

Unfortunately, while the Draft Action Plan identifies some important research projects, it generally fails to identify concrete actions or measures that will ensure any specific outcomes on the ground. In statutory terms, under SARA, the Draft Action Plan fails to include a “statement of the measures that are proposed to be taken to protect the species’ critical habitat” [s. 49(1)(b)] or a “statement of the measures that are to be taken to implement the recovery strategy, including those that address the threats to the species and those that help to achieve the population and distribution objectives, as well as an indication as to when these measures are to take place” [s. 49(1)(d)].

The Draft Action Plan proposes various activities (primarily research activities) to achieve the following four broad recovery objectives originating with the Recovery Strategy:

1. Ensure that Resident Killer Whales have an adequate and accessible food supply to allow recovery;
2. Ensure that chemical and biological pollutants do not prevent the recovery of Resident Killer Whale populations;
3. Ensure that disturbance from human activities does not prevent the recovery of Resident Killer Whales;
4. Protect critical habitat for Resident Killer Whales and identify additional areas for critical habitat designation and protection²

Unfortunately, apart from reiterating these four broad recovery objectives, in many other respects the Draft Action Plan is not based on the Recovery Strategy as is required.

¹ Comments on Recovery Strategy for Northern and Southern Resident Killer Whales (*Orcinus Orca*), August 20, 2007, found at: <https://www.georgiastrait.org/?q=node/683>

² However, the Draft Action Plan no longer appears to identify the goal of the Recovery Strategy, namely to “ensure the long-term viability of resident killer whale populations”.

Our submission begins with some overarching comments on the requirements of an action plan under SARA and the Draft Action Plan's deficiencies in that respect. We then provide specific comments on how the Draft Action Plan proposes to address each of these four recovery objectives. Again, without diminishing the importance of ongoing research projects, the activities proposed in the Draft Action Plan are legally and scientifically inadequate to ensure those four recovery outcomes. In addition to research, action to mitigate and prevent threats to the Resident Killer Whales, on the ground, is also needed.

The David Suzuki Foundation, Georgia Strait Alliance, Raincoast Conservation Foundation and the Wilderness Committee welcome any opportunity, in person or in writing, to assist DFO directly with revisions to the Draft Action Plan. Specifically, with reference to s. 48(1)(e) of SARA, given our organizations' long-standing interest and demonstrated expertise in recovery planning under SARA for the Resident Killer Whales, we request that rather than only offering these useful opportunities to comment in processes that are open to the general public, DFO prepare the Action Plan in cooperation with us to the extent possible.

In summary, while the Draft Action Plan codifies important ongoing research, it fails to set out clear, concrete measures to address, mitigate and prevent identified threats. We urge DFO to revise the Draft Action Plan to identify specific recovery actions that the Canadian government will take to ensure the survival and recovery of the Resident Killer Whales.

Yours sincerely,



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A. Comments on Draft Action Plan as a whole

In this section of our submissions, we set out our overarching concerns with the approach DFO has taken to the Draft Action Plan. Specifically, we first briefly summarize parts of the framework governing the content of action plans under SARA, and introduce our concern that this document is not actually a plan for action. That is, in its current draft form, it does not conform to s. 49(1)(d) because it does not propose to implement the Recovery Strategy with concrete recovery measures that will address, mitigate or prevent threats to the Resident Killer Whales.

We then set out how the Draft Action Plan fails to indicate *when* and *by whom* recovery measures will be implemented, in a manner that we view as contrary to s. 49(1)(d).

We then note that DFO appears to lack the resources necessary to implement the Action Plan, and urge that the Action Plan include an indication of the financial and human resources that DFO will dedicate to implementation.

Finally, we urge DFO to revise the Draft Action Plan to acknowledge that certain recovery measures must be implemented with greater urgency, and that additional recovery measures may be necessary, for the Southern Residents.

Draft Action Plan is lacking in “actions” or recovery measures

The purposes of SARA include to prevent wildlife species from being extirpated or becoming extinct; and to provide for the recovery of endangered and threatened species. SARA action plans are a critical mechanism – and arguably the key mechanism – by which Parliament intends that DFO will provide for the recovery of endangered and threatened aquatic species.

SARA envisions a process where species at risk are assessed, listed and then, through the recovery process, recovered back to healthy population levels. The recovery process comprises two main, sequential statutory steps. First, the government must prepare a recovery strategy, based on the best available science, “to first provide a baseline of information about the biology and ecology of a species and a broad strategy to address conservation threat”. Second, the government must then prepare an action plan based on the recovery strategy.³ In contrast to the recovery strategy, is “intended to describe more detailed “action” measures to achieve a species’ survival and recovery, including evaluation of the socio-economic costs and benefits of such measures.”⁴

Thus an action plan is the mechanism in the SARA statutory scheme that is intended to ensure the *implementation* of recovery measures. When it comes to recovery, an action plan is where

³ SARA, s. 47. Table 5 of the Resident Killer Whales’ Recovery Strategy states that “A thorough listing of performance measures will be included in an action plan.”

⁴ *Environmental Defence Canada v Canada (Fisheries and Oceans)*, 2009 FC 878.

the rubber hits the road. An inadequate or unimplemented action plan may inevitably result in a failure to recover the species. Sadly, in the case of an endangered species such as the Southern Resident Killer Whales, an inadequate or unimplemented action plan could even contribute to the extirpation or extinction of the species.

An action plan under SARA has legally mandatory content. Importantly for the purpose of this submission, s. 49(1)(d) requires that an action plan include measures that are to be taken to implement the recovery strategy, including implementation measures that address the threats to the species and that help to achieve the population and distribution objectives, as well as an indication as to when these measures are to take place. In addition, as explored further in the final section of this submission, s. 49(1)(b) requires that an action plan include measures that are proposed to be taken to protect the species' critical habitat.

To our great disappointment, on the whole, the Draft Action Plan generally fails to include implementation measures that will mitigate or prevent threats to the Resident Killer Whales. Rather than identifying "measures" to be implemented at an identified time, the Draft Action Plan makes vague and inadequate commitments to "develop potential measures," or to "consider possible tools", or to "work towards" ensuring that action is maybe taken someday in the future. Measure by measure, the Draft Action Plan withholds commitments by the Government of Canada to taking any actions or measures that would achieve any concrete recovery outcomes. It withholds these actions and measures even when they are unquestionably within Canada's sole or its shared jurisdiction. The Draft Action Plan consistently stops short of action and thus, in our view, it stops short of its meeting its legal requirements under s. 49(1)(d).

Furthermore, not only does the Draft Action Plan fail to set out recovery measures generally, but it is often silent on key threats identified in the very Recovery Strategy that it is intended to implement. Two of the most egregious examples are the identified threats to Resident Killer Whales and their habitats occasioned by shipping traffic and by oil spills. Indeed the Recovery Strategy indicates that an oil spill in their critical habitat will be catastrophic for the Resident Killer Whales. Yet the words "shipping" and "tankers" do not appear in the Draft Action Plan. This is despite the imminent danger to Resident Killer Whales posed by well-known plans for port expansion and increased shipping traffic - for example the increase in oil tanker traffic related to Kinder Morgan's proposal to twin its Transmountain pipeline.

