

Draft Programmatic Environmental Impact Statement

Commercial Whale Watching Licensing Program



Prepared for Washington Department of Fish and Wildlife

September 23, 2020

ROSS
STRATEGIC

Fact Sheet

Title: Draft Programmatic Environmental Impact Statement (DEIS) for the Commercial Whale Watching Licensing Program for Washington

Description: This is a non-project or programmatic review proposal. In spring 2019, the Washington Legislature (via RCW 77.65.620) directed the Washington Department of Fish and Wildlife (WDFW) to establish a license process for commercial whale watching of Southern Resident Killer Whales (SRKWs) in Washington inland marine waters (including Puget Sound, the Strait of Juan de Fuca, and inside the international boundary line between Washington and British Columbia) and adopt rules for commercial whale-watching license holders. The purpose of creating a new licensing program and adopting rules for commercial vessels is to enable sustainable whale watching while reducing the impacts of vessel noise and disturbance so whales can effectively forage, rest, and socialize.

The DEIS analyzes eleven components WDFW could consider in its rulemaking process to reduce vessel noise and disturbance impacts to SRKWs and organizes each component into four alternatives: Alternative 1: Most Restrictive; Alternative 2: Somewhat Restrictive; Alternative 3: Less Restrictive, and Alternative 4: No Action (Status Quo). The alternatives are designed to present feasible options for decision makers and identify probable significant adverse environmental impacts associated with each option; they represent a range of options that will allow WDFW to evaluate and compare the merits of different choices. The final action chosen by WDFW may not be identical to any single alternative; it may be a hybrid action that combines different alternative components.

A determination of significance and request for comments on the scope of an environmental impact statement was issued May 18, 2020, and one public scoping meeting was held virtually on May 28, 2020. This DEIS reflects input provided on the scope of the analysis, environmental impacts, and mitigation measures to be considered.

Location: Puget Sound, Strait of Juan de Fuca, and Southern Georgia Strait

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Permits and Licenses Required: None required.

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WDFW has also had the assistance of an Advisory Committee, informed by an Independent Science Panel, in developing its rulemaking proposal. These efforts also informed this DEIS.

- **Commercial Whale Watching Licensing Program Advisory Committee:** In November 2019, WDFW convened 11 citizens to develop new rules and processes for the commercial whale watching licensing program.
- **Washington State Academy of Sciences Independent Science Panel:** The science panel is comprised of seven scientists to provide a scientific and technical review of the best available science about disturbance and noise impacts to SRKWs.

Date of Issue: Monday, September 23, 2020

Date Comments are Due: Wednesday, October 23, 2020

Public meetings on the Draft EIS: A 2-hour virtual public meeting is scheduled on Monday, October 19, 2020, from 6:00pm to 8:00pm PDT via Zoom. The Zoom details will be posted on the WDFW website: <https://wdfw.wa.gov/species-habitats/at-risk/species-recovery/orca/rule-making>.

Date Final Action is Planned: The Commercial Whale Watching Licensing Program rulemaking proposal will be provided to the WDFW Commission for action on December 18, 2020. If adopted, the Program will be implemented in January 2021.

Date of Next Action and Subsequent Environmental Reviews: The final programmatic environmental impact statement (FEIS) on the Commercial Whale Watching Licensing Program will be released in December 2020.

Availability: Notice of the availability of this DEIS is posted on the WDFW SEPA website at <https://wdfw.wa.gov/licenses/environmental/sepa/open-comments> and notification has been emailed to local government planning departments (city and county), affected Tribes, state and federal agencies with jurisdiction, and interested parties for review. A link to the DEIS is also posted on WDFW's SEPA website and its SRKW rulemaking website: <https://wdfw.wa.gov/species-habitats/at-risk/species-recovery/orca/rule-making>. After the DSEIS is finalized, the final EIS will be posted at <https://wdfw.wa.gov/licenses/environmental/sepa/closed-final> and <https://wdfw.wa.gov/about/advisory/cwwlp>.

Individuals who need to receive this information in an alternative format or language, or who need reasonable accommodations to participate in WDFW-sponsored public meetings or other activities may contact Dolores Noyes at (360-902-2349), or TTY 771, or email (dolores.noyes@dfw.wa.gov). For more information https://wdfw.wa.gov/accessibility/reasonable_request.html.

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Acronyms and Abbreviations

| | |
|-------------------|---|
| AIS | automated identification system |
| CWW | commercial whale watching |
| CWWLP | Commercial Whale Watching License Program |
| DEIS | draft programmatic environmental impact statement |
| EIS | environmental impact statement |
| ESA | Endangered Species Act |
| FEIS | final programmatic environmental impact statement |
| KELP | Kayak Education and Leadership Program |
| Legislature | Washington State Legislature |
| PWWA | Pacific Whale Watching Association |
| SEPA | State Environmental Policy Act |
| Southern Resident | southern resident killer whale |
| SRKW | southern resident killer whale |
| WDFW | Washington Department of Fish and Wildlife |
| WRAS | WhaleReport Alert System |
| WSAS | Washington State Academy of Sciences |



Executive Summary

In 2019, the Washington Department of Fish and Wildlife (WDFW) was directed by the Washington State Legislature (Legislature) to develop a licensing program and rules for commercial whale watching. The purpose of establishing regulations for licensing commercial whale watching vessels is to ensure sustainable commercial whale watching practices that reduce the daily and cumulative impacts of vessel noise and disturbance on the endangered Southern Resident Killer Whales (SRKWs or Southern Residents). The draft programmatic environmental impact statement (DEIS) evaluates action alternatives by examining all areas of probable significant adverse environmental impact.

Background

The SRKWs are the only known resident population of orcas in the United States. They spend spring and summer months primarily in the inland marine waters of Washington and British Columbia. In the winter, they are typically in the coastal waters of the Pacific Ocean between California and British Columbia. Federal and Washington State laws list SRKWs as endangered. Vessels, including commercial whale watching vessels, create noise and disturbance that can elicit behavioral disruptions such as reduced foraging behaviors, changes in swimming patterns, increased surface-active behaviors and, along with other stressors, this can threaten their viability in Washington waters.

The licensing program is considered a “non-project action” under the State Environmental Policy Act (SEPA). Non-project actions include the adoption of plans, policies, programs, or regulations containing standards that will guide future actions. The DEIS analysis of significant environmental impacts on SRKWs is based on the best-available science resources identified by an independent panel of the Washington State Academy of Sciences. The DEIS incorporates recommendations and suggestions from public scoping comments and the Commercial Whale Watching Licensing Program (CWWLP) Advisory Committee recommendations.

Alternatives Considered

The DEIS evaluates four alternatives for a commercial whale watching licensing program in Washington, including a No Action Alternative. The alternatives range in how much they restrict commercial whale watching (CWW) activity and therefore how much they are anticipated to reduce exposure of SRKWs to CWW vessel noise and disturbance. The final action chosen by WDFW may not be identical to any single alternative; after reviewing the results of the DEIS, WDFW may choose a hybrid that combines more and less restrictive expressions of the alternatives to best meet its legislative mandate.

