

A black and white photograph of an orca breaching the ocean surface. The orca's dark, pointed dorsal fin is the central focus, rising from the water and creating a splash. The background shows the vast, slightly hazy ocean under a pale sky.

Update on Recovery Measures for Southern Resident Killer Whale

Overview of Potential Measures for 2019

April 12, 2019

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Outline

- Background and Context
- Timeline for 2019 recovery measures
- Overview of potential measures for 2019
 - Fisheries Management Measures
 - Small Vessel Management Measures
 - Commercial Vessel Noise Measures
- Contaminants
- Timelines and Next Steps
- Discussion / Questions



Background: Status of SRKW

- SRKW are listed as Endangered under the Species at Risk Act (SARA)
 - Population is facing imminent threats to their survival and recovery (i.e. extinction) if no action is taken to mitigate threats
- Population is small and declining; decline is expected to continue in the absence of significant recovery action
 - Small and declining number of mature individuals; declining over the last 10-15 years and decline is expected to continue
- Recovery is limited by three key threats:
 - Prey availability (availability = abundance + accessibility of Chinook, Coho, Chum)
 - Physical and acoustic disturbance
 - Contaminants



Background: SRKW Recovery Actions to Date

- | | |
|-------------|---|
| 2003 | <ul style="list-style-type: none">• SRKW Listed as Endangered under Species at Risk Act (SARA)<ul style="list-style-type: none">• Confers protections to individuals and to critical habitat |
| 2008 – 2017 | <ul style="list-style-type: none">• SARA Recovery Strategy and Action Plan developed for both Northern and Southern Resident Killer Whales<ul style="list-style-type: none">• Provides strategy for action and specific measures to recover populations• Identifies critical habitat – habitat necessary for survival and recovery |
| 2016 | <ul style="list-style-type: none">• Oceans Protection Plan initiated<ul style="list-style-type: none">• Broad approach to conservative marine management, including science/research to better understand threats to SRKW |
| May 2018 | <ul style="list-style-type: none">• SRKW found to have imminent threats to their survival and recovery |
| June 2018 | <ul style="list-style-type: none">• Whales Initiative announced<ul style="list-style-type: none">• Targeted initiative to recover endangered whale populations, including SRKW• Indigenous and Multi-Stakeholder Advisory Group (IMAG) established• Marine Mammal Regulations revised to include 200m minimum approach distance from KW, prohibitions against disturbance• SRKW fisheries management measures in place from June 1 through Sept 30<ul style="list-style-type: none">• i.e. closures for recreational finfish and commercial salmon• Deep sea vessel management measures in place from June through October<ul style="list-style-type: none">• i.e. vessel slow down in Haro Strait and lateral displacement trial in Juan de Fuca Strait |
| Oct 2018 | <ul style="list-style-type: none">• Additional measures to recover SRKW announced<ul style="list-style-type: none">• Commitment to have new measures in place for Spring 2019, as well as work on longer-term recovery |
| Dec 2018 | <ul style="list-style-type: none">• Designation of new Critical Habitat for SRKW (Swiftsure, La Perouse Banks) and NRKW (Dixon Entrance) |



Work-to-Date and Timeline for 2019

Nov 2018	<ul style="list-style-type: none">• Five SRKW Technical Working Groups (TWGs) established to support development of additional measures for 2019
Dec 2018	<ul style="list-style-type: none">• TWGs tasked with providing advice on immediate recovery measures by March 1, 2019 (for implementation in May)
Mar 2019	<ul style="list-style-type: none">• Consultation on TWG proposals, input used to refine measures to be considered for implementation in 2019
Apr 2019	<ul style="list-style-type: none">• Ongoing consultation on proposed measures for 2019
May 2019	<ul style="list-style-type: none">• Anticipated decisions/announcement of 2019 measures
May – Oct 2019	<ul style="list-style-type: none">• Implementation – corresponds to when SRKW are in the Salish Sea in greater numbers



Technical Working Groups (TWGs)

- Oct 31, 2018: Federal government commitment announced for additional measures to support recovery of Southern Resident Killer Whale to be in place by May 2019
 - Membership includes technical and subject matter experts from Indigenous groups, environmental organizations, academia, commercial and recreational harvesters, shipping, whale watching, and other levels of government
- TWGs tasked with providing advice on immediate recovery measures, for implementation in 2019, and on longer-term measures for 2020 and beyond
- TWGs have been meeting since December 2018 and have provided advice and proposals on immediate measures for consideration by Departments



TWG Mandates and Objectives

TWG	Mandate and Objectives
Prey Availability	<ul style="list-style-type: none">• Review measures implemented in 2018, identify potential measures for 2019• Identify measures to rebuild wild Chinook stocks, in line with Wild Salmon Policy
Sanctuaries	<ul style="list-style-type: none">• Advance feasibility of SRKW sanctuaries within critical habitat
Commercial Vessel Noise	<ul style="list-style-type: none">• Review effectiveness of 2018 measures and identify potential measures for 2019 season• Identify infrastructure needed to support measures
General Vessel Noise	<ul style="list-style-type: none">• Identify noise reduction targets, options for quiet-vessel design, and other actions for noise reduction• Identify measures to reduce noise of commercial whale watching and recreational vessels
Contaminants	<ul style="list-style-type: none">• Identify priority contaminants and identify/evaluate contribution of point and nonpoint sources to contaminant loadings to the SRKW, their habitat and their prey• Develop recommendations for additional measures to address contaminants affecting the SRKW, their habitat and their prey.