Our organizations do not dispute that ongoing scientific research is essential. DFO's marine mammal research scientists, and its former marine toxicologists, have made hugely important contributions to understanding the needs of and threats to the Resident Killer Whales. Indeed, the Resident Killer Whales are arguably the best-studied cetacean on the planet. Moreover, research is no substitute for action. In accordance with the precautionary principle codified at s. 38 of SARA, in preparing an action plan, if there are threats of serious or irreversible harm to the species, then "cost-effective measures to prevent the reduction or loss of the species should not be postponed for a lack of full scientific certainty".

Timing of the implementation of recovery measures

The Draft Action Plan includes, under Objectives 1 – 4, a number of activities (primarily research activities). In our view, these activities taken individually and globally do not satisfy the duties assigned to DFO by s. 49(1)(d) of SARA, for the reasons noted above. In addition, in our view, the Draft Action Plan fails to comply with the s. 49(1)(d) requirement that the Draft Action Plan must give “an indication as to when these measures are to take place”.

As part of its Implementation Table, the Draft Action Plan does include a “timing” column for the activities enumerated under Objectives 1 – 4. However, the information in this column is unreasonably general, vague and often incomplete.

As just one example, the column sometimes indicates that an activity will take “2 years” or “5 years”. However, an indication of *how long* it will take to implement a measure is not what s. 49(1)(d) requires. Rather, s. 49(1)(d) requires DFO to state *when* the measures are to take place. This requires DFO to state actual dates or date ranges; for example, rather than “2 years”, DFO must state (for example) “April 2014 – March 2016”.

Without start and end dates, a “two year” period could hypothetically occur in 2014 -2016; or, troublingly, DFO could wait for decades to start the measure. SARA’s intent would be defeated by that approach. The Resident Killer Whales do not have decades to wait for DFO to act.

Likewise, DFO needs to assign “ongoing” projects and activities a timeline. Right now, it is unclear from the Draft Action Plan which of the “ongoing” activities have already started, as of March 2014, and which are contemplated to be “ongoing” as of the time the Action Plan is finalized on the SARA Public Registry. To indicate that a measure is “ongoing” does not indicate when the measures are to take place. Moreover, while we do not object to the inclusion of existing, ongoing activities in an action plan, the intent of s. 49(1)(d) and SARA as a whole is clear that the recovery measures committed to in an Action Plan are supposed to be *new* measures that “are to be taken” in the future – not simply a codification of ongoing research.

Responsibility for the implementation of recovery measures

Column 5 of the Implementation Table is intended to identify which agencies and persons will be responsible for specific actions and measures. Of concern to us, Column 5 very frequently indicates that the agency or person will be some unidentified person called “other”. However, there is no indication of who these “others” are contemplated to be. Nor is there any indication of whether these “others” have been consulted about and are at all willing to assume responsibility for the measures that DFO is assigning to them; whether DFO will be overseeing, supervising, or coordinating with these “others”; or whether Canada will be funding these “others” to take the listed measures to implement DFO’s Recovery Strategy.

In our view, DFO cannot meet its duty under s. 49(1)(d) to state the measures that *are to be taken* to implement its Recovery Strategy by vaguely indicating that *possibly* some “other”

agency or person might one day in the future implement those measures. “Measures that are to be taken” cannot correctly be construed as “measures that Canada will not itself commit to but that might one day be taken by some unidentified other”. Relatedly, if DFO is not even aware of *who* will be taking measures to implement its Recovery Strategy, then it clearly cannot meet its duty to indicate *when* those measures will take place. By assuming hypothetically that “others” might step in to implement DFO’s own Recovery Strategy, the clear intent of SARA action planning is defeated. An action plan is intended to guide and to ensure implementation of recovery measures; it cannot do that if nobody is assigned responsibility. While we are not opposed to these responsibilities being assigned to other persons and entities, DFO needs to identify which such persons and entities have committed to implement the recovery measures. Currently, there is no reason to believe that these unidentified others have the capacity and the commitment to implement recovery measures or to undertake research activities.

Incidentally, this is one reason why DFO should have prepared this Draft Action Plan in cooperation with the stakeholders indicated in s. 48(1) of SARA. To date, to the best of our knowledge, DFO has only involved Parks Canada in the preparation of this Action Plan. To the best of our knowledge, DFO has not involved other federal agencies, the Province or Aboriginal organizations in the *preparation* of the Draft Action Plan, let alone our organizations. We reiterate our request to be directly involved in the preparation of the Action Plan going forward.

Finally, where DFO is identified in Column 5 as the entity that will be implementing a particular activity or recovery measures, we suggest that DFO would indicate which DFO sector or branch will be responsible for implementing the measures.

DFO lacks the resources to implement Action Plan in a timely manner

We are concerned that, in addition to postponing actions to implement the Recovery Strategy through the guise of eternal study, the Canadian government has undermined the ability of DFO Pacific Region to implement meaningful action and measures to recover Resident Killer Whales.

The Draft Action Plan makes clear that “Fisheries and Oceans Canada is committed to implementing the measures assigned to itself; however, implementation of this action plan is subject to appropriations, priorities, and budgetary constraints of the participating jurisdictions and organizations.”

Successive rounds of budgetary cut backs seriously undermine the ability of DFO to carry out even the research projects identified in the plan – let alone take desperately needed action to address, mitigate or prevent threats to the Resident Killer Whales and their critical habitats.

The following is a list of well-known, public examples that illustrate the ways in which DFO’s ability to take action to recover Resident Killer Whales has been severely compromised:

- In 2012, Dr. Peter Ross, a leading expert on killer whales and aquatic contamination, lost his job when the federal government dismantled DFO's ocean contaminant program and cut nearly all employees who research marine pollution in Canada.⁵
- In 2012 1,000 DFO staff received termination notices.⁶ The department has about 11,000 employees and an annual budget of just under \$1.9 billion.⁷
- In 2013, it was confirmed that DFO's budget cuts would total over \$100 million – to be phased in over three years.⁸
- DFO staffing levels are so low the department was unable to do a complete evaluation of the Enbridge pipeline route which crosses over 800 creeks and rivers in BC.⁹
- Since 2012, one third of 90 DFO habitat staff in BC have been laid off; DFO habitat staff levels are now 50% lower than they were just a decade ago.¹⁰
- Cuts at DFO have been disproportionately targeted at the Coast Guard. Coast Guard vessels have been instrumental in engaging in killer whale research.¹¹

We urge DFO to include, as part of the Action Plan itself, an indication of the financial and human resources that DFO will devote to implementation of the Action Plan.

Immediate action needed to protect endangered Southern Residents

While this is a multi-species Draft Action Plan, it is important to recognize and address the fact that the Southern Residents are more vulnerable than the Northern Residents. It is known that there are human activities that will affect each population differently, due to the heightened vulnerability of the Southern Residents. Thus, in some cases different actions and measures may be required for each population.

There are many similarities between the needs of the Northern and Southern Residents. Most importantly the three major threats identified in the Recovery Strategy – prey availability, pollution and disturbance – apply to both populations. However, the two populations have a different conservation status.