Alternative 1 would reduce SRKWs' exposure to CWW vessel noise and disturbance the most out of all the alternatives and would likely result in the most benefits to SRKWs. However, it would place the most extreme restrictions on CWW operations (especially at the low end of the ranges). It contains the following components:

- *Days/Hours of CWW and SRKW Viewing:* In this alternative, all CWW operations would be restricted seasonally for a period of 8 to 11 months by limiting all CWW operations to a 0- to 4-hour per day window and to 0 to 2 days per week. During the other 2 to 4 months of the year, SRKW viewing only (not CWW operations overall) would be limited to a 0- to 4-hour per day window and to 0 to 2 days per week.
- *Vessels, Time, and Locations for SRKW Viewing:* In this alternative, 0 to 2 CWW vessels would be allowed to view SRKWs at a time; CWW vessels (not including kayaks) would be limited to spending 0 to 15 minutes in the vicinity of SRKWs; and multiple geographic areas would be closed to CWW (except for safety reasons) when SRKWs are in the vicinity. The closed geographic areas would include the west side of San Juan Island (the current voluntary no-go zone that SRKWs frequently use for foraging), and other agreed upon geographic areas. Any of these limitations could be implemented on a seasonal basis for 8 to 11 months or year-round.
- *Sonar/echolocation:* In this alternative, CWW vessels that have sonar or echolocation devices would be required to turn those devices off, to standby, or tune them to 200 kHz mode when in the vicinity of SRKWs, unless there are safety concerns that require their use.
- *Reporting:* CWW operators would be required to report on the presence and location of SRKW to WDFW Enforcement and/or provide documentation of their observations of SRKWs, such as logs of SRKW sightings, viewing, and other on-the-water observations.
- *Kayak-specific rules:* In addition to meeting the requirements that apply to all CWW operators, kayak tours would be required to adhere to some or all of the voluntary Kayak Education Leadership Program (KELP) best practices, which provide a code of conduct for paddlers to assist in compliance with federal vessel regulations, as well as other restrictions.

Alternative 2 includes moderate limitations on commercial whale watching to reduce potential noise and disturbance impacts on SRKWs. It contains the following components:

- *Days/Hours of CWW and SRKW Viewing:* In this alternative, all CWW operations, including SRKW viewing, would be restricted seasonally for a period of 4 to 7 months by limiting CWW operations to a 4-to 8-hour per day window and to 3 to 5 days per week. WDFW may decide to implement the SRKW-viewing limitations either year-round or for 4 to 7 months.

- *Vessels, Time, and Locations for SRKW Viewing:* In this alternative, 3 to 4 CWW vessels would be allowed to view SRKWs at a time; CWW vessels (not including kayaks) would be limited to spending 16 to 45 minutes in the vicinity of SRKWs; and multiple geographic areas would be closed to CWW (except for safety reasons) when SRKWs are in the vicinity. The closed geographic areas would include the west side of San Juan Island (the current voluntary no-go zone that SRKWs frequently use for foraging), and at least one other agreed upon geographic area. Any of these limitations could be implemented on a seasonal basis for 4 to 7 months instead of year-round.
- *Reporting:* CWW operators would be required to report SRKW locations to WDFW Enforcement when private vessels are in the presence of SRKWs (e.g., when 1 or more private vessels are in the vicinity or only when larger groups of private vessels are in the vicinity).
- *Kayak-specific rules:* In addition to meeting the requirements that apply to all CWW operators, kayak tours would need to adhere to some or all of the voluntary KELP best practices outlined in the Kayaker Code of Conduct.

Alternative 3 is a less restrictive set of limitations on commercial whale watching and could potentially reduce noise and disturbance impacts to SRKWs. This alternative includes more restrictions on commercial whale watching than the status quo. It contains the following components:

- *Days/Hours of CWW and SRKW Viewing:* In this alternative, all CWW including SRKW viewings operations would be restricted seasonally for a period of 1 to 3 months by limiting CWW operations to 6 days per week and operating hours to the period from 1 to 2 hours after sunrise to 1 to 2 hours before sunset. WDFW may decide to implement the SRKW-viewing limitations either year-round or for 1 to 3 months.
- *Vessels, Time, and Locations for SRKW Viewing:* In this alternative, 5 to 10 CWW vessels would be allowed to view SRKWs at a time; CWW vessels (not including kayaks) would be limited to spending 46 to 60 minutes in the vicinity of SRKWs; and the west side of San Juan Island would be closed to CWW when SRKWs are in the vicinity. Any of these limitations could be implemented on a seasonal basis for 1 to 3 months instead of year-round.
- *Reporting:* In this alternative, CWW operators would only need to report emergency situations (e.g., SRKW health or injury problems, or incidents resulting in “take”) to WDFW Enforcement; no other reporting on SRKW presence, location, and/or on the water behavior would be required.

Alternative 4, or the No Action Alternative, represents current limitations in effect for commercial whale watching operators and protection of SRKW. The No Action Alternative provides a baseline for comparing the potential impacts and mitigation needs associated with any action WDFW takes in implementing rules for commercial whale watching.

- *Days/Hours of CWW and SRKW Viewing:* In this No Action Alternative, there are no existing limits on what seasons, days, and/or hours of the day that commercial whale watching operators may operate, or the hours/times that they may view SRKWs. Currently, the number of vessels around orcas varies during the season, and the peak number of vessels can be much higher than the annual average. In 2019, the highest number of vessels around orcas occurred in July, when there were as many as 26 private recreational vessels, 18 motorized CWW vessels,

and 13 kayaks. Most CWW trips for U.S.-based PWWA members currently occur between 9:00 AM and 6:00 PM, but some operators offer evening or sunset tours that last as late as 9:30 PM.

- *Vessels, Time, and Locations for SRKW Viewing:* In this alternative, there are no limits of number of vessels or mandatory limits on SRKW viewing time, but vessels follow best practices for amount of time. PWWA's best practice is 60 minutes unless there are more than 9 vessels within 1km, in which case best practice is 30 minutes. Be Whale Wise guideline limits viewing time to 30 minutes. This alternative does not have any restricted areas but the Be Whale Wise and PWWA best practices still stand.
- *Sonar/echolocation:* In this alternative, there are no requirements, but vessels may follow PWWA best practices to turn off sonar and echolocation devices when in the vicinity.
- *Reporting:* There are no current requirements for reporting information related to SRKWs to WDFW. Some CWW operators voluntarily report SRKW presence and location to WDFW Enforcement.
- *Kayak-specific rules:* In this alternative, there are no kayak-specific regulations except for the voluntary KERP best practices.

Adaptive Management

Adaptive management is a systematic approach for improving resource management by learning from management outcomes and it is an important cross-cutting component of EIS alternatives. WDFW is committed to developing an adaptive management strategy that will allow the CWWLP to adapt to new information about the status of SRKW and effectiveness of the CWWLP as it becomes available through monitoring and evaluation. The strategy will be in place when the CWWLP is implemented and WDFW will complete an analysis and report to the governor and the Legislature on the effectiveness of and any recommendations for changes to the whale watching rules by November 30, 2022, and every two years thereafter until 2026. Any significant changes to the nature and extent of the CWWLP rules as a result of adaptive management, including any potential changes to components in the final action, would likely be made during this review cycle.

Summary of Impacts

The final rules WDFW implements for the CWWLP—its final action—must balance the need to reduce the daily and cumulative impacts of vessel noise and disturbance on SRKWs and consider the economic viability of commercial whale watching license holders. The following table summarizes the conclusions of the analysis of anticipated environmental impacts and the likelihood of the alternatives meeting WDFW's mandate as they are currently constructed.

The DEIS recommends that WDFW select components from multiple alternatives to both support sustainable commercial whale watching opportunities and reduce the daily and cumulative impacts on commercial whale watching from vessel noise and disturbance.