Summary of Potential 2019 Measures Identified by TWGs

Theme	Potential Measures
Large commercial vessels	<ul style="list-style-type: none"> • Consideration of expanded slowdown area • Possible continuation of lateral displacement in Strait of Juan de Fuca
General vessel measures	<ul style="list-style-type: none"> • Encourage turning off echo sounders when not in use • 1000 m go-slow (7 knots or less) buffer • Leave engine off/neutral idle within KW approach distance • Increase approach distance to 400 m around SRKW • Impose 650 m approach/suspend viewing for SRKW for next 3 years – since dropped from WA State bill
Prey	<ul style="list-style-type: none"> • Area-based seasonal fishery closures • Mobile (“bubble”) closures / fishery avoidance zone (e.g. 1km) • Adaptive management options (pre-season/in-season management triggers)
Sanctuary	<ul style="list-style-type: none"> • Definition and proposed conservation objective for sanctuaries • Apply conservative approach to managing human activities in key foraging areas • Precautionary approach in key areas with targeted education, outreach and on-water presence
Contaminants	<ul style="list-style-type: none"> • Recommendations to reduce contaminant contributions to the SRKW and their habitat will be proposed March 2020



Longer-Term Recovery Measures

- Supporting the survival and recovery of SRKW will require a range of short, medium and long-term measures across the key threats
- To-date, four TWGs have provided advice on immediate recovery measures for 2019
- The TWGs are now reconvening to discuss and provide recommendations on longer-term recovery measures, which may include:
 - Salmon habitat rehabilitation
 - Salmon enhancement
 - Chinook-predator interactions
 - Forage fish management
 - Vessel technology changes and noise management planning
 - Marine spatial planning initiatives
 - Contaminants management
- Recommendations on longer-term measures expected June 2019



Proposed Management Approach for 2019

- Informed by work of the TWGs and consultation/engagement to-date, federal departments have outlined a potential approach/suite of measures for 2019 that would:
 - Build on measures identified in 2018
 - Address key threats throughout critical habitat with enhanced measures in key areas of importance to SRKW
 - Explore the concept of SRKW “sanctuaries” in key areas (via “no go / “reduced use” zones)
 - Consider both the conservation imperative for SRKW and potential impacts on Indigenous groups, stakeholders and communities
 - Look at opportunities for alignment with Washington State
- Proposed management measures are a blend of voluntary and mandatory tools
- Effective implementation will require coordinated education, outreach, and compliance monitoring
 - This will include seeking opportunities to work with other partners