⁵ <http://news.nationalpost.com/2012/05/20/killer-whale-expert-out-of-work-as-ottawa-cuts-ocean-pollution-monitoring-positions/>

⁶ <http://theagenda.tv.org/blog/agenda-blogs/cuts-canadian-science>

⁷ <http://www.vancouversun.com/news/Federal+budget+cuts+million+from+fisheries+oceans+over+three+years/8133846/story.html>

⁸ <http://www.vancouversun.com/news/Federal+budget+cuts+million+from+fisheries+oceans+over+three+years/8133846/story.html>

⁹ <http://www.cbc.ca/news/canada/northern-gateway-review-hobbled-by-budget-cuts-critics-say-1.1138481>

¹⁰ <http://www.cbc.ca/news/canada/northern-gateway-review-hobbled-by-budget-cuts-critics-say-1.1138481>

¹¹ <http://www.cbc.ca/news/canada/newfoundland-labrador/the-axeman-cometh-for-dfo-and-coast-guard-1.2483004>

Northern Residents are threatened; namely, they are “a wildlife species that is likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction”.¹² The Northern Resident population has been steadily growing since its 1975 low of 120 individuals, with only one period of decline, and is currently increasing at a rate of 3.7% per year.¹³

However, the Southern Residents are endangered; namely, they are “a wildlife species that is facing imminent extirpation or extinction”.¹⁴ The Southern Resident population has had many periods of decline, has not grown much since its 1975 low of 70 individuals, and, as of 2011, was barely holding steady at a growth rate 1.1% per year.¹⁵ The Southern Residents are showing very little sign of population re-building. Immediate action is to prevent the demise of the population. In this respect, the Draft Action Plan is woefully inadequate for the Southern Residents.

Finally, the Southern Residents face unique threats that require unique actions. Southern Residents’ critical habitat is within an extremely urban and industrialized area, and thus recovery actions need to be implemented more effectively and more immediately. For example, the Southern Residents’ habitat falls within an area ranked at a “Very High Risk of Oil Spill”, whereas Northern Residents’ habitat is, at least currently, ranked as at a “Low” risk of this threat.¹⁶ Similarly, the Southern Residents’ critical habitat is transected by a major shipping channel, which, through the continued expansion of ports in the Lower Mainland and the proposed twinning of Kinder Morgan’s Transmountain Pipeline, may see a huge increase in shipping traffic and underwater noise in the near future.

We ask that the Draft Action Plan should be revised to acknowledge, clearly and expressly, the greater urgency to implement recovery measures for the Southern Residents. Where threats may affect Northern and Southern populations in a different way, the timelines associated with each recovery measure should also differ. Additional recovery measures clearly may be necessary for Southern Residents, given their status and the additional threats that they face.

¹² SARA, s. 2 (definition of “threatened species”). The Northern Residents have an estimated population of 262 animals presently; Fisheries and Oceans Canada. 2014. Action Plan for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada [Draft]. *Species at Risk Act* Action Plan Series. Fisheries and Oceans Canada, Ottawa. xx + XX pp.

¹³ Ford, J.K.B, G.M. Ellis, J.W. Durban and K.C. Balcomb. 2011. Killer whale ecotypes in the Salish Sea: Contrasting long term trends related to prey availability. Proceedings of the 2011 Salish Sea Ecosystem Conference October 25-27, Vancouver, BC.

¹⁴ SARA, s. 2 (definition of “endangered species”). The Southern Residents have an estimated population of 82 animals presently; Fisheries and Oceans Canada. 2014. Action Plan for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada [Draft]. *Species at Risk Act* Action Plan Series. Fisheries and Oceans Canada, Ottawa. xx + XX pp.

¹⁵ Ford et al. 2011, *supra*.

¹⁶ GENIVAR. 2013. Risk Assessment for Marine Spills in Canadian Waters: Phase 1, Oil Spills South of the 60th Parallel. Report from GENIVAR to Transport Canada. 172pp and appendices

B. Objective 1: Ensure that Resident Killer Whales have an adequate and accessible food supply

Overall, DFO's Draft Action Plan fails to deliver necessary and mandated action to ensure that the Resident Killer Whales have an adequate and accessible food supply.

We are very concerned that, despite that management of salmon fisheries is almost entirely within DFO's jurisdiction, DFO has not included in the Draft Action Plan the necessary fisheries management measures that will ensure food supply needed for the survival and recovery of the Resident Killer Whales. The lack of fisheries management measures, and any assessment of their benefits, is particularly grievous for the endangered Southern Residents.

The Draft Action Plan, consistent with the Recovery Strategy, continues to identify an appropriate recovery objective regarding food supply. However, the Draft Action Plan fails to deliver on this goal. Rather, the Draft Action Plan identifies existing and ongoing research needs and activities, and presents these as "actions" that will secure the above objective. Not only is this erroneous and misleading, but many of the identified research goals have already yielded information that could and should be acted upon under an Action Plan.

As indicated more generally in our covering letter, our groups' fisheries management experts request the opportunity to assist with revisions to Objective 1 of Action Plan, in cooperation with DFO, as permitted under s. 48(1)(e) of the SARA. Without the ability to be exhaustive here, we focus our submission on fundamental aspects of securing food supply, including identifying places where the Draft Action Plan fails to identify needed action based on existing information.

Approaches 1-3: Research and Monitoring Re diet and foraging success

The recovery measures identified in this part of the Draft Action Plan are largely research and monitoring. While the research identified in Approaches 1-3 is needed, as stated above, research alone will not ensure recovery of the Resident Killer Whales.

When it comes to ensuring adequate and accessible food supply, research alone cannot meet the legal requirements that an Action Plan must state the "measures that are proposed to be taken to protect the species' critical habitat" [s. 49(1)(b)] or the "measures that are to be taken to implement the recovery strategy, including those that address the threats to the species and those that help to achieve the population and distribution objectives" [s. 49(1)(d)].

While not exhaustive of our concerns with the lack of fisheries management measures in Approaches 1-3, the following are some specific proposals for revisions to particular items.

Approach 1(3): Further identify Resident Killer Whales' prey preference (species/size/sex/stock)

We currently know that Southern Residents specialize on Chinook stocks from the West Coast of Vancouver Island ("WCVI"), Puget Sound, Upper Fraser, Middle Fraser, South Thompson, and Lower Fraser during the late spring, summer, and into the fall (Ford et al. 2010, Hanson et al. 2010, Ford 2011).¹⁷ Having more research on these prey preferences does nothing to secure their availability for Southern Resident Killer Whales.

Therefore, Approach 1(3) needs to be re-written accordingly:

Southern Resident Killer Whales prey heavily on and thus rely on Chinook stocks from WCVI, Puget Sound and the Fraser River during the spring to fall months. In years of low Chinook abundance, known impacts to these stocks (e.g., recreational and commercial fisheries) must be minimized on these stocks (e.g., less than 5% total exploitation as targeted catch or bycatch) to ensure adequate availability of Chinook to killer whales.

Approach 2(7): Continue to monitor the role of Chinook abundance in the population dynamics of the Northern and Southern Resident Killer Whale populations

While more research may be useful, existing research has already yielded information that can and should be acted upon. Resident Killer Whale survival is highly correlated with the PSC Chinook index, and nutritional stress causing increased mortality occurs in years of decreased salmon availability. Current information suggests that the WCVI, Georgia Strait, and other coast wide PSC Chinook indices need to be above 1.0 to reduce mortality of Southern Resident Killer Whales. Adequate salmon for recovery likely requires a higher level of abundance/index.