Table ES-1: Summary of Significant Impacts of Alternatives

| Alternative | Animals (Impacts to SRKWs) | Recreation (Impacts to Recreators and Commercial Whale Watching Opportunities) | Likelihood of Meeting WDFW's Legislative Mandate |
|--------------|--|---|---|
| 1 | Least significant adverse impacts (most benefits for SRKW) due to most restrictive SRKW viewing limitations and broadest area closures | <p>Most significant adverse impacts due to most restrictive day and time limits on CWW operations;</p> <p>Other components are not expected to have a significant impact on CWW opportunities or participant experience</p> | <p>Unlikely as currently constructed;</p> <p>Restrictions on CWW operating days/times would reduce CWW opportunities for recreators the most of any alternative;</p> <p>Alternative 1 has the highest potential to reduce adverse impacts on SRKWs.</p> |
| 2 | Some significant adverse impacts (moderate benefits for SRKW) due to moderate SRKW-viewing limitations and moderate area closures | <p>Some significant adverse impacts due to mid-range day and time limits on CWW operations;</p> <p>Other components are not expected to have a significant impact on CWW opportunities or participant experience</p> | <p>Possibly as currently constructed;</p> <p>Restrictions on CWW operating days/hours would reduce opportunities for recreation, but not as much as Alternative 1;</p> <p>Alternative 2 has less potential to reduce adverse impacts on SRKWs than the restrictions in Alternative 1</p> |
| 3 | More significant adverse impacts (fewest benefits for SRKW) due to least restrictive SRKW-viewing limitations and fewest area closures | <p>Least significant adverse impacts due to least restrictive day and time limits on CWW operations;</p> <p>Other components are not expected to have a significant impact on CWW opportunities or participant experience</p> | <p>Unlikely as currently constructed;</p> <p>Restrictions may or may not sufficiently reduce adverse impacts to SRKWs, especially given uncertainty and similarity of the alternative to no action</p> |
| 4: No Action | Most significant adverse impacts (no benefits for SRKW) due to unrestricted CWW operation and activity | No impacts to CWW opportunities or participant experience | Does not meet RCW requirements to reduce SRKW impacts |

Mitigation Measures

Mitigation measures are actions that can reduce or eliminate adverse environmental impacts associated with all alternatives other than no action. The intended environmental benefit of the mitigation measures is to further decrease the daily and cumulative impacts of vessel noise and disturbance on SRKWs and promote their overall wellbeing, either directly or indirectly. WDFW is considering and may implement the following mitigation measures along with the final action:

- ***The influence of commercial whale watching vessels on recreational boaters:*** There is currently little published empirical evidence of the influence, sentinel, or magnet effect of CWW vessels. However, WDFW could evaluate the extent and ways in which CWW vessels may affect recreational vessel behavior and how this could factor into the CWWLP. For example, if peer-reviewed research indicates that CWW operator presence and/or actions such as using whale warning flags contribute to changes in recreational boater activity that alter vessel noise and disturbance impacts on orcas, WDFW could consider adjusting CWW vessel limits as part of its adaptive management program.
- ***The role of commercial whale watching vessels in monitoring and communicating SRKW status:*** CWW operators spend time in the vicinity of SRKWs and are familiar with their behavior patterns. Operators can contribute to SRKW management and data collection by identifying and reporting health or injury concerns or communicating animal status to researchers. These monitoring and communications activities go beyond the specific reporting requirements that WDFW is considering as part of the DEIS alternatives. Similar to the influence of CWW on recreational vessels, this mitigation measure will be considered as part of WDFW's adaptive management program and evaluated over time.
- ***The use of automated identification system (AIS) on commercial whale watching vessels:*** AIS is a tracking system that uses transceivers to provide information such as vessel identification, position, course, and speed. The use of AIS on CWW vessels could allow increased enforcement and compliance monitoring of CWW vessels as it would inform WDFW Enforcement about vessel density around SRKWs. WDFW is considering the impacts the use of AIS may have on SRKW management and whether specific AIS requirements might be part of the CWWLP. If WDFW established requirements, the spatial patterns in vessel locations and densities could help answer scientific questions and enhance conservation efforts.
- ***SRKW Education:*** Education is essential to promoting compliance with any new regulations and achieving a reduction in vessel impacts to the whales. SRKW and other marine mammal education programs already exist and play an integral role in reducing disturbance from all types of vessels. Two additional education-based mitigation measures that could enhance conservation are: 1) SRKW-viewing qualification program that would require CWW operators to demonstrate knowledge of SRKWs and information needed to comply with CWWLP rules and 2) an SRKW curriculum for members of the public and CWW clientele to increase awareness of SRKWs and how to contribute to their recovery.

Next Steps

Following the publication of the DEIS on September 23, 2020, there will be a 30-day public comment period, during which reviewers have the opportunity to comment on the accuracy and completeness of

the environmental analysis, the methodology used in the analysis, and the need for additional information and/or mitigation measures, so that improvements to the EIS can be made before it is finalized. Comments can be submitted through an online form available on the WDFW SEPA website and the CWWLP Advisory Committee website.

A 2-hour virtual public meeting is scheduled on Monday, October 19, 2020, from 6:00PM to 8:00PM PDT. This meeting is an additional opportunity for members of the public to share comments on the DEIS and WDFW's simultaneous rulemaking process regarding commercial whale watching of SRKWs. Meeting details will be posted online on WDFW's website: <https://wdfw.wa.gov/species-habitats/at-risk/species-recovery/orca/rule-making>.

The final programmatic environmental impact statement (FEIS) on the Commercial Whale Watching Licensing Program will be released in December 2020, which will include WDFW's preferred alternative. The DEIS reader should note the SEPA EIS process parallels (and was precipitated by and meant to inform) Washington's rulemaking process, which requires WDFW to draft and ultimately file final rules with the state's Code Reviser. WDFW's preferred CWWLP alternative will be proposed to the WDFW Commission for action on December 18, 2020. The Commission will decide on a final rule, which will likely become effective 31 days after it is filed with the Code Reviser and published in the Register.



I. Introduction

In spring 2019, the Washington Legislature directed the Washington Department of Fish and Wildlife (WDFW) to establish a license program and rules for commercial whale watching of southern resident killer whales (SRKWs, or Southern Residents) in Puget Sound, the Strait of Juan de Fuca, and Southern Georgia Strait (see Appendix A for the authorizing legislation, RCW 77.65.620).

The SRKWs are the only known resident population of orcas in the United States. They spend spring and summer months primarily in the inland marine waters of Washington and British Columbia and spend winter months primarily in the coastal waters of the Pacific Ocean between California and British Columbia. SRKWs are listed as endangered under federal and Washington State law, and vessel disturbance and noise have been identified as stressors that threaten their viability in Washington waters.

Purpose and Need for a Commercial Whale Watching License Program

The purpose of creating a new licensing program and establishing regulations for commercial whale watching license holders and vessel behavior is to ensure sustainable commercial whale watching practices and reduce the daily and cumulative impacts of vessel noise and disturbance on SRKWs so they can effectively forage, rest, and socialize. The Commercial Whale Watching Licensing Program (CWWLP, or licensing program) will help protect the Endangered Species Act-listed SRKWs from disturbance, risk, and noise from vessel traffic—one of five threats identified by the Orca Task Force in 2018-19, along with lack of prey, toxic contaminants, human population growth, and climate change.

In developing this program, WDFW is also considering potential impacts on two specific recreational aspects of commercial whale watching: 1) recreators, i.e., customers who choose to participate in commercial whale watching and 2) the economic viability of commercial whale watching license holders. The recreators aspect is explored in this environmental impact statement and the economic viability of commercial whale watching license holders is analyzed in depth in the Small Business Economic Impact Statement (SBEIS), which is being developed at the same time as the EIS. The SBEIS addresses specific

questions, including “In what ways could the proposed rule options affect CWW license holders?” and will be publicly available on the WDFW website.

CWWLP Advisory Committee

WDFW is developing the CWWLP rules with guidance from the **CWWLP Advisory Committee**, a group that includes stakeholders from the whale watching industry and environmental non-governmental organizations. WDFW convened the Advisory Committee in November 2019. From January to July 2020, the Advisory Committee explored alternatives and worked towards consensus on a proposal for licensing program rules. Two additional groups support WDFW and the work of the Advisory Committee (see Appendix B for more information about all three groups):¹

- **An Intergovernmental Coordination Group**, which includes state, tribal, federal, and local governmental representatives that is providing information about the implementation feasibility of options explored by the Advisory Committee; and
- **An independent Washington State Academy of Sciences Science Panel** that is reviewing the current body of best available science regarding impacts to SRKWs from small vessels and commercial whale watching due to disturbance and noise.