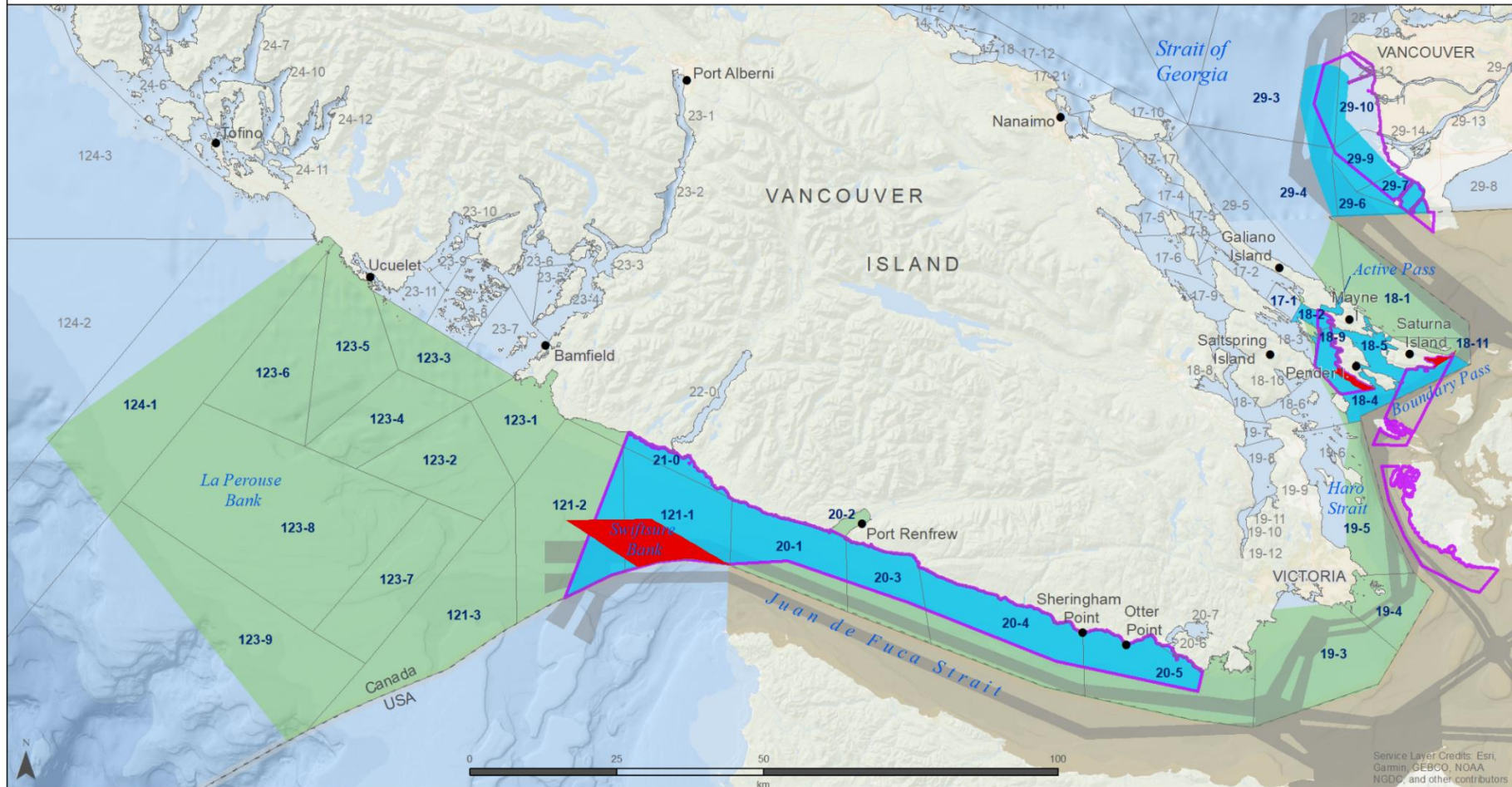


Proposed Management Approach for 2019

Area		Management Approach
Whole of SRKW Critical Habitat		“Core” measures would be applied to whole of critical habitat
Enhanced Management Areas (within Critical Habitat)	Strait of Juan de Fuca and Swiftsure Bank	“Enhanced” measures would be applied to these key areas, which are important for foraging
	Gulf Islands / Boundary Pass & Haro Strait	
	Mouth of the Fraser River	
No-Go / Reduced Use Areas (within Critical Habitat)	Saturna and Pender Islands	More restrictive measures would be applied to these specific locales within Enhanced Management Areas
	Swiftsure Bank	



SRKW Critical Habitat, Proposed Enhanced Management Areas and Key Foraging Areas



■ Enhanced Management Areas - Proposed
 ■ Critical Habitat Areas
 ■ Traffic Separation Schemes
 Key Foraging Areas *
 ■ Canada
20-4 Pacific Fishery Management Subareas
■ No-Go/Reduced Use Areas - Proposed
■ USA

*Note: The key foraging areas of Juan de Fuca Strait, the west side of Pender Island, the south side of Saturna Island, and the mouth of the Fraser River have been identified through compilation of information from sightings, acoustic detections, and expert opinion. While the Juan de Fuca Strait foraging area is supported by evidence presented in Ford et al., 2010, a peer reviewed analysis to identify all these locations as key foraging areas has yet to be performed.

Ford, J.K.B., Wright, B.M., Ellis, G.M., and Candy, J.R. 2010. Chinook salmon predation by resident killer whales: seasonal and regional selectivity, stock identity of prey, and consumption rates. DFO Can. Sci. Adv. Ser. Res. Doc. 2009/101. iv + 43 p. <http://waves-vagues.dfo-mpo.gc.ca/Library/339995.pdf>

