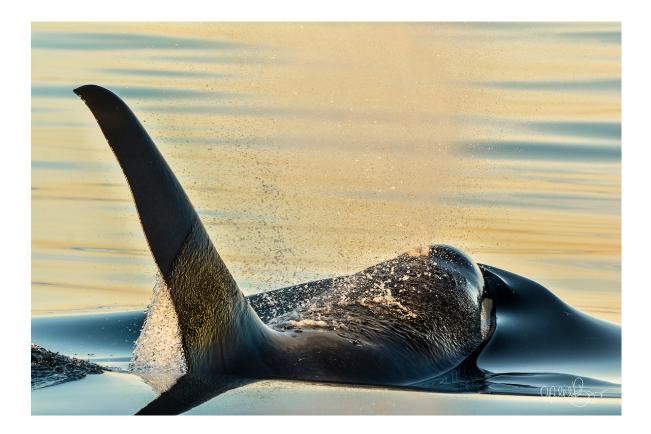


## WCELA Submission to the Standing Committee on Fisheries and Oceans on M-154: Situation of Endangered Whales

November 2018



## INTRODUCTION

West Coast Environmental Law Association (WCELA) is dedicated to safeguarding the environment through law. Since 1974 our staff lawyers have successfully worked to develop proactive legal solutions to protect and sustain the environment. Our marine program seeks to strengthen Canada's legal framework for ocean conservation.

We are grateful for the opportunity to contribute to the identification of steps to better protect at-risk whales, and to identify immediate and longer-term improvements limiting the impact of human activities on these species.

The focus of this submission is to recommend that the government use the full range of its regulatory powers to protect the southern resident killer whale (SRKW) population. Voluntary actions to date have not prevented the species' decline.

## SOUTHERN RESIDENT KILLER WHALES

Over 40 species of marine mammals make their home within Canada's oceans. Cetaceans have significant roles marine ecosystems on all three of Canada's coasts for cultural and spiritual reasons, as engineers of marine ecosystems, and for their critical places within foodwebs.

Cetaceans have been among the primary victims of increasing human activities within the oceans. Historically, whale hunting and live-capture reduced their populations. Presently, cetaceans experience cumulative impacts from pollution, extractive activities, increased coastal development, marine vessels including whale watching boats, and competition for prey. As a result of the multitude of human-caused threats, 14 marine mammal populations have been listed as Endangered or Threatened under the *Species at Risk Act* (SARA).

Scientists identified several eco-types of killer whales (*Orcinus orca*) within the coastal waters off British Columbia in the 1980s. The SRKW population was recognized as distinct from other resident populations on the coast from studies of pod behaviours.<sup>1</sup>

It is reflective of the beauty and complexity of marine ecosystems that multiple eco-types of killer whale exist on Canada's Pacific coast, and worldwide, by culturally-driven evolution – such as specialization on particular prey species, development of distinct behaviours, vocal dialects, and traits. As apex predators

<sup>&</sup>lt;sup>\*</sup> Cover photograph by April Bencze Wildlife Photography

within the food web, the SRKW are indicative of the broader status of the ecosystem and species that support this unique population.

Listed under SARA as endangered in 2003, the population has since declined to 74 individuals as of September 2018, with serious implications for the genetic diversity, and the resiliency of the population among other concerns.<sup>2</sup> SRKW were listed as Endangered due to their small population size, low reproductive rate, and vulnerability to anthropogenic threats.

The Recovery Strategy identifies three main threats to SRKWs, 1) environmental contamination; 2) acoustic and physical disturbance; and 3) reduced availability of their preferred prey, Chinook salmon. For a full description of these threats and how they interact with each other, see the detailed peer-reviewed scientific literature cited in the Ecojustice petition to the Minister of Fisheries and Oceans Canada for an emergency order under SARA.<sup>3</sup>