While the CWWLP Advisory Committee did not reach consensus on a single set of recommendations for CWWLP rules, the members coalesced around two proposals for WDFW to consider (see the complete proposals in Appendix C). Components from the two Advisory Committee proposals are included in the draft programmatic environmental impact statement (DEIS) alternatives. WDFW will consider these proposals as it develops its preferred alternative that it will advance to the Fish and Wildlife Commission, in accordance with Washington’s rulemaking process, for a final action decision in December 2020.

SEPA Process Overview

The State Environmental Policy Act (SEPA) environmental impact statement (EIS) process provides opportunities for other agencies, stakeholders, tribal governments, and the public to participate in analyzing information and alternatives for any action that may have significant environmental impacts. This process, as detailed in Chapter 197-11 WAC, will highlight potential environmental consequences of WDFW’s actions and identify mitigation opportunities WDFW can consider when making decisions. The SEPA EIS process ensures public input into policy development and includes:

- Scoping;
- Preparing a draft environmental impact statement (DEIS), which analyzes the probable impacts of a proposal and reasonable alternatives;
- Issuing a DEIS for review and public comment;
- Preparing a final environmental impact statement (FEIS), which includes analyzing and responding to comments received on the DEIS;
- Issuing a FEIS; and
- Using the FEIS in decision-making.

¹ Commercial Whale Watching Licensing Program Advisory Committee, “CWWLP Advisory Committee Draft Charter and Rules.”

Non-project Action

The CWWLP is considered a “non-project action” under SEPA (Chapter 43.21C RCW and Chapter 197-11WAC). Non-project actions include the adoption of plans, policies, programs or regulations containing standards that will guide future actions. The probable significant adverse environmental impacts analyzed in a non-project, or programmatic, EIS are those impacts foreseeable at this stage, before specific project actions are planned. If more specific actions are needed in the future, management decisions will be guided by the policies developed during this process.

Scoping

Scoping initiates public involvement in the SEPA EIS process. Its three purposes are to:

- Narrow the focus of the EIS to significant environmental issues;
- Eliminate insignificant impact issues or those not directly related to the proposal; and
- Help identify reasonable alternatives, consistent with the purpose and need of the proposed action, to be analyzed in the EIS.

The scoping process alerts the public, the project proponent, and the lead agency to areas of concern and potential controversy early in the process. Here, WDFW is both the project proponent and the lead agency. Scoping for the CWWLP rules was initiated in May 2020 and concluded on June 8, 2020. Key steps of the scoping process included:

- A scoping notice was sent to approximately 150 individuals and interested groups in May 2020;
- A virtual scoping public meeting was held on May 28, 2020; and
- A scoping public comment period occurred from May 18, 2020 to June 8, 2020, during which 165 people commented. A summary of the comments is available on WDFW’s website at https://wdfw.wa.gov/sites/default/files/2020-07/final_cww_eis_scoping_report_070220.pdf.

During the 22-day scoping period, 165 people provided comments through an online web form and on a two-hour virtual public meeting. From the online web form, 152 comments were submitted. The most common themes within the EIS scope were number of boats (mentioned in 37% of comments) and the sentinel role of the commercial whale watchers (mentioned in 12% of comments). The following themes represented 10% or less of the comments, from most common to least common: distance from whales, time with whales, use of best available science, technology to reduce vessel noise, access zones, education and communication, seasonal viewing, general whale disturbance, and AIS. During the two-hour virtual public meeting, thirteen people offered comments on the record. The most common themes within the EIS scope were number of boats (mentioned in 33% of comments), sentinel role (mentioned in 33% of comments), and access zones (mentioned in 17% of comments). The following themes represented 8% or less of the comments: time with whales, and education and communication.

Approximately half of the total public comments fell outside of the scope of this environmental review, as they were not related to the licensing program. “Outside the scope of the EIS” was defined as a comment that did not provide a perspective or information that can be incorporated into an EIS alternative as outlined by the Legislature in RCW 77.65.620. The themes that fell outside the scope of the EIS were abolish commercial whale watching, enforcement, fee structures, SRKW access to prey, and working with other groups.

Next Steps

After issuing the DEIS, WDFW will hold a virtual public meeting that will allow the public to ask questions and provide comments on the DEIS. The virtual public meeting is scheduled for Monday, October 19, from 6:00 PM to 8:00 PM, PDT; Zoom meeting information will be posted online on WDFW's website: <https://wdfw.wa.gov/species-habitats/at-risk/species-recovery/orca/rule-making>. It is anticipated that interested individuals and stakeholders will attend this public meeting and provide comments on the DEIS to WDFW. Those comments will be reviewed and responded to in the FEIS, which will be published in January 2021.

Life History, Habitat, and Conservation Status of SRKWs

SRKW Life History and Biology

SRKWs are one of three genetically distinct ecotypes of orcas that live in Washington: Resident, Transient (or Bigg's), and Offshore. Each ecotype has different diet, morphology, and acoustic and foraging behaviors.² SRKWs live in three pods: J, K, and L. These pods contain several matriline, which are composed of an older female, her daughters and sons, and the daughters' offspring. Pods typically contain several matriline that are closely related along with their descendants of both sexes with an average of 18 individuals per matriline.³ These pods can break into separate matriline at any time; they also may temporarily form large aggregations with multiple matriline and pods if there is a high abundance of prey.⁴

SRKWs generally are long-lived mammals with a life expectancy ranging from 50 to 80 years depending on sex, with females generally living longer than males. SRKW females can live up to 80 years and typically give birth to their first calf between 12 and 18 years.⁵ SRKW males typically attain sexual maturity between 11.5 and 17.5 years of age and can live up to 60 years.⁶ Each SRKW has unique natural markings on their dorsal fin and the grey "saddle patch" at the base of the fin, allowing experts to track age, activity and reproductive status of individuals.⁷

SRKWs eat fish and have a strong preference for Chinook salmon because of their large size and rich lipid content.⁸ They use echolocation to locate their prey.⁹

² Ford and Ellis, "You Are What You Eat," 76.

³ Ibid, 83.

⁴ Ibid, 83.

⁵ Biggs et al., "Social organization," 385.

⁶ Ibid, 385.

⁷ Ford and Ellis, "You Are What You Eat," 77.

⁸ Ford et al., "Dietary specialization," 1465.

⁹ Au et al., "Echolocation signals," 901.

SRKW Habitat and Range

The three SRKW pods range from central southeast Alaska to central California, with visits to the Salish Sea (inland marine waters between Washington, Vancouver Island, and British Columbia that include the Strait of Juan de Fuca, Puget Sound, Georgia Strait, and the San Juan Islands; see Figure 1) and the outer coasts of Washington and southern Vancouver Island. Each pod has different habitat patterns within this range.¹⁰ Pods K and L use a wider portion of the range, whereas J pod is more focused in the Salish Sea, and in the winter inhabit the area north of the Strait of Georgia. In recent years, the number of SRKW observations has been lower-than-typical in a historical perspective.¹¹ The Pacific Whale Watch Association (PWWA) has recorded that the K-and L-Pod have been sighted in the Salish Sea on average less than 10% of each year from 2017-19. During this three-year period, PWWA observed that SRKWs were seen between 20 and 113 days per year and varied between pods.¹² These sightings were typically on the west side of San Juan Island. As prey availability fluctuates, SRKWs' foraging locations and ranges are expected to change.¹³ Currently, Haro Strait, southwest of San Juan Island, and the Strait of Juan de Fuca are key foraging locations.¹⁴



Figure 1: Map of Salish Sea (courtesy of Canadian Geographic)

SRKW Conservation Status and Threats

Since 1974, an annual census has monitored SRKW appearance and populations in Washington and Canada. From 1996 to 2001, the population declined 20%; from 97 to 78 individuals.¹⁵ This prompted SRKWs to be listed as an endangered species in Washington State in 2004 and listed as endangered under the federal Endangered Species Act (ESA) in 2005.¹⁶ SRKWs face many threats: lack of their primary food source (Chinook salmon), disturbance from vessel traffic and associated noise, toxic contaminants, climate change, and the effects of an increasing human population across the region.¹⁷

¹⁰ Hauser et al., "Summer distribution," 302.