Therefore, Approach 2 (7) needs to be re-written accordingly:

The WCVI, Georgia Strait, and other coast-wide PSC Chinook indexes, and potentially others, provide critical information about the availability of salmon and the potential impacts to killer whales. These relationships and forecasts should be used to identify years when in-season Chinook abundance is below a level that supports recovery.

Approach 2(8): Assess Resident Killer Whale body condition using the best available technology

This ongoing work has already yielded findings that can be acted upon. Nutritional and stress analysis on the Southern Residents indicate that stress hormones show a short-term and long-term response to Chinook availability.¹⁸ Specific hormones concentrations rise in response to

¹⁷ M. Bradley Hanson, Robin W. Baird, John K. B. Ford, Jennifer Hempelmann-Halos, Donald M. Van Doornik, John R. Candy Candice K. Emmons, Gregory S. Schorr, Brian Gisborne, Katherine L. Ayres, Samuel K. Wasser, Kenneth C. Balcomb, Kelley Balcomb-Bartok, John G. Sneva, Michael J. Ford. 2010. Species and stock identification of prey consumed by endangered southern resident killer whales in their summer range. *Endang. Species Res.* 11: 69–82

¹⁸ Ayres, Katherine L. R.K. Booth¹, J.A. Hempelmann, K. L. Koski, C.K. Emmons, R.W. Baird, K. Balcomb-Bartok, M. B. Hanson, M. J. Ford, and S.K. Wasser. 2012 Distinguishing the Impacts of Inadequate Prey and Vessel Traffic on an Endangered Killer Whale (*Orcinus orca*) Population. *PLOS One*. DOI: 10.1371/journal.pone.0036842

nutritional and other psychological stressors, and closely correspond to relative Fraser River Chinook abundance (using CPUE at Albion test fishery) from the time the Southern Residents arrive in their critical habitat. Therefore, Approach 2(8) needs to be re-written accordingly:

The known connection between killer whale body condition, stress hormones and Chinook abundance reinforces the need for Chinook management that reduces harvest, increases escapement pressures and rebuilds Chinook populations.

Approach 4: Develop potential actions to be taken during poor Chinook return years to ensure sufficient prey availability for Resident Killer Whales

Approach 4 is where one would particularly expect to find specific actions. Instead, the recovery measures listed in this part of the Draft Action Plan are not actions at all, but vague statements about “considering action”, “investigating” and “communicating”. As one example, Item 13 reads “Take into account both the seasonal (acute) as well as the cumulative (chronic) effects of poor Chinook returns on Resident Killer Whales when considering Chinook management actions in support of recovery.” It should be combined with Item 14 and should instead read: “Develop and implement measures to restrict fishing in years of poor Chinook salmon returns to increase the availability of food for Resident Killer Whales.”

Approach 4(14): Investigate strategic fishery closures as a possible tool to reduce Resident Killer Whale prey competition in specific feeding areas (e.g. modeling, fishery closure tests)

Here, both the language and the proposed action are inadequate. Given that the relationship between the PSC index and killer whale mortality/survival is known, low forecasts should trigger consultations and notices about priority access for killer whales so that area and timing fishery closures can be implemented.

Therefore, Approach 4(14) needs to be re-written accordingly:

In years when the PSC Chinook index is forecasting abundance below a level that supports recovery, resident killer whales need to be given priority management through fishery closures on stocks that are targeted by killer whales. If forecasts are adjusted upwards in season, fisheries can open to a level that keeps abundance above the recovery threshold.

Approach 4(13) Take into account both the seasonal (acute) as well as the cumulative (chronic) effects of poor Chinook returns on Resident Killer Whales when considering Chinook management actions in support of recovery

This broad statement is meaningless in an Action Plan. Acute and chronic management actions require specific, separate initiatives at both levels to address long term and in-season Chinook abundance.

Therefore, Approach 4(13) needs to be re-written accordingly:

4 (13A) Long-term rebuilding plans that reduce harvest in both terminal and marine fisheries in order to place more Chinook on spawning grounds need to be implemented to rebuild Chinook populations to historic levels and throughout their historic range; and

4 (13B) Seasonal killer whale food supply requirements need to be informed and managed proactively coast-wide with information from the PSC and other indices of Chinook abundance.

Approach 4(15) Analyze historical data to identify environmental correlates with Chinook abundance and Resident Killer Whale mortality trends

Many environmental correlates that drive Chinook abundance are well known. More importantly, where impacts to Chinook abundance are a result of human activities, these activities need to be addressed through action.

Approach 4 (15) needs to be re-written accordingly.

Identify specific threats to Chinook survival including water extraction, other habitat impacts and disease and virus transfer from open net cage salmon farms that intersect Chinook migration routes.¹⁹

Approach 5: Ensure that the populations and habitat of Resident Killer Whale prey species are adequately protected from anthropogenic factors such as exploitation and degradation including contamination

Similarly, with respect to Approach 5, protection of Chinook salmon is obviously important in protecting prey availability for Resident Killer Whales. However, this section suffers from a similar vague commitment to action.

¹⁹ See e.g. Cohen Commission Exhibit 1517; Dill, Lawrence. 2011. Tech. Rep. 5D: Impacts of salmon farms on Fraser River sockeye salmon. Prep. for the Cohen Commission; see Evidence of the Aquaculture Coalition submitted Aug 2011 Exhibit 1976; Also see Cohen Commissioned Reports 1A, 1B, and 5A on disease.

C. Objective 2: Ensure that chemical and biological pollutants do not prevent the recovery of Resident Killer Whale populations

As the Recovery Strategy makes clear, we know enough about the state of marine pollution as it affects Resident Killer Whales to begin to take action to address existing pollution and limit further pollution. For example, at page 16, the Recovery Strategy states:

There are numerous chemical and biological pollutants that may directly or indirectly impact Resident Killer Whales, ranging from persistent organic pollutants (POPs) to antibiotic resistant bacteria and exotic species. ... [t]he effects of contaminants on other species such as pinnipeds are better understood, and in many cases can be generalized to killer whales, particularly because the physiological processes of mammals are similar across different species.

Ongoing research is both prudent and necessary, but as stated above it should not take the place of action to address, mitigate and prevent pollution itself.

Approach 1: Investigate the health and reproductive capacity of Resident Killer Whales using scientific studies on free-ranging and stranded individuals, as related to chemical and biological pollution

From our review of the proposed items under Approach 1, it appears that many of the listed research activities have either already been completed or are already well underway. While we are not opposed to DFO scientists taking an opportunity to codify their existing research projects in the Resident Killer Whales' Action Plan, we request that the Action Plan be revised to indicate more clearly that much of this research has been underway for many years.

Likewise, to ensure greater clarity and accountability, we request that the Action Plan be revised to indicate - in parenthesis following every item – which agency or entity is doing the ongoing research and which agency or entity is contemplated to do future research activities.

We are concerned that, with the closure of DFO's marine contaminants research unit in Sidney, British Columbia, that DFO does not actually know who, if anybody, will conduct the research activities contemplated in the Draft Action Plan. Without greater specificity about who is contemplated to do what research, DFO effectively undermines its own ability and the ability of its various research partners to achieve any of these research goals.

It is also disheartening to see that, after over a decade of being listed under SARA, DFO proposes to take another five years to complete certain research, such as evaluating the type and level of risk of biological pollutants from agricultural runoff, sewage effluent, wildlife rehabilitation facilities and other sources.