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POTENTIAL FISHERIES MANAGEMENT MEASURES / SCENARIOS FOR 2019

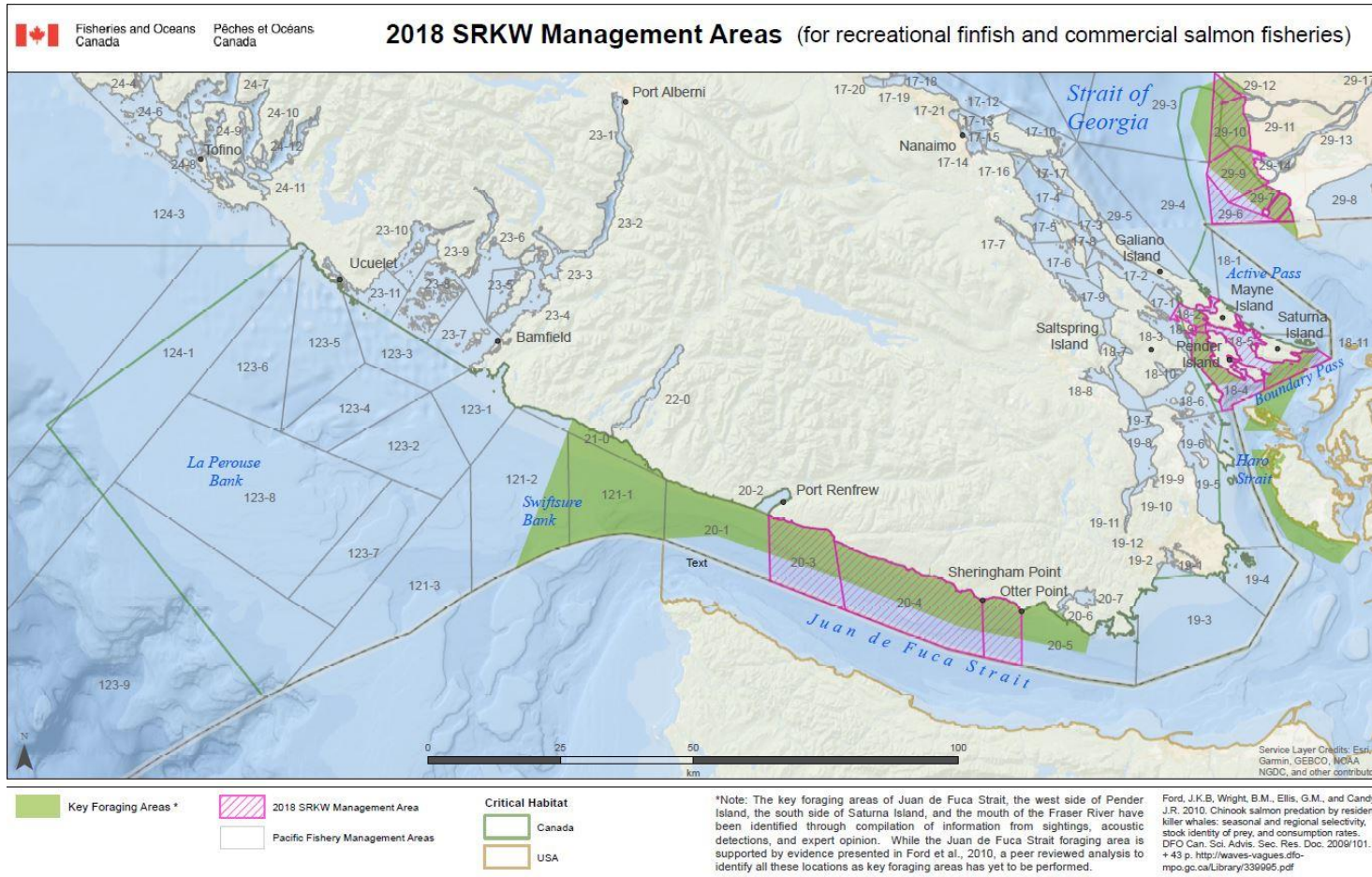


Context: Prey Availability

- Lack of prey availability (abundance and accessibility) identified as one of the key threats to SRKW recovery
- SRKW are highly-specialized predators
 - Primarily Chinook Salmon, also Chum
- Recognition that long-term rebuilding of Chinook will be key to SRKW recovery
- Objective of the proposed measures is to improve Chinook Salmon availability for SRKW by decreasing potential fishery competition, as well as, minimizing physical and acoustic disturbance in key foraging areas
- Two types of measures discussed by the Prey Availability TWG
 - **A. Area-based, seasonal fishery closures**
 - Including potential refinement of closures implemented in 2018
 - **B. Fishery Avoidance Zone**
 - Concept is to restrict recreational and (where possible) commercial fishing within a set distance of SRKW (e.g., 1km)
- Also discussed the potential for in-season management triggers (e.g. SRKW body condition, salmon abundance) – *for consideration longer term*



Background: 2018 Fisheries Management Measures



Juan de Fuca Strait (Pink hatched areas)

- closed commercial salmon and recreational finfish from June 1 through Sept 30

Gulf Islands (Pink hatched areas)

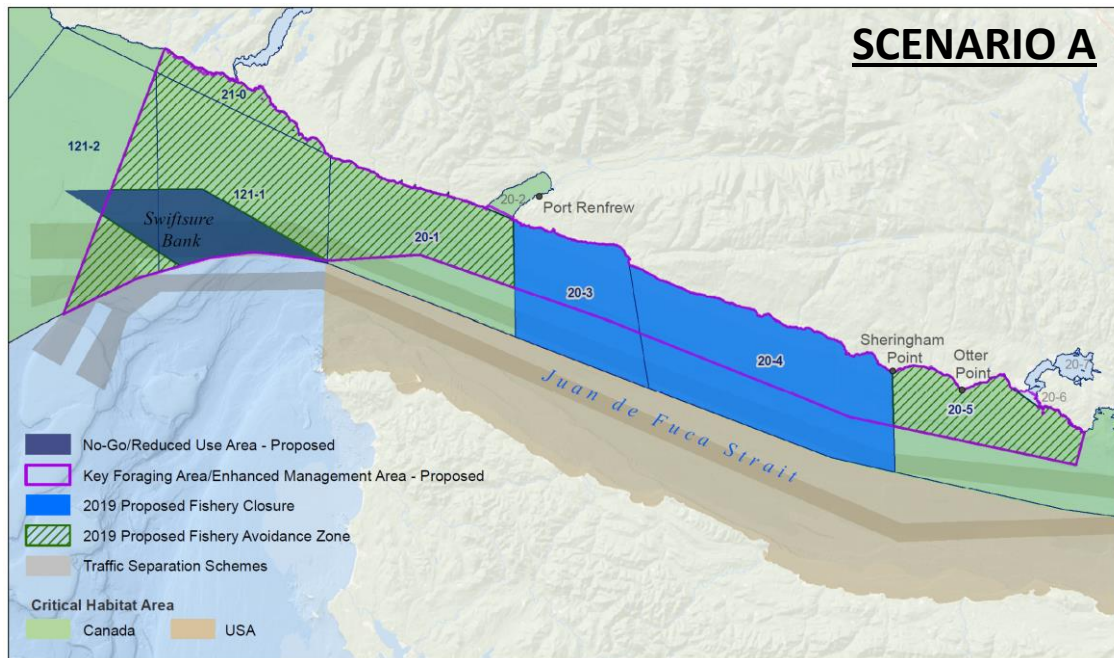
- closed commercial salmon and recreational finfish from June 1 through Sept 30

Mouth of the Fraser (Pink hatched areas)

- closed commercial salmon and recreational salmon as follows:
 - June 1 to Sept. 30: Recreational salmon fishing closure in Subareas 29-7, 29-9 & 29-10;
 - June 1 to July 31: Recreational and commercial salmon fishing closure in Subarea 29-6; and
 - Aug. 1 to Sept. 30: Recreational and commercial chinook non-retention in Subarea 29-6.