¹¹ Olson et al., "Sightings of southern resident killer whales," 116.

¹² Pacific Whale Watch Association, "Southern Resident Killer Whale Recovery," 2.

¹³ Washington State Academy of Sciences, "Q&A," 2.

¹⁴ Noren and Hauser, "Surface-Based Observations," 169.

¹⁵ Krahn et al., "Status Review," xi.

¹⁶ Purce and Solien, "Southern Resident Orca Task Force," 15.

¹⁷ Ibid, 15.

Overview of Whale Watching in Washington

Whale watching is an important part of the tourism economy in Washington, particularly around the San Juan Islands. Whale watching can be done either through boat-based tours or from land-based viewing points within San Juan County. Approximately 70,500 people participate in boat-based whale watching and 230,000 people watch whales on land each year in San Juan County, with a total of over 300,000 participants.¹⁸ According to a 2019 report by Earth Economics that examined the economic contribution of whale watching in San Juan County, whale watching supports over 1,800 jobs in both direct boat operations and naturalist positions as well as service-related jobs such as restaurants, bars, and hotels, and generates more than \$12 million in state and local tax revenue.¹⁹

A variety of organizations conduct boat-based commercial whale watching tours from several ports throughout the Salish Sea. The peak season for orca watching occurs from June through August, although whale watching tours operate year round in different parts of the state.²⁰ The industry is primarily comprised of motorized whale watching, motorized or sailing vessel excursions whose primary purpose is to view whales; and kayak tours, which include single day to multi-day excursions for sightseeing, wildlife viewing, and exploration.²¹ Whale watching companies range in size (e.g., number of vessels in fleet, number of employees, etc.), and many are part of the PWWA. PWWA is comprised of 31 members, 17 of which are based in Washington State.²²

The Soundwatch Boater Education Program of the Whale Museum annually observes, tracks, and educates vessel operators (both commercial and private recreational) on proper SRKW-viewing protocols from May through September (since 1998). Soundwatch produces an annual report with metrics such as number and types of vessels around whales, time with orcas, and number of incidents during those five months. In 2019, there were an average of about five commercial whale watching vessels, two kayaks, and about three recreational vessels within one half nautical mile of orcas (See Figure 2). The majority of vessels of all types view orcas between 10:00 AM and 5:00 PM, and in 2019 the peak numbers of vessels around orcas occurred during the month of July (See Figure 3). Most CWW trips for U.S.-based PWWA members currently occur between 9:00 AM and 6:00 PM, but some operators offer evening or sunset tours that last as late as 9:30 PM.²³

¹⁸ Van Deren et al., "The Whales in Our Waters," 9.

¹⁹ Ibid, 22.

²⁰ Taylor Shedd, et al. "2019 Soundwatch." 27.

²¹ Kassakian, Ebersole, and Flight, "Economic Viability," 11.

²² Shedd, et al. "2019 Soundwatch," 10.

²³ Kassakian, Ebersole, and Flight, "Economic Viability," 21.

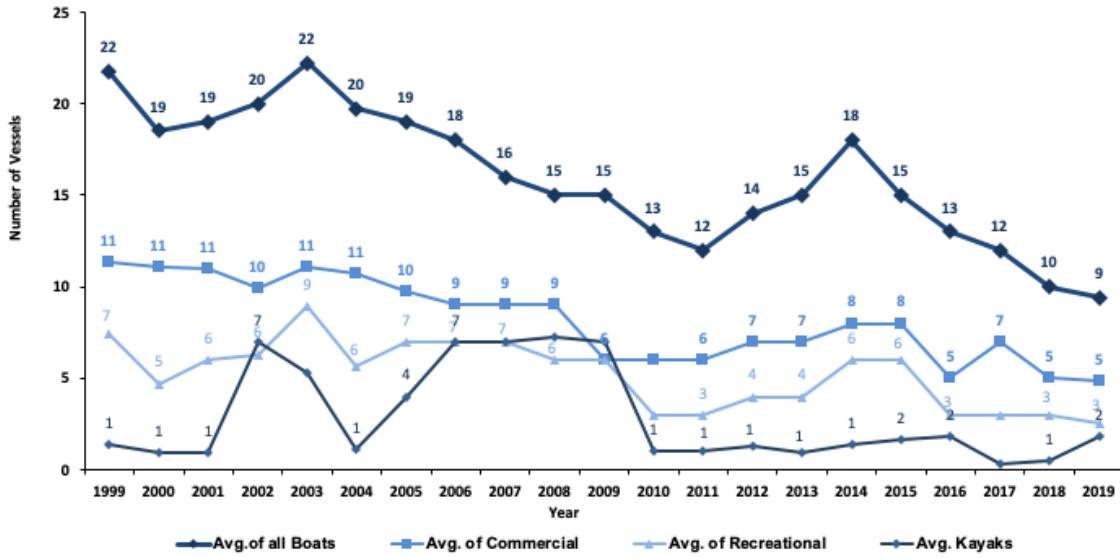


Figure 2: Average Number of Vessels by Type Within 1/2 Mile of Orcas in Boundary Waters (1999-2019)
 Source: The Whale Museum, Soundwatch Program

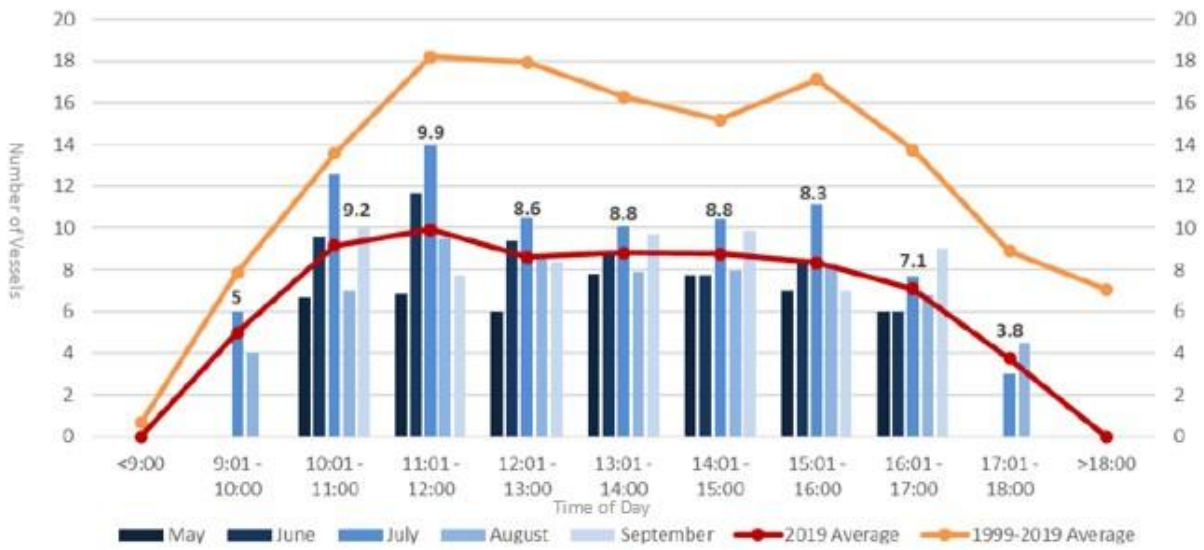


Figure 3: Average Number of Vessels Around Orcas by Time of Day, Average for 2019 and 20-Year Average (1999-2019)
 Source: The Whale Museum, Soundwatch Program



II. Alternatives

Description of DEIS Alternatives

The DEIS evaluates four reasonable alternatives by examining probable significant adverse environmental impact associated with them. A “reasonable” alternative meets the demands of the legislative mandate (RCW 77.65.620), reduces environmental impacts, and is within WDFW’s authority.²⁴ The final rules WDFW implements for the CWWLP, or its final action, must balance the need to reduce the daily and cumulative impacts of vessel noise and disturbance on SRKWs and consider the economic viability of commercial whale watching license holders.