Approach 2 Monitor the chemical and biological pollutant levels in Resident Killer Whales, their prey, and their habitat

Here, we make the same general comments as set out elsewhere in this submission. Monitoring is important, but action to address the high pollutant levels in Resident Killer Whales is needed.

Approach 3: Identify and prioritize the sources of key chemical and biological pollutants affecting Resident Killer Whales and their habitat

The full range of anthropogenic environmental contaminants to which killer whales and their prey are exposed, over time and in space, with special attention paid to the identification of sources and the resulting effects of environmental contaminants on Resident Killer Whales, their prey and their habitat, was identified as a knowledge gap in the Recovery Strategy (p. 17). We take no objection to this research being done – if, having recently terminated all of its Pacific research scientists who did work on marine contaminants, DFO actually has any capacity remaining to do this scientific research.

However, in articulating how it intends to implement Approach 3, the Draft Action Plan is wholly inadequate. Perhaps this is the inevitable result of the recent decimation of DFO's institutional capacity to do any scientific research in Pacific Region on contamination of marine mammals and their habitats. Specifically, the "actions" contemplated under Approach 3 speak to holding workshops, collating remediation efforts and various details on mercury. Item #40 does at least contemplate that DFO might contribute to reviews of new and existing chemicals. However, there is nothing as comprehensive and holistic as what is needed. Ideally, we would have a fairly complete list of current contaminants being deposited into Georgia Strait, in order to better plan to prevent, mitigate and remediate that contamination. The current steps envisioned are unlikely to contribute meaningfully to the desired outcome of Approach 3.

Approach 4: Reduce the introduction into the environment of pesticides and other chemicals that have the potential to adversely affect the health of Resident Killer Whales and/or their prey, through measures such as municipal, provincial, national and international agreements, education, regulation and enforcement

Overall, the items proposed to implement Approach 4 are weak. DFO has proposed very few concrete measures that will ensure any specific outcomes. For example, Item #34 proposes to "*support* new, proposed, or existing bans on the use of pesticides for cosmetic purposes" (emphasis added). Instead, DFO should be proposing to "restrict the cosmetic use of pesticides that are harmful to Resident Killer Whales. Federal agencies have the power to regulate pesticides, including under the *Pest Control Products Act* and the *Canadian Environmental Protection Act*.

That being said, there is a vast array of chemicals that are presently contaminating the bodies of Resident Killer Whales and their prey, that have the potential to adversely affect their health, and so the focus of the Draft Action Plan on the limited class of pesticides is unduly narrow.

Approaches 5: Mitigate the impacts of currently and historically used “legacy” pollutants in the environment

Approach 6: Reduce the introduction of biological pollutants, including pathogens and exotic species, into the habitats of Resident Killer Whales and their prey

Here we make the same comment as under Approach 4. The Draft Action Plan contemplates very few concrete actions that will ensure any specific outcomes on the ground. The contemplated “actions” are soft and weak, and will not ensure that chemical and biological pollutants do not prevent the recovery of Resident Killer Whale populations.

While it is acknowledged that DFO itself does not have *sole* jurisdiction to mitigate the impacts of current and historically used pollutants in the environment, DFO clearly has some authority. As only one example, DFO has the power to reduce the introduction of various pathogens that are being transferred into the marine environment by the salmon aquaculture industry in British Columbia. Moreover, DFO’s powers to mitigate the impacts of chemical and biological pollutants are augmented by the powers of other federal agencies such as Environment Canada, Health Canada and the CFIA. The Draft Action Plan fails to acknowledge, or to propose actions based upon, the broad federal authorities to regulate and mitigate impacts of pollution.

Threats not addressed, mitigated or prevented in the Draft Action Plan

There are several threats and proposed actions set out in the Recovery Strategy which are not reflected in the Draft Action Plan. As set out in s. 47, action plans must be prepared based on recovery strategies, yet in many respects this Draft Action Plan ignores the Recovery Strategy.

For example, at page 53, the Recovery Strategy acknowledges that DFO must “[i]dentify and prioritize key sources of chemical and biological pollutants”. While the Draft Action Plan proposes some research aimed at “Evaluating the type and level of risk of biological pollutants from agricultural runoff, sewage effluent, wildlife rehabilitation facilities and other sources,” it is not clear whether or how this research is for the purpose of identifying and prioritizing the key sources of pollutants.

Furthermore, at pages 49 to 50, the Recovery Strategy states that recovery of the Resident Killer Whales requires mitigation of impacts of currently used pollutants. The Draft Action Plan makes no mention of this at all. It does refer to mitigating discharge of ‘biological pollutants’. By implication, the Draft Action Plan’s silence on any similar mitigation of chemical pollutants indicates that DFO contemplates no action to mitigate the impacts of chemicals currently in use.

The Recovery Strategy states, at page 22, that:

Shipping also represents a risk to the ecological integrity of coastal regions. Both intentional and unintentional discharge of chemicals and biological waste are added sources of pollution in all coastal areas, but particularly in high traffic zones.

Of significant concern to our organizations, the Draft Action Plan makes no mention of the impacts of shipping at all, including within the contaminants section. Item #55 simply contemplates that DFO will “[r]esearch the effects of other vessel-based impacts (e.g., fish finders, exhaust noise, disposal of waste and bilge water)”.

The risks of pollution posed by shipping, particularly in high traffic zones, must receive separate treatment in the Action Plan. In particular, we recommend that DFO commit in the Action Plan to developing and implementing a mitigation plan to reduce current impacts to the Resident Killer Whales from shipping pollution, in coordination with other federal and international agencies. The Action Plan should state that the mitigation plan will address and implement a reduction in direct discharges into Georgia Strait, and will address and implement preventative measures to protect Resident Killer Whales from the risks of oil spills.

On this point, despite that the Recovery Strategy acknowledges the threats posed to Resident Killer Whales and their critical habitat by oil spills, there is no mention of any concrete action to address oil spills or other fossil fuel spills in the Draft Action Plan. The closest reference is at Item #35, which is a weak commitment to promoting the nebulous concept of best practices. However, tangible action is needed to ensure Resident Killer Whales are protected from oil spills. The lack of any measures to address this threat is a major failing of the Draft Action Plan.

Finally, at page 54, the Recovery Strategy states that:

As well, initiatives such as Environment Canada’s Georgia Basin Action Plan, DFO’s Wild Salmon Policy and Parks Canada’s Southern Strait of Georgia National Marine Conservation Area proposal and numerous Provincial Parks, including the Robson Bight-Michael Bigg Ecological Reserve established specifically to protect northern resident killer whales and their habitat will help to effect recovery by protection of at least a portion of resident killer whale habitat and their prey.²⁰

To our disappointment, there is no mention in the Draft Action Plan of marine protected areas, or of these or other marine planning or ecosystem-based planning efforts. Marine planning is an important tool to help mitigate threats to Resident Killer Whales, including pollution threats particularly related to shipping and recreational whale-watching. The Action Plan should commit Canada to these initiatives insofar as they benefit the Resident Killer Whales. In particular, finalizing the marine portion of the Southern Strait of Georgia National Marine Conservation Area would be a powerful tool to enable other marine planning actions (such as killer whale refuges) that would help ensure recovery of the Southern Residents.