Strait of Juan de Fuca / Swiftsure Bank



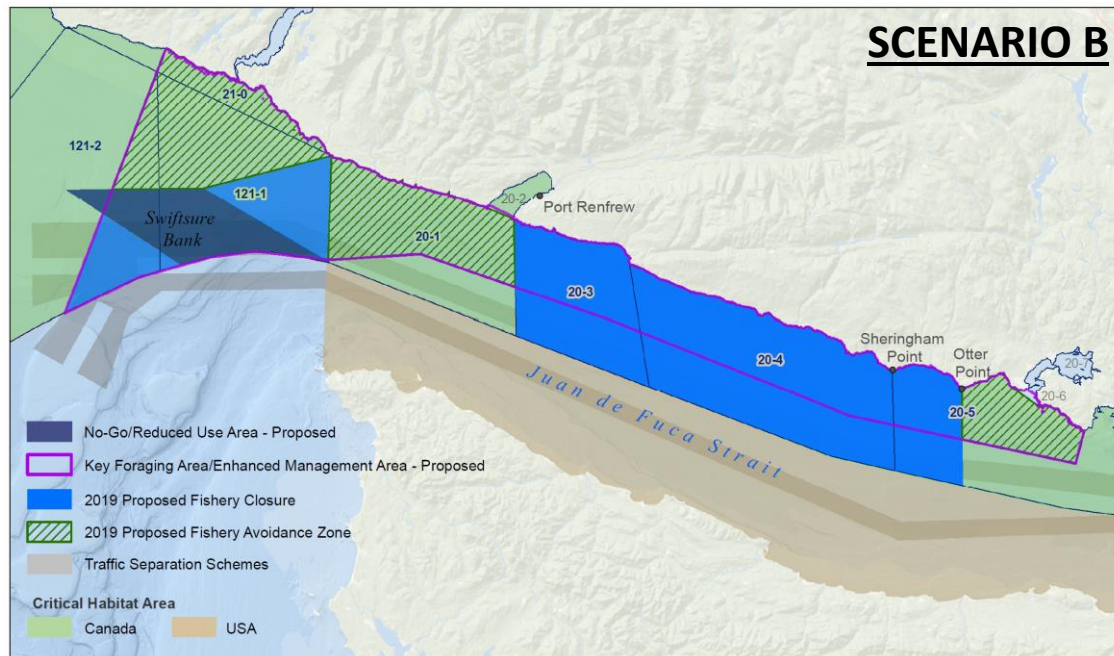
Scenario A

- Fishery closures (recreational finfish + commercial salmon) in subareas 20-4, 20-3 and expansion of existing closure in Swiftsure Bank to all commercial and recreational fisheries – **blue** area
 - Timeframe: May - October
- Voluntary fishery avoidance zone (1km) would apply in the remainder of the enhanced management area – areas with **purple** boundary and **green** cross-hatching)
- Would include potential “no go / reduced use zone” within existing Swiftsure closure – **dark blue** area

****Scenario could include expansion of fishery closures to include additional recreational fisheries and/or commercial fisheries*



Strait of Juan de Fuca / Swiftsure Bank



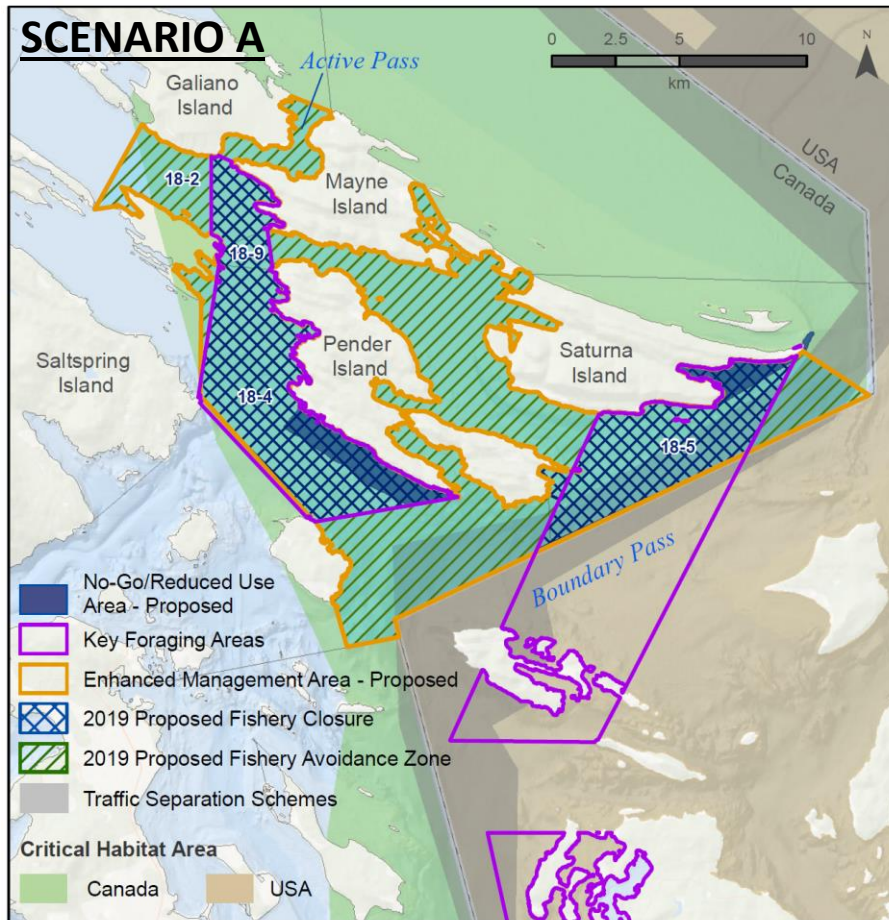
Scenario B

- Fishery closures (recreational finfish + commercial salmon) in subareas 20-4, 20-3 and portion of 20-5, 121-1 and 121-2 (including existing closure in Swiftsure Bank) – **blue** areas
 - Timeframe: May - October
- Voluntary fishery avoidance zone (1km) would apply in the remainder of the enhanced management area (areas with **purple** boundary and **green** cross-hatching)
- Would include potential “no go / reduced use zone” within existing Swiftsure closure – **dark blue** area

****Scenario could include expansion of fishery closures to include additional recreational fisheries and/or commercial fisheries.*