#### **OPPORTUNITY TO USE FULL RANGE OF LEGAL TOOLS TO PROTECT SRKWS**

Fortunately, Canada has a suite of legal tools available to protect SRKWs. Unfortunately, the full power of these laws has not yet been used. The Governor in Council's refusal to issue a SARA emergency order at the end of October 2018 is the most recent demonstration of the federal government's unwillingness to use its regulatory powers. A 2018 audit from Canada's Commissioner on Environment and Sustainable Development (CESD) highlighted that the slow pace of implementation of available tools within SARA, among other federal legislation, has precluded effective protection of marine mammals to date.<sup>4</sup>

This submission recommends using the full power of existing laws to better protect the SRKWs and improve their prospects for recovery. These laws are:

- (i) The *Species at Risk Act* (SARA), the key law for protection of endangered species.
- (ii) The *Fisheries Act*, which regulates fishing, and includes the Marine Mammal Regulations.
- (iii) The Oceans Act and the National Marine Conservation Areas Act, two of the main laws for creating federal marine protected areas (MPAs). The Oceans Act also has regulatory powers to issue Marine Environmental Quality Guidelines to reduce underwater noise and other contaminants.

Fisheries and Oceans Canada prepared science based reviews of the effectiveness of the current management and recovery actions for the three endangered whale species that are the subject of this Committee's study in 2017. The expert review for the SRKW states that the population continues to decline and that "thus far no recovery measures have been implemented that directly aim to reduce shipping noise or improve prey availability"<sup>5</sup> – two known threats.

Actions that have been taken for SRKWs are primarily those that are researchbased, information-gathering, and monitoring, rather than those that restrict direct human caused threats such as fishing, shipping or pollution causing activities.<sup>6</sup>

While the list of measures for the SRKW that the government introduced on October 31, 2018 is commendable, the measures are for the most part voluntary.<sup>7</sup> The government's reluctance to make legally binding restrictions on the activities threatening the SRKWs is frustrating. The Governor-in-Council recently refused to use the tool considered to be among the most effective when a species reaches this level of decline, the SARA Emergency Order, which would allow the government to act swiftly and compel compliance by other departments.

Comparing what the government has done to date with the powers it could employ reveals how few legally binding enforceable regulations have been put in place to protect the SRKW population. Here is a list of the 2018 measures accompanied by available regulatory actions that have not been used to date. This Committee could recommend that these powers be fully used as one of the ways to better protect the SRKWs.

#### Government measure on habitat:

Continuing to identify and protect new areas of habitat necessary for survival or recovery of the Southern Resident Killer Whale Population.

Advancing feasibility work on one or more South Resident Killer Whale sanctuaries within sub-areas of critical habitat the whales use for foraging.

**Regulatory action needed:** Immediate designation under SARA of additional scientifically recommended areas of critical habitat.

#### Government measure on Chinook salmon:

Introducing important measures aimed at protecting and recovering Chinook salmon stocks that are significant for the Southern Resident Killer Whales.

**Regulatory action needed:** Further reductions of Chinook harvest at times and places that will have the most benefit for SRKWs, such as that requested by environmental groups in their lawsuit seeking a SARA emergency order: Establish protected "feeding refuges" to enable Southern Residents to forage without competition, interference, noise or disturbance from recreational and commercial salmon fishing, from May 1 - November 30.

#### Government measure on underwater noise reduction:

Expanding the vessel slowdowns to further reduce underwater noise.

Developing agreements with ferry operators and other marine industry partners to formalize current voluntary measures to reduce noise.

Launching consultation with marine industry on development and implementation of Noise Management Plans.

**Regulatory action needed:** Regulation of underwater noise through the issuance of enforceable Marine Environmental Quality guidelines under the *Oceans Act*, or SARA or *Shipping Act* regulations.

#### Government measure on reducing physical disturbance and ship strikes:

Expanding vessel monitoring systems and capabilities to develop real time ability to avoid whale encounters and providing funding to Ocean Wise for the development and deployment of a Whale Report Alert System.

**Regulatory action needed:** Restrict whale watching boat traffic and other vessel traffic in areas of critical habitat through legally-binding measures.

#### Government action on pollution:

Enhancing regulatory control of five key organic pollutants, including two flame retardants to lessen contaminants impacting these whales.