The alternatives represent a range of options that will allow WDFW to evaluate and compare the merits of different actions. Each alternative is comprised of twelve components of the CWWLP. The difference between the alternatives is in how the components are expressed, with Alternative 1 representing the most restrictive expression of each component and Alternative 4 representing the least restrictive (or status quo) expression of each component.

The final action chosen by WDFW may not be identical to any single alternative; after reviewing the results of the EIS, WDFW may choose a hybrid that combines more and less restrictive expressions

DEIS ALTERNATIVE COMPONENTS

- *Number of CWW vessels in the vicinity of SRKWs*
- *Duration of time CWW vessels may spend in the vicinity of SRKWs*
- *SRKW viewing hours*
- *Hours of CWW operation*
- *SRKW viewing days*
- *Days of CWW operation*
- *SRKW viewing seasons*
- *CWW operating seasons*
- *Geographically restricted access areas*
- *Use of sonar or echolocation devices*
- *Reporting requirements*
- *Kayak-specific regulations*

²⁴ Washington State Department of Ecology, “State Environmental Policy Act Handbook,” 35.

of the components (instead of a uniform expression of restrictiveness across all components) to best meet its legislative mandate. In addition, for components that are expressed in ranges, WDFW may select specific values rather than ranges for the final action (e.g., WDFW might choose a specific number of vessels that may be in the vicinity [defined in the DEIS as at or within one-half nautical mile] of SRKWs, rather than using a range of vessels).

WDFW is not currently considering a complete moratorium, or temporary ban, on commercial whale watching activity. However, several Alternative 1 components include zero in their range. For example, under Alternative 1, WDFW has an option to limit CWW operations to zero days of the week. Component ranges that include zero are meant to provide maximum flexibility when designing regulations and will be considered in combination with other factors, such as seasonal variation.

The DEIS assumes the following definitions of terms that describe the components and alternatives:

- A **vessel** is a motorized boat. However, it is possible that a kayak or a group of kayaks affiliated with a commercial whale watching tour could be considered a vessel as well. In the DEIS we distinguish between CWW vessels (vessels used for CWW tours) and private recreational vessels (e.g., research vessels or vessels owned and operated by members of the public or other institutions).
- A **group of SRKWs** is one or more individuals. Individual SRKWs are considered in the same group when they are separated by one-half nautical mile or less.
- **Vicinity** means at or within one-half nautical mile. The DEIS alternatives consider vicinity in the context of individual orcas, rather than examining vicinity in relation to groups or pods of orcas.

Alternative 1

Alternative 1 represents the most conservative expression of each program component that WDFW could consider in meeting its mandate. It would reduce SRKWs' exposure to CWW vessel noise and disturbance the most out of all the alternatives and would likely result in the most benefits to SRKWs. It would place the most extreme restrictions on CWW operations (especially at the low end of the ranges) and would likely result in the most reductions in CWW opportunities. Alternative 1 contains the following component variations:

- Alternative 1 places the tightest limitations on the days and hours for commercial whale watching and viewing of SRKWs. In this alternative, all CWW operations are restricted seasonally for a period of 8 to 11 months by limiting all CWW operations to a 0- to 4-hour per day window and to 0 to 2 days per week. During the other 2 to 4 months of the year, SRKW viewing only (not CWW operations overall) would be limited to a 0- to 4-hour per day window and to 0 to 2 days per week.
- Alternative 1 also places the most limits on the number of vessels, duration, and geographic areas for viewing SRKWs. In this alternative, 0 to 2 CWW vessels would be allowed to view SRKWs at a time; CWW vessels (not including kayaks) would be limited to spending 0 to 15 minutes in the vicinity of SRKWs; and multiple geographic areas would be closed to CWW (except for safety reasons) when SRKWs are in the vicinity. The closed geographic areas would include the west side of San Juan Island (the current voluntary no-go zone that SRKWs

frequently use for foraging), and other agreed upon geographic areas. Any of these limitations on SRKW viewing could be implemented on a seasonal basis for 8 to 11 months or year-round.

- Alternative 1 is the only alternative that includes requirements related to sonar and echolocation devices because it is a binary option (devices can be on or off). Sonar and echolocation devices allow CWW vessels to more easily locate whales but they emit noise into the water column that can interfere with the SRKWs' echolocation.²⁵ In this alternative, CWW vessels that have sonar or echolocation devices would be required to turn those devices off, to standby, or tune them to 200 kHz mode when in the vicinity of SRKWs, unless a specific safety concern requires continued use of sonar or echolocation.
- To assist with WDFW's implementation of the CWWLP, CWW operators would be required to report on the presence and location of SRKW to WDFW Enforcement and/or provide documentation of their observations of SRKWs, such as logs of SRKW sightings, viewing, and other on-the-water observations.
- In addition to meeting the requirements that apply to all CWW operators, kayak tours also would be required to adhere to some or all of the voluntary Kayak Education Leadership Program (KELP) best practices, as well as comply with other restrictions WDFW might impose such as requiring kayak tours to remain within 100 yards from shore on the west side of San Juan Island (as long as it is safe) and/or requiring kayak tours to stay on shore if SRKWs are in the vicinity while kayaks are launching. The KELP best practices, as documented in the 2011 Kayakers' Code of Conduct, are voluntary guidelines for kayakers to assist in adhering to existing laws to protect orcas and other wildlife.²⁶

Alternative 2

Alternative 2 is a mid-range alternative WDFW can consider meeting its mandate. It includes moderate limitations on commercial whale watching to reduce potential noise and disturbance impacts on SRKWs. Compared to Alternative 1, Alternative 2 will likely have slightly less benefit for SRKWs and less restriction on CWW.

- Under Alternative 2, WDFW would place mid-range limitations on the days and hours for commercial whale watching and viewing SRKWs. WDFW would restrict CWW operations seasonally for a period of 4 to 7 months by limiting CWW operations to a 4- to 8-hour per day window and to 3 to 5 days per week. WDFW also would limit the days and times when CWW operators could view SRKWs to the same periods; that is, SRKW viewing would be allowed 3 to 5 days a week for 4 to 8 hours per day. WDFW may decide to implement the SRKW-viewing limitations either year-round or for 4 to 7 months.
- WDFW could place limits on the number of vessels, duration, and geographic areas for viewing SRKWs that fall between those of Alternatives 1 and 3. Up to 3 to 4 CWW vessels would be allowed to view SRKWs at a time, CWW vessels (not including kayaks) would be limited to spending 16 to 45 minutes in the vicinity of SRKWs, and multiple geographic areas would be closed to CWW (except for safety reasons) when SRKWs are in the vicinity. The closed areas would include the west side of San Juan Island and at least one other area (e.g., SRKW foraging

²⁵ Washington State Academy of Sciences, "Review of Proposed Rules," 4.

²⁶ Whale Museum, "Responsible Kayaker Code."

areas). WDFW may implement any of these limitations on SRKW viewing for 4 to 7 months instead of year-round.