Gulf Islands



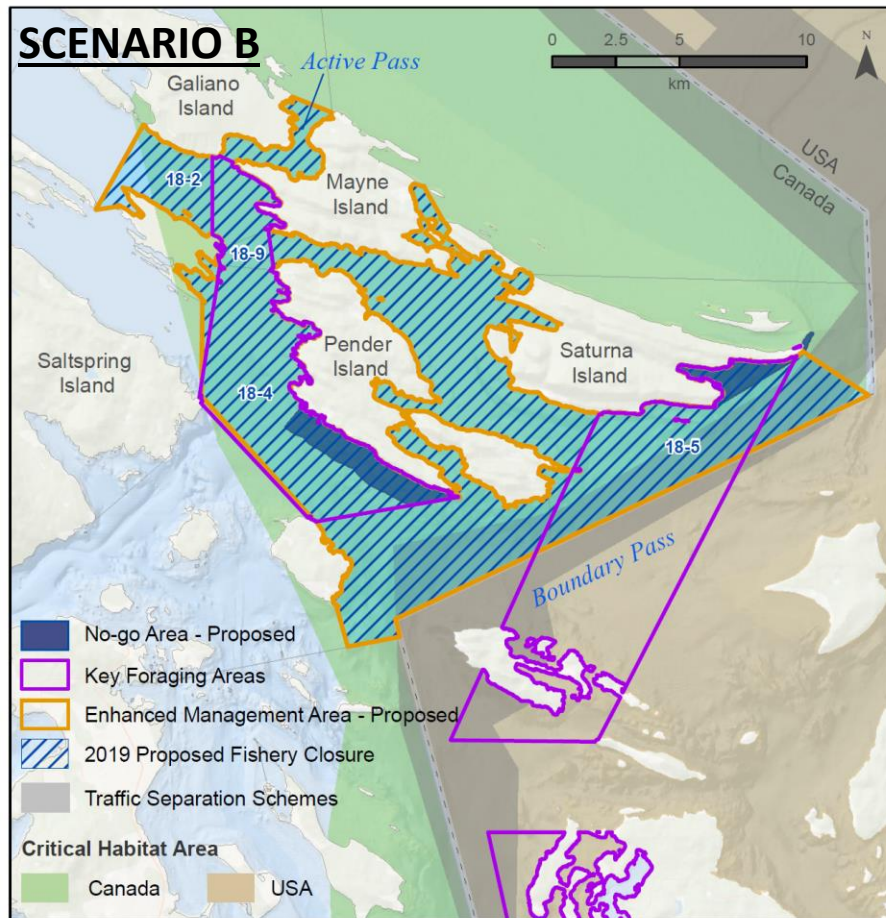
Scenario A

- Fishery closures for recreational finfish + commercial salmon in key foraging areas (**purple** outline and **blue** cross-hatch)
- Fishery avoidance zone (1km) in remainder of enhanced management area (**orange** with **green cross-hatched** area)
 - Timeframe: May - October
- Would include potential “no-go / reduced use zones” off Pender Island and Saturna Island - **dark blue** areas

****Scenario could include expansion of fishery closures to include additional recreational fisheries (shellfish) and/or commercial fisheries.*



Gulf Islands



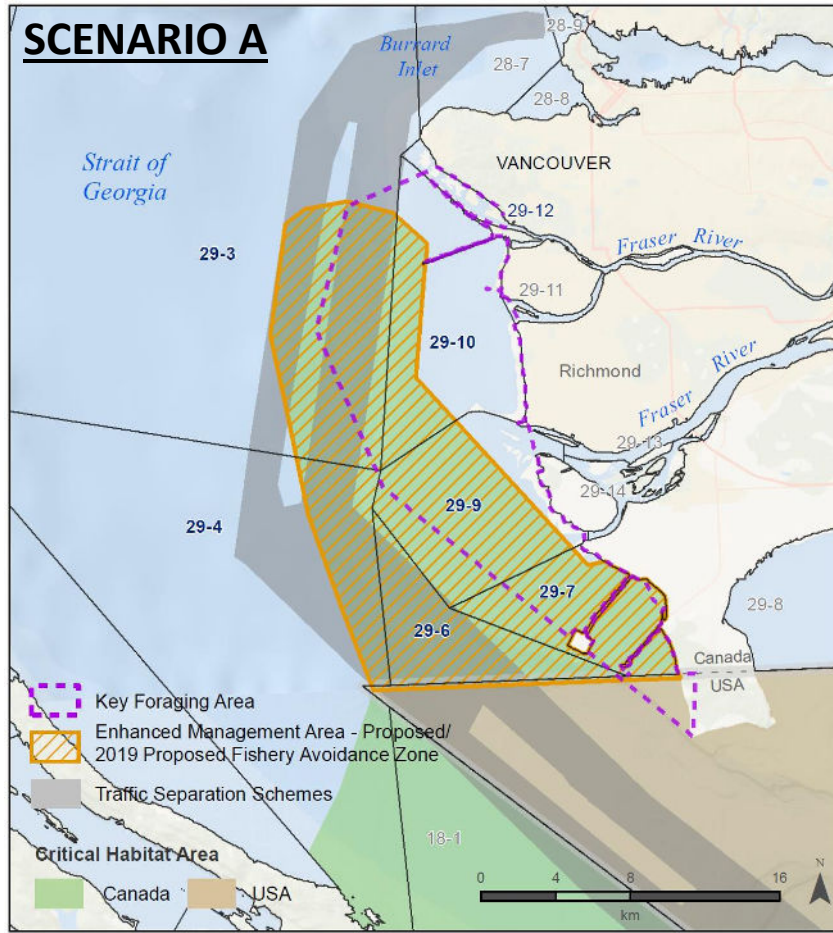
Scenario B

- Rollover of 2018 closures for recreational finfish + commercial salmon throughout enhanced management area (orange with blue hatch on map)
 - Timeframe: May - October
- Would include potential “no-go / reduced use zones” off Pender Island and Saturna Island - **dark blue** areas