**Regulatory action needed:** This is one area where the government does propose to use regulatory powers which will better protect SRKWs and other marine life.

## I. SPECIES AT RISK ACT - INADEQUATE IMPLEMENTATION

SARA was established in 2002 with the Purpose to "prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened. "SARA prohibits the killing, harming, taking, capturing, and harassment of species listed as endangered or threatened under the Act.

SARA requires steps to be taken to reverse the decline of listed species, and these steps have identified deadlines within the Act.

The steps in SARA protection, and how they have been applied to SRKW, are:

# (A) Identification of the habitat necessary for the survival and recovery of a SARA-listed threatened or endangered population (termed "critical habitat").

For the SRKW, this habitat was first identified in 2008. Since identification, critical habitat for the SRKW has been amended twice: first in 2011 and now, in 2018 an additional area has been identified off the west coast of Vancouver Island and is pending designation. The 2017 review of the SRKW plans recommended that designation and enforcement of this additional area should be implemented as soon as possible.<sup>8</sup>

## (B) Preparation of a Recovery Strategy.

The Recovery Strategy for SRKW was completed in 2008, four years late. The strategy was updated in 2011, following litigation. The recovery strategy defined the population and distribution objective for both the Northern and Southern Resident Killer Whale as: "Ensure the long-term viability of Resident Killer Whale populations by achieving and maintaining demographic conditions that preserve their reproductive potential, genetic variation, and cultural continuity."<sup>9</sup> Culture refers to a body of information and behavioural traits that are transmitted within and between generations by social learning. The Recovery Strategy has 4 objectives: 1) to ensure an adequate and accessible food supply to allow recovery; 2) to ensure that pollutants do not prevent recovery; 3) to ensure that disturbance from human activity does not prevent recovery; and 4) to protect critical habitat and identify additional areas for critical habitat designation and protection.

## (C) Preparation of an Action Plan.

The Action Plan was completed in 2017, also four years late. It includes a number of actions similar to those recommended in the Recovery Strategy. However, as said by lawyers for Ecojustice who successfully sued the federal government over inadequate legal protection for SRKWs: "There is a troubling lack of action in the Action Plan."<sup>10</sup> This conclusion is echoed in the DFO expert review.<sup>11</sup>

## (D) Issuance of a Critical Habitat Order.

A Critical Habitat Protection Order issued under SARA prohibits destruction of the features, functions and attributes of identified SRKW Critical Habitat. Destruction is considered to occur when there is a loss of a function when it is required by the species.<sup>12</sup> The SRKW Order was first issued in 2009.<sup>13</sup> However, the DFO science review for the SRKW noted that: "Critical Habitat identification alone does not necessarily result in direct reductions of threats. In order for

threats to be reduced, Critical Habitat requirements need to be adequately enforced."<sup>14</sup>

The government has repeatedly missed the SARA imposed deadlines to complete the steps for SRKW protection and recovery and was forced by multiple lawsuits and court orders into compliance. Lawyers at Ecojustice presented a paper with a chronology of the SARA process as has been applied to SRKWs last spring.<sup>15</sup>

#### **Emergency Order**

Section 80 of SARA provides the Governor in Council with the power to make an emergency order to provide for the protection of a listed wildlife species, on the recommendation of the competent minister. The competent minister <u>must</u> make the recommendation if he or she is of the opinion that the species <u>faces imminent</u> <u>threats to its survival or recovery</u> (emphasis added). This section states that an emergency order may include identification of habitat that is necessary for the survival or recovery of the species in the area to which the emergency order relates, as well as provisions requiring the doing of things that protect the species and that habitat and provisions prohibiting activities that may adversely affect the species and that habitat. The petition submitted by Ecojustice on behalf of their environmental group clients recommends a full suite of regulations that an emergency order should cover.<sup>16</sup>

This month, the Ministers of Fisheries and Oceans and of Environment and Climate Change recommended the issuance of an emergency order for the SRKWs. The Governor in Council decided not to issue the Order citing the range of other measures put in place for the SRKWs. Unfortunately the majority of these measures are voluntary. As the Federal Court has stated in regard to policies and voluntary agreements in one of the cases involving SRKW: "Discretionary protection does not legally protect critical habitat from destruction, since it is neither mandatory nor enforceable."<sup>17</sup>