²⁰ The Georgia Basin Action Plan no longer exists, the Wild Salmon Policy is not being implemented as intended, and the National Marine Conservation Area is far from a reality - making marine planning all the more critical.

D. Objective 3: Ensure that disturbance from human activities does not prevent the recovery of Resident Killer Whales

The Southern Residents live in much more populated area and therefore face many more impacts from anthropogenic disturbance than do the Northern Residents. The Southern Residents' critical habitat is within an area of high vessel traffic.²¹ Southern Residents are, on average, followed by almost double the amount of whale watching boats than the Northern Residents,²² and are within 400m of a vessel most of the time during daylight hours from May to September.²³ Southern Resident Killer Whales may be especially vulnerable to the threat from active sonar from military testing given that they spend significant time off the coast of the Washington naval exercise area.²⁴ Further, a significant increase in vessel traffic from a number of industrial projects is envisioned in this region in the very near future. Thus, immediate action to address the threat posed to Southern Residents by disturbance is needed.

Approach 1: Determine baseline natural and anthropogenic noise profiles and monitor sources and changes in the exposure of resident killer whales to underwater noise

As stated above, while research is important, it should not be the focus to the exclusion of action.

Under Approach 1, Items #43-50 identify acoustic research and noise monitoring as a high priority to be undertaken with DFO and others in the next 2-10 years. Yet much research already exists on the effects on Resident Killer Whales of noise, and noise has been shown to affect call amplitude, source levels, and call duration.²⁵ DFO has already been collecting such baseline data in the Southern Residents' habitats for a number of years now. It has also been

²¹ Living Oceans Society. 2011. Shipping on the British Columbia Coast. Current Status, Projected Trends, Potential Casualties, and Our Ability to Respond: A Briefing Report. Sointula, BC: Living Oceans Society

²² Cetus Research and Conservation Society, unpublished data

²³ Lusseau, D., D.E. Bain, R. Williams and J.C. Smith. 2009. Vessel traffic disrupts the foraging behaviour of southern resident killer whales *Orcinus orca*. *Endangered Species Research* 6:211-221

²⁴ Fisheries and Oceans Canada. 2011. Recovery Strategy for the Northern and Southern Resident Killer Whales (*Orcinus orca*) in Canada. *Species at Risk Act Recovery Strategy Series*. Fisheries and Oceans Canada, Ottawa. ix + 81pp at p 30.

²⁵ Holt, M.M., D.P. Noren, V. Veirs, C.K. Emmons and S. Veirs. 2009. Speaking up: killer whales (*Orcinus orca*) increase their call amplitude in response to vessel noise. *Journal of the Acoustical Society of America* 125(1): DOI: 10.1121/1.3040028; Holt, M.M., D.P. Noren and C.K. Emmons. 2011. Effects of noise levels and call types on the source levels of killer whale calls. *Journal of the Acoustical Society of America* 130(5):3100-3106; Foote, A.D., R.W. Osborne and A.R. Hoelzel. 2004. Whale call response to masking boat noise. *Nature* 428:910.

predicted that temporary and permanent hearing loss thresholds are being exceeded by the amount of noise from constant boat traffic.²⁶

Although complete noise profiles for the entirety of the Resident Killer Whale's habitat areas may not be available, a plethora of information exists regarding the noise they are encountering. Many hydrophone arrays are in place recording them on a daily basis, especially for the Southern Residents.

Finally, DFO's desire to create a baseline for anthropogenic noise profiles over the next ten years ignores the reality that the shipping vessel traffic in this area is poised to increase dramatically in the immediate future.

Accelerating the baseline research to ensure we have a solid foundation for considering any increase in acoustic noise in these areas, in combination with actual measures to regulate noise pollution, are necessary to strengthen the steps contemplated under Approach 1.

Approach 2: Determine the short and long-term effects of chronic and immediate forms of disturbance, including vessels and noise, on the physiology, foraging, and social behaviour of resident killer whales

Under Approach 2, Items #52-57 propose various research projects into the impacts of vessel and noise disturbances on the behaviour, communication, and overall health of killer whale populations. DFO ranks this research as medium to high priority. Yet the Draft Action Plan indicates that this research will be undertaken by mainly 'other', unidentified agencies on a primarily unknown timeline.

Resident Killer Whale behaviour during vessel interactions has already been widely documented and includes avoidance tactics,²⁷ disruption of foraging behaviour and therefore energy acquisition,²⁸ differences in surface active behaviours and time spent traveling.²⁹ Moreover, recent research has indicated that Southern Resident Killer Whales are being exposed to concentrations of air pollutions from vessel exhaust that on average are high

²⁶ Erbe, C. 2002. Underwater noise of whale-watching boats and potential effects on killer whales (*Orcinus orca*), based on an acoustic impact model. *Marine Mammal Science* 18(2):394-418

²⁷ Williams, R., A.W. Trites, and D.E. Bain. 2002. Behavioural responses of killer whales (*Orcinus orca*) to whale-watching boats: opportunistic observations and experimental approaches. *Journal of Zoological Society of London* 256:255-270; Williams, R.W. and E. Ashe. 2007. Killer whale evasive tactics vary with boat number. *Journal of Zoology* 272:390-397.

²⁸ Lusseau et al. 2009; *supra*; Williams, R.W., D. Lusseau and P.S. Hammond. 2006. Estimating relative energetic costs of human disturbance to killer whales (*Orcinus orca*). *Biological Conservation* 133:301-311.

²⁹ Williams, R., D.E. Bain, J.C. Smith and D. Lusseau. 2009. Effects of vessels on the behaviour patterns of individual southern resident killer whales *Orcinus orca*. *Endangered Species Research* 6:199-209; Noren, D.P., A.H. Johnson, D. Rehder and A. Larson. 2009. Close approaches by vessels elicit surface active behaviours by southern resident killer whales. *Endangered Species Research* 8:179-192.

enough to cause serious adverse health effects.³⁰ Furthermore, scientists recently determined a method for distinguishing the impacts of inadequate prey and vessel traffic on killer whales and suggest that recovery of strategic salmon populations is important to effective recovery.³¹

DFO's proposed research in its Draft Action Plan is interesting, may be appropriate, and may increase our overall wealth of knowledge. However, these research activities, in and of themselves, are not actions or measures that will ensure disturbance does not prevent the recovery of the Resident Killer Whales.

Approach 3: Develop and implement regulations, guidelines, sanctuaries, and other measures to reduce or eliminate physical and acoustic disturbance of resident killer whales

There is a significant gap between this laudable recovery objective in Approach 3, and the activities described in the various items proposed to implement it. When one reviews the proposed measures described, is very little about any regulations, guidelines or sanctuaries.

Regarding Item 58, which prescribes an “investigation of the methods and implementation of mitigating the risk of disturbance,” this is on the right track. However, this needs to be re-written to require more than merely investigation of how to implement mitigation of disturbance. DFO needs to commit to concrete measures that mitigate the risk of disturbance.