****Scenario could include expansion of fishery closures to include additional recreational fisheries and/or commercial fisheries.*



Mouth of the Fraser

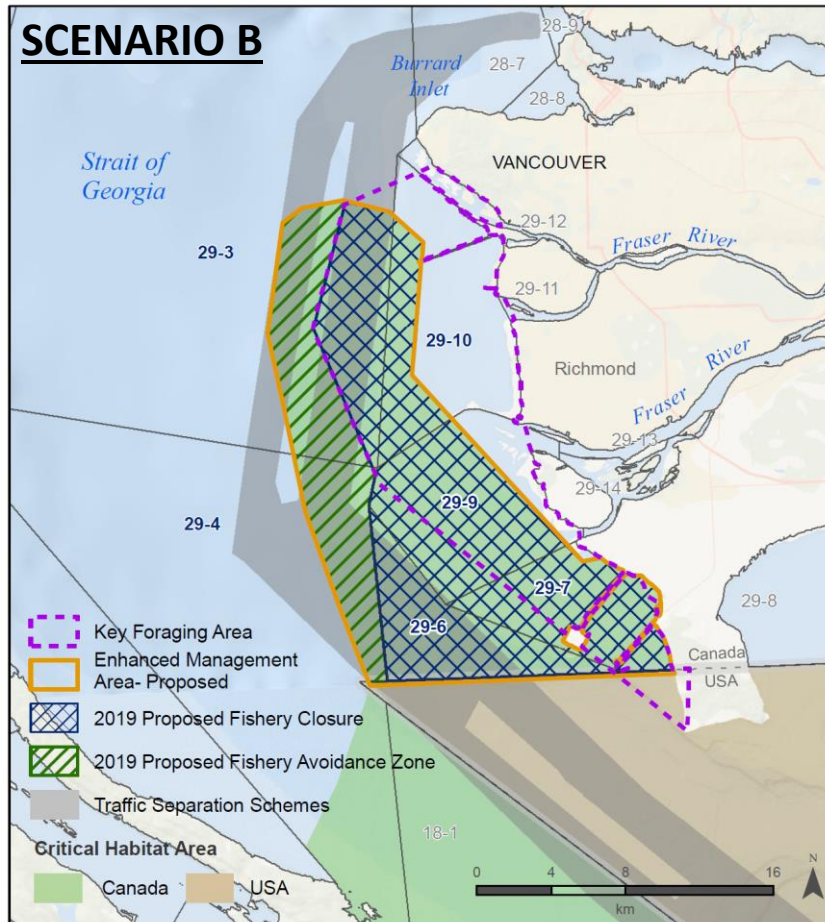


Scenario A

- No fixed, area-based closures
- Application of voluntary fishery avoidance zone (1km) throughout critical habitat area - **orange** hatched area
 - Note: modified boundaries (from 2018 fishery closures) to better align with critical habitat and deeper water portions of 29-9, 29-10