## **II. FISHERIES ACT**

The 2017 DFO science review recommended measures that increase prey availability as being of paramount importance to the SRKW.<sup>18</sup>

As the *Fisheries Act* regulates fishing, the full use of this Act's powers to restrict Chinook fisheries will address the primary threat to the SRKW survival.<sup>19</sup>

The Marine Mammal Regulations are another tool under the *Fisheries Act* to assist in SRKW protection. Amendments to these regulations were finally brought into force in 2018.<sup>20</sup> The amended regulations put stronger prohibitions in place

against causing disturbance to marine mammals, and set new restrictions on approach distances for whale watching boats. The minimum approach distance for all killer whales in Canada's Pacific Ocean is 200 metres. These regulations should be closely monitored and enforced, and further amended if the SRKW still show signs of stress from whale watching boats and other vessels. There are precedents of greater distances in Canada for other at-risk whale species, such as a 400 metre distance for belugas in the St. Lawrence Estuary.<sup>21</sup>

## **III. OCEANS ACT & PROTECTION STANDARDS FOR MPA LAWS**

Marine protected areas (MPAs) are recognized globally as a strategy for the conservation of marine ecosystems, and also for marine mammal species.<sup>22</sup> The SRKW would benefit from having their critical habitat protected in one or more MPAs with prohibitions on human activities proved to cause harm to this species. Planning for one such large MPA is underway, but is proceeding very slowly.

Strongly protected MPAs can benefit marine mammals and the marine ecosystems they rely upon, by protecting access to important habitats, and maintaining or restoring the quality of habitat that they need to survive. MPAs can protect key habitat areas for marine mammals, such as feeding, wintering, breeding, or resting areas, as well as migratory routes.

Three primary federal laws authorize creation of MPAs:

- I. The Oceans Act,
- II. The National Marine Conservation Areas (NMCA) Act, and
- III. The Canada Wildlife Act.

The first two laws are most relevant to the SRKWs. An NMCA for the Southern Strait of Georgia has been under development for more than 22 years. Proposed boundaries of the NMCA includes SRKW critical habitat.<sup>23</sup>

The *Oceans Act* is the flagship ocean protection law in Canada. It could be used to protect additional areas of critical habitat for SRKW, though no *Oceans Act* MPAs currently exist, or are being proposed, in these areas for this purpose.

The 2018 CESD audit found that MPAs are currently not being used to protect marine mammals from threats posed by human activities, including finding that:

- Commercial fishing was prohibited in only 17% of the area within MPAs,
- Commercial marine vessels were prohibited in only 10% of the area within MPAs, and
- Of the 34 fishery closures that are being counted toward Canada's marine biodiversity conservation targets, only two are intended to protect marine mammals.<sup>24</sup>

MPA planning and regulation should more directly protect and reduce threats to marine mammals. Three of the 11 MPAs designated by Fisheries and Oceans Canada in areas outside British Columbia have specific objectives relating to protecting marine mammals, but even these three have few restrictions on commercial fishing and have no restrictions on marine vessel traffic:<sup>25</sup>

- The Gully Marine Protected Area, established with a conservation priority of "Protecting whales and dolphins from the impacts of human activities" prohibits all fishing in 25% of the area, while fishing was just limited in the rest of the marine protected area. There are no limitations for marine vessels.
- The Tarium Niryutait Marine Protected Area, established with a key objective "To conserve and protect beluga whales" has no limitations on commercial fishing or marine vessels.
- The Anguniaqvia niqiqyuam Marine Protected Area, established with a conservation objective to "maintain the habitat to support populations of key species (such as beluga whales, Arctic char, and ringed and bearded seals)" prohibits bottom trawling within the entire marine protected area. However, commercial fishing had no other limitations, and marine vessels had no limitations.