Specifically, in the case of the Southern Residents, important foraging areas should be designated as motor boat exclusion zones, similar to the Lime Kiln State Park. Protecting foraging areas will confer a great conservation benefit to the endangered population.³² For example, Haro Strait has been identified as a key area, used frequently by all three pods of Southern Residents and it has been suggested that focusing use restrictions within this area would be effective.³³

Item 59 currently states that DFO will “[e]nsure that projects and developments that may impact Resident Killer Whales are identified during the project review process.” This wording is vague and inadequate. DFO is already obliged to identify proposed projects that may impact Resident Killer Whales (and, in addition, is obliged to identify proposed projects that may impact their critical habitat) pursuant to s. 79 of SARA. Section 79 further requires DFO not only to identify such projects, but more importantly, to identify the adverse effects of the project on the Resident

³⁰ Lachmuth, C.L., L.G. Barrett-Lennard, D.Q. Steyn and W.K. Milsom. 2011. Estimation of southern resident killer whale exposure to exhaust emissions from whale-watching vessels and potential adverse health effects and toxicity thresholds. *Marine Pollution Bulletin* 62:792-805.

³¹ Ayres et al. (2012), *supra*.

³² Williams et al. (2006), *supra*.

³³ Hauser, D.D.W., M.G. Logsdon, E.E. Holmes, G.R. VanBlaricom and R.W. Osborne. 2007. Summer distribution patterns of resident killer whales *Orcinus orca*: core areas and spatial segregation of social groups. *Marine Ecology Progress Series* 351:301-310.

Killer Whales and their critical habitat and, if the project is carried out, to ensure that measures are taken to avoid or lessen those effects and to monitor them. DFO's apparent narrowing of its extant legal duty, at Item 59, or its unawareness of its greater legal duties, is of concern to us. In revisions to its Draft Action Plan, DFO should identify specifically examples of the types of measures that it will ensure are taken to avoid or lessen effects of industrial development.

Item 60 is an important proposed measure, which provides that DFO will "[c]onsider area-specific boating regimes (speed restrictions, restricted whale watching hours) to reduce acoustic impact as well as risk of collision." However, to simply consider or think about doing something is not in and of itself an action. The word "consider" must be revised to "implement".

Item 68, which commits DFO to "[e]valuate and revise whale watching guidelines," is listed as a medium level, ongoing action. However, numerous scientists have already evaluated and made recommendations on the actions needed to mitigate disturbances by whale watching vessels. DFO should revise its Draft Action Plan to commit to implementation of these actions. These actions include, but are not limited to: having a maximum number of boats allowed within the 400m zone to prevent long-term hearing damage, decrease behavioural disturbances, and decrease exposure to toxic vapours;³⁴ increasing the 100m no-go zone to decrease behavioural disturbances;³⁵ and limiting viewing periods to give the whales a break from noise, disturbance and toxic vapours.³⁶ Vessel disturbance is a clearly demonstrated and urgent threat, and a precautionary approach demands that the Southern Residents should have such recovery measures put in place immediately.

Items 61-67 are all proposed measures that regarding public education and enforcement of marine mammal regulations. Public education is important as is enforcement of existing rules. However, as of yet, there remain no specific, enforceable noise levels or limits that DFO can enforce. DFO should commit in the Action Plan to prescribing specific limits, after considering similar noise limits that have been prescribed in Europe and the best available science.

Threats and actions not addressed in the Draft Recovery Plan

Certain disturbances identified in the Recovery Strategy as a threat to the recovery of the Resident Killer Whales or to their critical habitat, or both, are not addressed in the Draft Action Plan. These include acoustic disturbances from the use of sonar and seismic surveys, among other identified sources of acoustic disturbance.

At pages 29 to 30, the Recovery Strategy states that:

Given that the US Navy engages in joint operations with the Canadian military in both the Strait of Georgia and off the west coast of Vancouver Island, and that both northern

³⁴ Erbe 2002, *supra*; Williams et al. 2009, *supra*; Lachmuth et al. 2011, *supra*.

³⁵ Noren et al. 2009, *supra*.

³⁶ Lachmuth et al. 2011. *supra*

and southern resident whales travel in US waters, the threat that active sonar may pose must be considered and precautionary measures should be considered by both navies.

The Draft Action Plan does not even contain the word “sonar”.

At pages 31 to 32, the Recovery Strategy further states that:

The question of whether killer whales could sustain swimming the long distance necessary to avoid these sound sources needs to be addressed.

...

[a]irguns may be capable of damaging cetacean ears if the whales cannot avoid the sound source. Since killer whales are known to be exquisitely dependent on sound for orientation, navigation, locating and catching food, communication, and social interactions, the consequences of severe hearing loss could be fatal.

Despite this and other references in the Recovery Strategy, the Draft Action Plan does not include any measures that address threats posed by seismic surveys.

E. Objective 4: Protect critical habitat for Resident Killer Whales and identify additional areas for critical habitat designation and protection

Our submissions on how DFO proposes to achieve this important objective are relatively brief. The protection of critical habitat should be achieved through three key statutory mechanisms:

- 1) the rigorous enforcement of the Critical Habitat Protection Order; and, importantly,
- 2) the measures to be taken to protect the species' critical habitat and the measures to be taken to implement the recovery strategy [ss. 49(1)(b) and (d)]

Many of the threats to the Resident Killer Whales' habitat, including to their critical habitat, have already been identified in the Recovery Strategy, under ss. 41(1)(b) and (c) of SARA. Yet many of those threats are not mentioned in the Draft Action Plan. For example, the acoustic threats posed to the killer whales and their critical habitat by seismic and sonar activities, and the acoustic and contamination threats posed both to the killer whales and their critical habitat by shipping and tanker traffic, go unmentioned under Objective 4 or the Draft Action Plan generally.

The Draft Action Plan fails to satisfy the duties, under s. 49(1)(b) and (d) of SARA, to identify the measures to be taken to protect the species' critical habitat from these threats, or to implement the Recovery Strategy including those measures that address these threats to the species.

Additional critical habitat must be identified in the Action Plan

At page 21, the Draft Action Plan states that “[t]here are likely other areas that are necessary for survival or recovery of Killer Whales, but these have not yet been studied in sufficient detail to be identified with confidence.”

However, this is incorrect – both as a matter of fact and of law. To the contrary, DFO is currently able to identify additional critical habitat areas with the legally requisite level of confidence.

Factually, when it was finalized six years ago, DFO's Recovery Strategy acknowledged, at page 39, that further research was already underway to identify additional critical habitat areas for northern residents. As of 2008, DFO had no difficulty identifying candidate critical habitat areas:

Analyses of existing data on coast-wide occurrence patterns of northern resident killer whales outside the designated areas are currently underway, which will identify additional candidate areas for consideration as critical habitat (Ford 2006). These areas might include portions of Dixon Entrance, Caamano Sound, Whale Channel, and the channels surrounding King Island on the central BC mainland coast. Northern resident whales frequent all these locations in at least some years, especially during May to early July (Nichol and Shackleton 1996, unpublished data CRP-DFO). **Several rubbing beaches have also been identified in other locations on northern Vancouver Island and the mainland coast,** and might also warrant protection as critical habitats because of the importance of this behavioural tradition to the cultural diversity of resident populations [page 39] (emphasis added)

We are gravely concerned that the Draft Action Plan does not identify, in particular, Dixon Entrance, Caamano Sound, Whale Channel and the channels surrounding King Island as critical habitat.