Mouth of the Fraser



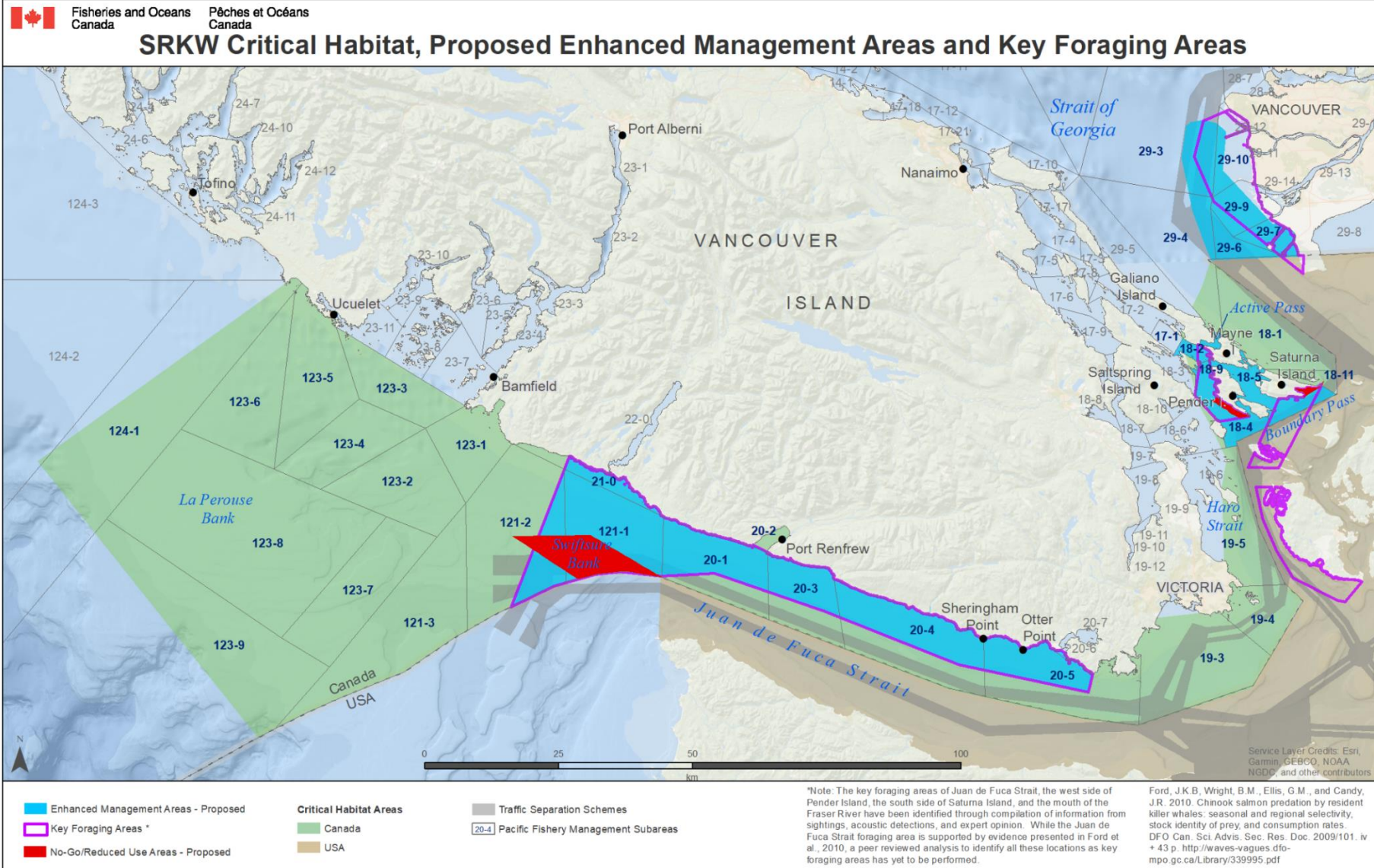
Scenario B

- Fishery closures for recreational finfish, commercial salmon with modified boundaries (from 2018) to better align with critical habitat and deeper water portions of 29-9, 29-10 – the **blue** cross-hatched area
 - Timeframe: May - October
- Voluntary fishery avoidance zone (1km) would apply in remaining critical habitat area in portions of 29-3 and 29-4

****Scenario could include expansion of fishery closures to include additional recreational fisheries and/or commercial fisheries.*



POTENTIAL VESSEL MANAGEMENT MEASURES FOR 2019





Small Vessel Management Measures

Measures under consideration include:

- Critical Habitat:

- Voluntary Measures**

- 1. Turn echo sounders off when not in use
 - 2. Turn engine to neutral idle when within KW approach distance

- Enhanced Management Areas

- Mandatory**

- 1. 400 m approach distance for all KWs in Fishery Closure Areas

- Voluntary**

- 1. 400 m approach distance for all KWs in remaining Enhanced Management Area
 - 2. 1000 m go-slow (7 knots or less) in proximity to SRKW, in the entire Enhanced Management Area

- No-Go Zones (Swiftsure Bank, South Saturna Island & West Pender Island)

- Mandatory**

- 1. Prohibition of vessels entering these areas (with exemptions)



Commercial Vessel Noise Measures

Expanded Slowdown Area in Haro Strait / Boundary Pass

- The ECHO Program Vessel Operators Committee (TWG1) is proposing an expanded slowdown area into Boundary Pass in the 2019 season on a trial basis. Possible parameters include:
 - Date range: June 1 (start monitoring, initiate slowdown based on whale presence) – September 30 (monitor and extend by 2 weeks based on whale presence to October 31, 2019)
 - Distance: 29.6 nautical miles
 - Speed scenarios: 11.5 - 14.5 knots depending on vessel type
 - Target participation rate: ~80% (note 88% participation rate in 2018)
- TC has made a commitment to determining option(s) to address participation barriers for the 2019 and future seasons.

Noise reduction measures in Strait of Juan de Fuca

- The ECHO Program Vessel Operators Committee is awaiting further analyses of 2018 vessel traffic, acoustic and SRKW activity in this area to evaluate if and what operational measure(s) might be effective at reducing noise and feasible to implement in 2019.



Context: Contaminants

- Killer Whales are particularly vulnerable to accumulating high concentrations of Persistent Organic Pollutants because they are long lived animals that feed high on the food chain and pass on a portion of their contaminant burden to their offspring.
- Persistent Organic Pollutants are a group of predominantly human-made toxic chemicals that persist in the environment, have potential to travel long distances in air and water; accumulate through the food chain and in humans; and cause adverse health effects.
- The Technical Working Group on Contaminants is working towards recommendations for 2020, reflecting the longer term nature of the contaminants' persistence in the environment, new emerging contaminants of concern and the complexity of food web interactions affecting the SRKW and their prey.



Contaminants

- Recognizing the impact of contaminants to the SRKW, work is underway to:
 - Amend the Prohibition of Certain Toxic Substances Regulations, 2012 to further restrict five chemicals (flame retardants, oil and water repellent) and prohibit two additional flame retardants if confirmed as toxic
 - Increase monitoring, surveillance (i.e., freshwater, air, landfill leachate and disposal at sea) and research (i.e., microfibers from laundry washing) to identify sources of contaminants and how they are entering aquatic environment
 - Explore opportunities to accelerate upgrades for the Iona Wastewater Treatment plant
- The Technical Working Group is working towards 2020 measures by:
 - Identifying key contaminants affecting whales and their prey
 - Building a database tool to help the estimation of pollutants and contaminant loads in the Fraser River and Salish Sea
 - Developing and implementing an Evaluation Framework to examine the existing controls for contaminants



Timelines and Next Steps

- Consultation and engagement will continue through early May, including:
 - Bilateral consultation with Indigenous groups
 - Commercial and recreational harvesters, shipping industry and other stakeholders through existing processes
 - Community meetings
 - Public, web-based consultation
- Announcement regarding 2019 measures expected in May
- TWG recommendations on longer-term measures expected in June



Discussion / Questions

- Comments, questions or feedback on the material and potential measures identified for 2019?
- Are there ways these measures could be revised in order to better protect SRKW while mitigating impacts on Indigenous groups, stakeholders or communities?
- Are there additional measures or actions you believe we should consider for 2019?
- Input and comments can be provided to the following email address (*website under development, link to be provided*):
 - DFO.SRKW-ERS.MPO@dfo-mpo.gc.ca