Spatial management measures provide the opportunity to manage multiple cumulative impacts within an area, including underwater noise pollution. "Marine protected areas (MPAs) offer one of the most effective means to protect cetaceans and their habitat from the cumulative and synergistic effects of noise as well as from other anthropogenic stressors."<sup>26</sup> No binding legal strategies have been adopted within Canada to limit underwater noise outputs.<sup>27</sup> Adopting an action plan with numerical targets and timelines for reductions to shipping noise within critical habitat areas for SRKWs and other marine mammals is a strategy recommended by leading scientists<sup>28</sup> and international organizations.<sup>29</sup>

Examples of marine protected area regulations that address acoustic and vessel disturbance to cetaceans include:

- Regulations for the Gully Marine Protected Area, a marine canyon offshore of Nova Scotia that includes critical habitat for endangered northern bottlenose whales, prohibit activities in the vicinity of the MPA that result in the disturbance, damage, destruction or removal of organisms or habitats within the Gully MPA itself.<sup>30</sup>
- Regulations for the Saguenay-St. Lawrence Marine Park in Québec prohibit personal watercraft, require permitting for commercial traffic, allow for

conditions to be attached to permits such as training programs for vessel operators, and enable the establishment of temporary exclusion zones for vessels. Specific regulations prohibit and define disturbance of marine mammals, define minimum approach distances for marine mammals, maximum vessel concentrations around whales, and speed limits for vessels within the Park.<sup>31</sup>

• The Robson Bight (Michael Bigg) Ecological Reserve includes Critical Habitat for Northern Resident Killer Whales. The reserve is closed to the public. Prohibitions on all consumptive resource uses and the use of motorized vehicles within the reserve help maintain the area as a killer whale sanctuary.<sup>32</sup>

The National Advisory Panel on Marine Protected Area Standards recommended in September 2018 that a protection standard be applied in all federal MPAs that prohibits industrial activities such as oil and gas exploration and exploitation, mining, dumping and bottom trawling. The Panel further recommended that if industrial activities are allowed to occur in areas Canada counts as "other effective area-based conservation measures", that the Minister of Fisheries, Oceans and the Canadian Coast Guard must be satisfied that any risks to important biodiversity values in these areas are avoided or mitigated.<sup>33</sup>

Full use of regulatory powers under Canada's MPA laws will assist the protection and recovery of the SRKW, especially if these protection standards are legally enshrined to improve the quality of protection afforded to MPAs.

## **RECOMMENDED ACTIONS**

Accordingly, we recommend that the government take these actions for the southern resident killer whales and their critical habitat areas:

- Newly Identified Critical Habitat
  - (1) Immediately designate the new identified area of critical habitat for SRKWs under the *Species at Risk Act*.

#### • Designated Critical Habitat

(2) Restrict fishing of the SRKWs' primary prey, Chinook salmon, using the provisions of the federal *Fisheries Act*. The SARA emergency order could also be used to set restrictions on fishing that maximise Chinook salmon abundance. In addition, DFO must adopt specific targets for increasing Chinook populations for prey availability to SRKW.

- (3) Reduce existing levels of physical and acoustic disturbance from vessels within the critical habitat identified under SARA for the SRKWs by:
  - i. Setting legally binding longer-term underwater noise reduction targets,
  - ii. Setting short-term limitations on noise levels, such as imposing and enforcing vessel speed limits,
  - iii. Strictly enforcing the approach distances for whale watching boats under the 2018 revised Marine Mammal Regulations and considering greater approach distances in consultation with Washington State,
  - iv. Creating and enforcing "no-go" zones for vessel traffic in particularly sensitive areas of the habitat, or at particularly sensitive times of year.

#### • Creation of new Marine Protected Areas and Protection Standards

- (4) Complete the proposed National Marine Conservation Area in the Southern Strait of Georgia, which includes critical habitat for SRKWs, on an expedited basis.
- (5) Implement the recommendations of the Expert Advisory Panel on MPAs by creating legally binding protection standards for MPAs.