- The reporting requirements in Alternative 2 apply in more limited conditions than in Alternative 1. Under Alternative 2, CWW operators would need to report SRKW locations to WDFW Enforcement *when observing the presence of recreational vessels with SRKWs* (e.g., when 1 or more recreational boats are in the vicinity or only when larger groups of recreational boats are in the vicinity).
- Along with requirements that apply to all CWW operators, kayak tours would need to adhere to some, or all, of the voluntary KELP best practices outlined in the Kayaker Code of Conduct.²⁷

Alternative 3

Alternative 3 is a less restrictive set of limitations on commercial whale watching WDFW could consider in meeting its mandate for reducing potential noise and disturbance impacts to SRKWs, but it includes more restrictions on commercial whale watching than the status quo. This alternative contains the following combination of components:

- Under Alternative 3, WDFW would place less restrictive limitations on the days and hours for commercial whale watching than Alternatives 1 and 2, but more than under the No Action Alternative. WDFW would restrict CWW operations seasonally for a period of 1 to 3 months by limiting CWW operations to 6 days per week and operating hours to the period from 1 to 2 hours after sunrise to 1 to 2 hours before sunset. WDFW would also restrict when CWW operators could view SRKWs to similar days per week and times of the day as for CWW operations. WDFW may decide to implement the SRKW viewing limitations either year-round or for 1 to 3 months in this alternative.
- WDFW could place less restrictive limitations on the number of vessels, duration, and geographic areas for viewing SRKWs. Five to 10 CWW vessels would be allowed to view SRKWs at a time, CWW vessels (not including kayaks) would be limited to spending 46 to 60 minutes in the vicinity of SRKWs, and the west side of San Juan Island would be closed to CWW when SRKWs are in the vicinity. WDFW may implement any of these limitations on SRKW viewing for 1 to 3 months instead of year-round.
- Under Alternative 3, CWW operators would need to report emergency situations (e.g., SRKW health or injury problems) to WDFW Enforcement only; no other reporting on SRKW presence, location, and/or on the water behavior would be required.

Alternative 4: No Action (Status Quo)

Alternative 4, or the No Action Alternative, represents current limitations in effect for commercial whale watching operators and protection of SRKW; taken as a whole, Alternative 4 does not allow WDFW to meet its mandate. For some elements, the No Action Alternative also includes best practices outlined by PWVA, Be Whale Wise, and the Whale Museum's Soundwatch Boater Education Program and KELP kayak guidelines.^{28,29,30} The No Action Alternative provides a baseline for comparing the potential

²⁷ Ibid.

²⁸ Pacific Whale Watch Association, "PWVA Voluntary Guidelines."

²⁹ Be Whale Wise, "Marine Wildlife Guidelines."

³⁰ Whale Museum. "Soundwatch Boater Education Program."

impacts and mitigation needs associated with any action WDFW takes in implementing rules for commercial whale watching. Under this alternative, the following conditions continue to apply:

- There are no existing limits on what seasons, days, and/or hours of the day that commercial whale watching operators may operate, or the hours/times that they may view SRKWs.
- There are no mandatory limits on SRKW viewing time, but there are two different existing voluntary guidelines for limiting whale viewing time:
 - The PWWA best practice is for vessels to limit their time in the vicinity (defined as 1 km or 0.65 mile) of a group of whales to 60 minutes. However, in instances when there are more than 9 PWWA vessels (this includes most of the commercial whale watching operators in Washington) in the vicinity of whales, the best practice is for vessels to limit viewing time to 30 minutes.
 - The Be Whale Wise guidelines recommend limiting viewing time (for whales, porpoises, dolphins, seals, sea lions, any animal hauled out, and nesting birds) to 30 minutes.
- There are no existing limitations on the number of CWW vessels that may view SRKWs at a time, but, as noted above, the PWWA recommends shorter viewing times when there are more than 9 CWW vessels in the vicinity of whales.
- The west side of San Juan Island, a common SRKW foraging area, is a voluntary no-go zone for motorized CWW vessels in PWWA and Soundwatch Boater Education educational materials (see Figure 5: Map of Voluntary No-Go Zone) that is meant to reduce foraging disturbance from vessels. In this zone, motorized CWW operators should remain at least one-quarter mile off the main shoreline of the west side of the island (from Mitchell Point to Cattle Point) as well as stay at least one-half mile from the light beacon at Lime Kiln State Park when SRKWs are in the vicinity. No other voluntary or mandatory no-go zones for CWW are in place in Washington state.
- PWWA guidelines recommend that sonar, depth sounders, fish finders, and other underwater transducers be shut off when vessels are in the vicinity of whales.
- There are no current requirements for reporting information related to SRKWs to WDFW. Some CWW operators voluntarily report SRKW presence and location to WDFW Enforcement.
- There are no separate existing requirements for kayak tour operators. The KELP Kayaker Code of Conduct voluntary best practices are designed to support responsible paddling practicing, including



Figure 4: Map of Voluntary No-Go Zone
(Courtesy of San Juan Journal)

ensuring compliance with the 2011 federal vessel regulations related to maintaining at least a 200-yard distance from killer whales and avoiding being within 400 yards of the path of killer whales.

Table 1: Summary of EIS Alternatives and Components

| Alternative Component | | Component Description | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4: No Action |
|-----------------------|------------------------|--|--|--|--|--|
| 1 | Number of vessels | The number of CWW vessels (including kayaks) that can view SRKWs at one time | 0 to 2 at a time | 3 to 4 at a time | 5 to 10 at a time | Unlimited |
| 2 | Duration | The amount of time CWW vessels (not including kayaks) can spend in the vicinity of SRKWs | 0 to 15 minutes in the vicinity of SRKWs | 16 to 45 minutes in the vicinity of SRKWs (This may or may not include provisions about seeking SRKWs to view them.) | 46 to 60 minutes in the vicinity of SRKWs (This may or may not include provisions about seeking SRKWs to view them.) | Unlimited, but PWWA best practice is 60 minutes unless there are 9+ PWWA vessels within 1km, in which case best practice is 30 minutes; Be Whale Wise guideline is to limit viewing time to 30 minutes |
| 3 | SRKW viewing hours | The number of hours CWW vessels (including kayaks) may view SRKWs | Commercial SRKW viewing limited to a 0- to 4-hour daily window | Commercial SRKW viewing limited to a 4- to 8-hour daily window | Commercial SRKW viewing limited to window between 1 to 2 hours after sunrise to 1 to 2 hours before sunset | Unlimited |
| 4 | Hours of CWW operation | The number of hours CWW vessels (including kayaks) may operate | CWW operation limited to a 0- to 4-hour daily window | CWW operation limited to a 4- to 8-hour daily window | CWW operation limited to window between 1 to 2 hours after sunrise to 1 to 2 hours before sunset | Unlimited |
| 5 | SRKW viewing days | The number of days CWW vessels (including kayaks) may view SRKWs | Restrict SRKW viewing to 0 to 2 days per week | Restrict SRKW viewing to 3-5 days per week | Restrict SRKW viewing to 6 days per week | Unlimited |
| 6 | Days of CWW operation | The number of days CWW vessels (including kayaks) may operate | Restrict CWW operation to 0 to 2 days per week | Restrict CWW operation to 3 to 5 days per week | Restrict CWW operation to 6 days per week | Unlimited |

| Alternative Component | Component Description | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4: No Action | |
|-----------------------|--------------------------------------|--|---|--|--|---|
| 7 | SRKW viewing seasons | Specific seasons or timeframes when CWW operations (including kayaks) have additional restrictions on SRKW viewing | Additional restrictions on SRKW viewing (e.g., hours and/or days) for an 8- to 12-month window | Additional restrictions on SRKW viewing (e.g., hours and/or days) for a 4- to 7-month window | Some additional restrictions on SRKW viewing in a 1- to 3-month annual window | Unlimited |
| 8 | CWW operating seasons | Specific seasons or timeframes when CWW operations (including kayaks) have additional operating restrictions | Additional restrictions on CWW (e.g., hours and/or days of CWW operation) for an 8- to 11-month window | Additional restrictions on CWW (e.g., days and/or hours of CWW operation) for a 4- to 7-month window | Additional restrictions on CWW (e.g., days and/or hours of CWW operation) for a 1- to 3-month window | Unlimited |
| 9 | Geographically restricted access | Establish specific areas in which CWW vessels (including kayaks) can and cannot operate | Close multiple areas (e.g., SRKW foraging habitat, including west side of San Juan Island) to CWW, including more areas than in Alternatives 2 and 3 | Close multiple areas (e.g., SRKW foraging habitat, including west side of San Juan Island) to CWW | Codify the existing voluntary west side of San Juan Island no-go zone | Unlimited, but Be Whale Wise guidelines recommend the no-go zone, and PWWA best practice restricts the west side of San Juan Island |
| 10 | Use of sonar or echolocation devices | The use of sonar or echolocation on CWW vessels (not including kayaks) when operating tours | Require all CWW vessels to turn off (put in standby) sonar or echolocation devices or switch to 200 kHz mode when in the vicinity of SRKWs (when it is safe to do so) | N/A; same as No Action Alternative | N/A; same as No Action Alternative | No existing requirements, but PWWA best practice to turn off sonar and echolocation devices when in the vicinity |