Of concern, it appears that DFO is once again implementing SARA in a manner that facilitates industrial development. Caamano Sound and Dixon Entrance are in the Enbridge Northern Gateway Pipeline's tanker route. As indicated in the Recovery Strategy, tanker traffic is a threat to the Resident Killer Whales. By not identifying these areas as critical habitat, despite that their identification is scientifically defensible and appropriate, DFO exposes the Northern Resident Killer Whales to harmful threats. This critical habitat must be identified now.

Furthermore, the Northern Resident Killer Whales' rubbing beaches are clearly critical habitat. DFO knows where these beaches are, it knows that the Northern residents regularly use them, and it knows that this behaviour is important to the Northern residents. DFO researchers have acknowledged this in public meetings, and it has been reported by the media.³⁷ There is no scientifically valid reason to deny these rubbing beaches protection as critical habitat.

Moreover, as emphasized in our comments on the Proposed Recovery Strategy in June 2007,³⁸ we encourage DFO to identify as critical habitat certain spawning habitat of key Chinook stocks. This is consistent with the definition of habitat for aquatic species in s. 2 of SARA, which includes areas on which a species depends directly *or indirectly* in order to carry out its life processes. Resident Killer Whales depend indirectly on certain Chinook spawning streams, which are a necessary precondition to Chinook prey availability, a critical habitat component.

Importantly, quite apart from what the Recovery Strategy states on its face, we have information from its drafters. As one example, its drafters have confirmed at various times over the last six years, including right after the Recovery Strategy was finalized in 2008, that many members of the Recovery Team who prepared the Recovery Strategy wished to identify additional critical habitat areas for the Northern Resident Killer Whales. However, DFO bureaucrats were unwilling to endorse the identification of additional critical habitat, advising the Team that there would be another opportunity in the Action Plan to identify additional critical habitat. Based on this, the Recovery Team decided that it was more important to finalize a Recovery Strategy that identified *some* critical habitat than have that strategy be further unlawfully delayed by seeking to have it identify all scientifically defensible critical habitat areas.

Since 2006, when Dr. Ford's published work confirmed that it was possible to identify additional, scientifically-defensible critical habitat but DFO bureaucrats were unsupportive, DFO scientists and others have done many years of research. To claim "more research is needed" now is, in our view, not defensible. It has always been possible to identify additional critical habitat.

³⁷ "Killer Whale Habitat Could Be Expanded to Swiftsure Bank", *Times Colonist*, May 11, 2013, found at <http://www.timescolonist.com/news/local/killer-whale-habitat-could-be-expanded-to-swiftsure-bank-1.176384>

³⁸ Comments on Recovery Strategy for Northern and Southern Resident Killer Whales (*Orcinus Orca*), August 20, 2007, found <https://www.georgiastrait.org/?q=node/683>

Additional critical habitat areas should have been identified in the Recovery Strategy. They *must* be identified now in the Action Plan.

Legally, DFO is obliged under s. 49(1)(a) to identify additional critical habitat areas to the greatest extent possible, based on the best available information and consistent with the Recovery Strategy. Yet DFO's Draft Action Plan makes no mention of the proposed critical habitat areas proposed for future identification in the Recovery Strategy (supported by Dr. Ford's 2006 publication). Moreover, the excuse offered for not identifying these areas as critical habitat, which is now long-overdue, does not hold water. The standard for identifying critical habitat is not scientific certainty. Rather, the standard is that the identification be based on the best available information and on the precautionary principle. These other long-known areas that are likely necessary for survival or recovery should be identified as critical habitat now; their identification must not be delayed for scientific certainty.

Finally, we note that the United States' National Marine Fisheries Service is currently considering whether the designation of additional areas as critical habitat of the Southern Resident Killer Whales is warranted. DFO should do the same, and it should conclude that additional critical habitat areas *must* be identified in this Action Plan.

The Action Plan must include measures to prevent and mitigate threats to critical habitat, and not simply refer to ongoing and future research

As noted above, the legal requirement in s. 49(1)(b) is to include "a statement of the measures that are proposed to be taken to protect the species' critical habitat". DFO has declined to include in its Draft Action Plan any specific, tangible, concrete measures that are proposed to be taken to protect the Resident Killer Whales' critical habitat. We acknowledge that DFO's ongoing scientific research is important. But research does not constitute a protection measure.

Because of the absence of *any* such concrete measures, our organizations are concerned that there has been bureaucratic direction to not comply with SARA. Rather than propose various necessary and appropriate measures here, we request that DFO identify specific, tangible recovery measures that can be implemented without further delay to protect the Resident Killer Whales' critical habitat.

Finally, we respectfully request that, in accordance with s. 48(1)(e), DFO should prepare the Action Plan in cooperation with our organizations to the extent possible going forward. Our organizations have significant expertise with Resident Killer Whale conservation and recovery, and have access to legal expertise. To date, the Draft Action Plan has not been prepared "in cooperation" with the various stakeholders prescribed under s. 48. Rather, it has been prepared by DFO without involvement from stakeholders. Allowing our organizations to assist in the Action Plan's preparation will help to ensure that it is scientifically defensible, economically sound, and lawful.

Appendix

***Some Species at Risk Act* provisions related to Action Plans**

Preparation

47. The competent minister in respect of a recovery strategy must prepare one or more action plans based on the recovery strategy. If there is more than one competent minister with respect to the recovery strategy, they may prepare the action plan or plans together.

Cooperation with other ministers and governments

48. (1) To the extent possible, an action plan must be prepared in cooperation with

(a) the appropriate provincial and territorial minister of each province and territory in which the listed wildlife species is found;

(b) every minister of the Government of Canada who has authority over federal land or other areas on which the species is found;

(c) if the species is found in an area in respect of which a wildlife management board is authorized by a land claims agreement to perform functions in respect of wildlife species, the wildlife management board;

(d) every aboriginal organization that the competent minister considers will be directly affected by the action plan; and

(e) any other person or organization that the competent minister considers appropriate.

Land claims agreement

(2) If the listed wildlife species is found in an area in respect of which a wildlife management board is authorized by a land claims agreement to perform functions in respect of wildlife species, an action plan must be prepared, to the extent that it will apply to that area, in accordance with the provisions of the agreement.

Consultation

(3) To the extent possible, an action plan must be prepared in consultation with any landowners, lessees and other persons whom the competent minister considers to be directly affected by, or interested in, the action plan, including the government of any other country in which the species is found.

Contents

- 49.** (1) An action plan must include, with respect to the area to which the action plan relates,
- (a) an identification of the species' critical habitat, to the extent possible, based on the best available information and consistent with the recovery strategy, and examples of activities that are likely to result in its destruction;
 - (b) a statement of the measures that are proposed to be taken to protect the species' critical habitat, including the entering into of agreements under section 11;
 - (c) an identification of any portions of the species' critical habitat that have not been protected;
 - (d) a statement of the measures that are to be taken to implement the recovery strategy, including those that address the threats to the species and those that help to achieve the population and distribution objectives, as well as an indication as to when these measures are to take place;
 - (d.1) the methods to be used to monitor the recovery of the species and its long-term viability;
 - (e) an evaluation of the socio-economic costs of the action plan and the benefits to be derived from its implementation; and
 - (f) any other matters that are prescribed by the regulations.

Regulations

- (2) The Governor in Council may, on the recommendation of the Minister after consultation with the Minister responsible for the Parks Canada Agency and the Minister of Fisheries and Oceans, make regulations for the purpose of paragraph (1)(f) prescribing matters to be included in an action plan.