## CONCLUSION

Marine mammals are important indicators of the state of marine ecosystems. The threats from human activities act cumulatively upon cetacean populations, and as such it is important to address these threats simultaneously to support recovery of at-risk populations. For example, significant reduction in acoustic disturbance combined with increasing prey availability may allow population growth of southern resident killer whales.<sup>34</sup>

The legal tools available to protect SRKWs have not yet been used to the extent possible to prevent the decline of this seriously endangered species.

West Coast is grateful for the opportunity to present our views. We look forward to seeing bold actions taken for the southern resident killer whales and for at-risk marine mammals across Canada's oceans.

Maryann Watson, Marine Scientist Linda Nowlan, Staff Lawyer <sup>3</sup> Petition for Southern Resident Killer Whale Emergency Order - January 30, 2018 (Petition for Southern Resident Killer Whale Emergency Order). https://www.ecojustice.ca/wpcontent/uploads/2018/01/Petition-for-SRKW-Emergency-Order.pdf

<sup>4</sup> Office of the Auditor General of Canada. 2018. Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada, Report 2: Protecting Marine Mammals.

<sup>5</sup> Fisheries and Oceans Canada. Review of the Effectiveness of Recovery Measures for Southern Resident Killer Whales. http://www.dfo-mpo.gc.ca/species-especes/publications/mammalsmammiferes/whalereview-revuebaleine/review-revue/killerwhale-epaulard/page09-eng.html

<sup>6</sup> Fisheries and Oceans Canada, 2017, Southern Resident Killer Whale: A science-based review of recovery actions for three at-risk whale populations - Summary Report, Ottawa, online: http://www.dfo-mpo.gc.ca/species-especes/publications/mammals-mammiferes/whalereviewrevuebaleine/summary-resume/killerwhale-epaulard-eng.html

<sup>7</sup> Fisheries and Oceans Canada. Protecting Southern Resident Killer Whales. https://www.canada.ca/en/fisheries-oceans/news/2018/10/protecting-southern-resident-killerwhales.html

<sup>8</sup> Fisheries and Oceans Canada. Review of the Effectiveness of Recovery Measures for Southern Resident Killer Whales. http://www.dfo-mpo.gc.ca/species-especes/publications/mammalsmammiferes/whalereview-revuebaleine/review-revue/killerwhale-epaulard/page09-eng.html <sup>9</sup> Fisheries and Oceans Canada. 2018. Amended Recovery Strategy for the Northern and Southern Resident Killer Whales (Orcinus orca) in Canada [Draft]. Species at Risk Act Recovery Strategy Series, Fisheries & Oceans Canada, Ottawa, ix + 83 pp

<sup>10</sup> D.Tuytel and M. Venton. Challenges in Receiving SARA Protections: A killer (whale) case study. A Symposium on Environment in the Courtroom: Enforcement Issues in Canadian Wildlife Protection March 2 & 3, 2018 University of Calgary at pg 6

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<sup>11</sup> Fisheries and Oceans Canada. Review of the Effectiveness of Recovery Measures for Southern Resident Killer Whales. http://www.dfo-mpo.gc.ca/species-especes/publications/mammalsmammiferes/whalereview-revuebaleine/review-revue/killerwhale-epaulard/page09-eng.html

<sup>12</sup> SARA. 2015. Directive on identifying critical habitat for aquatic species at risk. https://www.canada.ca/en/environment-climate-change/services/species-risk-publicregistry/critical-habitat-descriptions/directive-identifying-aquatic.html

<sup>13</sup> Critical Habitats of the Northeast Pacific Northern and Southern Resident Populations of the Killer Whale (Orcinus orca) Order, SOR/2009-68

<sup>14</sup> DFO. 2017. Review of the Effectiveness of Recovery Measures for Southern Resident Killer Whales.

<sup>15</sup> Challenges in Receiving SARA Protections: A killer (whale) case study. Dyna Tuytel and Margot Venton A Symposium on Environment in the Courtroom: Enforcement Issues in Canadian Wildlife Protection March 2 & 3, 2018 University of Calgary https://cirl.ca/files/cirl/tuytel difficultites-inreceiving-sara-protections eng.pdf

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<sup>&</sup>lt;sup>2</sup> M.J. Ford, K.M Parsons, E.J. Ward, J.A. Hempelmann, C.K. Emmons, M.B. Hanson, K.C. Balcomb, & L.K. Park. 2018. Inbreeding in an endangered killer whale population. Animal Conservation 21: 423-432. doi:10.1111/acv.12413

<sup>16</sup> Petition for Southern Resident Killer Whale Emergency Order - January 30, 2018 (Petition for Southern Resident Killer Whale Emergency Order). https://www.ecojustice.ca/wp-content/uploads/2018/01/Petition-for-SRKW-Emergency-Order.pdf

<sup>17</sup> Para 80, David Suzuki Foundation et al. v. Canada (Minister of Fisheries and Oceans, Minister of the Environment 2010 FC 1233

<sup>18</sup> Fisheries and Oceans Canada. Review of the Effectiveness of Recovery Measures for Southern Resident Killer Whales. http://www.dfo-mpo.gc.ca/species-especes/publications/mammalsmammiferes/whalereview-revuebaleine/review-revue/killerwhale-epaulard/page09-eng.html

<sup>19</sup> R.C. Lacy, R. Williams, E. Ashe, K.C. Balcomb III, L.J.N. Brent, C.W. Clark, D.P. Croft, D.A. Giles, M. MacDuffee & P.C. Paquet. 2017. Evaluating anthropogenic threats to endangered killer whales to inform effective recovery plans. Scientific Reports 7, Article number: 14119 doi:10.1038/s41598-017-14471-0

<sup>20</sup> Marine Mammal Regulations, SOR/93-56

<sup>21</sup> Section 15.1, Marine Activities in the Saguenay-St. Lawrence Marine Park Regulations (SOR/2002-76)

<sup>22</sup> IUCN WCPA/SSC Joint Marine Mammal Protected Areas Task Force < https://www.iucn.org/commissions/world-commission-protected-areas/our-work/marinemammal-protected-areas>

<sup>23</sup> Parks Canada. Southern Strait of Georgia NMCA Study Area & Proposed boundary https://www.pc.gc.ca/en/amnc-nmca/cnamnc-cnnmca/dgsssg/~/media/E53B826CD158419481437C93AD0C0AD7.ashx

<sup>24</sup> Office of the Auditor General of Canada. 2018. Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada, Report 2: Protecting Marine Mammals.

<sup>25</sup> Office of the Auditor General of Canada. 2018. Report 2: Protecting Marine Mammals.

<sup>26</sup> Weilgart, L.S. 2006. Managing Noise Through MPAs Around Global Hot Spots. International Whaling Commission, SC/58/E25.

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<sup>28</sup> Letter to Prime Minister and Honorable Ministers LeBlanc, McKenna, and Garneau. Reducing Underwater Noise in the Salish Sea. April 12 2017.

<sup>29</sup> A.J Wright, M.P Simonds, & B.G. Varnazzi. 2016. The International Whaling Commission – Beyond Whaling. Frontiers in Marine Science, 3:158. doi: 10.3389/fmars.2016.00158

<sup>30</sup> Gully Marine Protected Area Regulations. SOR/2004-112. at Section 4.

<sup>31</sup> Marine Activities in the Saguenay-St. Lawrence Marine Park Regulations. SOR/2002-76. https://laws-lois.justice.gc.ca/PDF/SOR-2002-76.pdf.

<sup>32</sup> Robson Bight (Michael Bigg) Ecological Reserve Purpose Statement. 2003.

<sup>33</sup> Final Report of the National Advisory Panel on Marine Protected Area Standards, Submitted to the Minister of Fisheries, Oceans and the Canadian Coast Guard. 2018.

<sup>34</sup> R.C. Lacy, R. Williams, E. Ashe, K.C. Balcomb III, L.J.N. Brent, C.W. Clark, D.P. Croft, D.A. Giles, M. MacDuffee & P.C. Paquet. 2017. Evaluating anthropogenic threats to endangered killer whales to inform effective recovery plans. Scientific Reports 7, Article number: 14119 doi:10.1038/s41598-017-14471-0