| Alternative Component | Component Description | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4: No Action |
|-------------------------------|--|--|--|--|---|
| 11 Reporting | CWW tour operators (including kayak tour guides) report SRKW presence and location to WDFW Enforcement and/or SoundWatch | Require CWW operators to report SRKW presence and location and/or provide documentation (e.g. logs of SRKW sightings, viewing, and other on-the-water observations) | Require CWW operators to report SRKW location when observing recreational presence with SRKW (e.g., when 1 or more recreational boats are in the vicinity, or only when larger groups of recreational boats are in the vicinity) | Require CWW operators to report emergency situations (e.g., SRKW health or injury problems; incidents resulting in “take”) | No reporting requirements for CWW operators; some CWW operators voluntarily report SRKW presence and location |
| 12 Kayak-specific regulations | Regulations that are specific to kayak tours and do not apply to other CWW operations (separate from components 1, 3, 4, 5, 6, 7, 8, 10, and 11 that already include kayaks) | Codify some or all of the Kayak Education and Leadership Program (KELP) best practices and add extra restrictions (e.g., require kayak tours on the west side of San Juan Island to remain 100 yards from shore [as long as it is safe] and/or prohibit kayak tours from launching if SRKWs are within 0.5 NM) | Codify some or all of the Kayak Education and Leadership Program (KELP) best practices | N/A; same as No Action Alternative | No kayak-specific regulations; KELP best practices are voluntary |

Notes:

- *Component 12, kayak-specific regulations, includes additional regulations for kayaks that are not already captured in other components.*
- *Each alternative includes an adaptive management cross-cutting component which is discussed below.*
- *Restrictions on CWW operating hours and days (components 4 and 6) would likely apply in the context of seasonal restrictions (component 8) – not year-round.*

Adaptive Management

Adaptive management is an important cross-cutting component of EIS alternatives. WDFW is committed to developing an adaptive management strategy that will allow the CWWLP to adapt to new information about the status of SRKW and effectiveness of the CWWLP as it becomes available through monitoring and evaluation.

Adaptive management is a systematic approach for improving resource management by learning from management outcomes. A common challenge in natural resources management involves the need to take action even in the face of uncertainties that could significantly influence management performance. An adaptive approach provides a framework for making good decisions in the face of critical uncertainties and a formal process for improving management over time in response to data and information on management outcomes.³¹

The Washington State Academy of Sciences (WSAS) independent science panel encourages the use of adaptive management and identified several scenarios in which the CWWLP could benefit from an adaptive management approach as well as potential tradeoffs among alternative strategies that could be revealed during program implementation. For example, if new research emerges that clarifies understanding of vessel impacts on SRKWs, WDFW might adjust the regulations to be more or less restrictive to align with the new information. Similarly, if monitoring data shows positive or negative responses in the SRKW population or presence in the Salish Sea, WDFW might introduce new measures or modify the existing rules.³² Thus, with an adaptive management strategy, WDFW could adjust the CWWLP to better meet its purpose.

The WSAS independent science panel provides information and recommendations for adaptive management strategies and metrics WDFW could include in its plan. In general, an adaptive management plan needs to include all relevant factors that could change and/or be manipulated based on a set of testable hypotheses. Adaptive management requires monitoring what is being managed (SRKW-vessel interactions), the response (such as SRKW population and presence in the Salish Sea), and other interacting and cumulative factors.³³ The WSAS suggests several adaptive management strategies WDFW could consider, including use of a quota system to regulate the density of CWW vessels around SRKWs; issuance of special protections for particularly vulnerable orcas; or implementation of no-go or slow-go zones.³⁴

Adaptive management metrics are most useful when they are simple, clear, and associated with a specific assessable goal. Ideally, the SRKW population would steadily increase in alignment with federal and state recovery goals and objectives; however, any increases are likely to be the result of many variables including the broader, cumulative efforts to protect SRKW.³⁵ There are currently no reliable indicators (or metrics) for short-term adaptive management available, and it will be difficult to connect population growth or decline to the CWW rules given the variety of stressors affecting SRKWs.³⁶ In addition, SRKW population responses are unlikely to be observable in the near-term. Therefore, SRKW

³¹ US Department of the Interior, "What is Adaptive Management?"

³² Washington State Academy of Sciences, "Q&A," 10.

³³ Washington State Academy of Sciences, "Summary of Key Research Findings," 14.

³⁴ Washington State Academy of Sciences, "Summary of Key Research Findings," 14-18.

³⁵ Federal recovery goals, objectives, and strategies are described in National Marine Fisheries Service, "Federal Recovery Plan," State SRKW recovery goals and plans are described in Purce and Solien, "Southern Resident Orca Task Force."

³⁶ Washington State Academy of Sciences, "Final Report," 5 &

behavioral and physiological changes are the best short-term measures to help WDFW adaptively manage the CWW rules. Examples of specific metrics include: SRKW habitat use, foraging time, stress and hormone levels, and body condition.³⁷

WDFW plans to have an adaptive management strategy in place when the rules are implemented. An analysis and report will be shared with the governor and the Legislature on the effectiveness of and any recommendations for changes to the whale watching rules by November 30, 2022, and every two years thereafter until 2026. Any significant changes to the nature and extent of the CWWLP rules as a result of adaptive management, including any potential changes to components in the final action, would likely be made during this review cycle.

Formation and Implementation of the Final Action, Including Variable, or Nested, Components

As stated above, the final action chosen by WDFW may not be identical to any single alternative; it may be a hybrid that combines different components from several alternatives. The twelve components under consideration could be combined, or nested. For example, WDFW may choose a “Somewhat Restrictive” option for one component, but a “More Restrictive,” “Less Restrictive,” or “No Action” option for another component.

Components could also be variable under differing conditions. For example:

- The number of CWW vessels permitted in the vicinity of SRKWs could differ by season;
- The number of CWW vessels permitted in the vicinity of SRKWs could differ based on geographic area; or
- CWW hours of operation could differ seasonally.

Combining components will allow WDFW to implement a nuanced licensing program that increases the effectiveness of rules for commercial whale watching in terms of reducing daily and cumulative impacts on SRKWs (thus increasing conservation benefits) while reducing impacts on small businesses. For example, the number of CWW vessels that can view SRKWs at one time could be limited differently based on season, so that CWW restrictions apply when they would most benefit SRKWs. In this scenario, vessels might be more limited in the spring and less limited in the winter. This scenario benefits SRKWs more than a blanket number of vessels that applies year-round because SRKWs would experience less disturbance during critical foraging time in the spring than during seasons of more robust health or when SRKWs are typically outside of Washington state.

WDFW could use multiple management techniques to implement combinations of components to further take advantage of the conservation and operational flexibility benefits. An example that could reduce SRKWs exposure to vessel noise and disturbance might entail WDFW holding a permit drawing in which a certain number of license holders are permitted to view SRKWs on any given day or time frame. Another example that could help allocate SRKW-viewing privileges among CWW operators might entail WDFW allotting a certain number of SRKW viewings per year or season to license holders.

³⁷ Washington State Academy of Sciences, “Q&A,” 11.

Potential Rulemaking Components Considered, but Not Analyzed

The DEIS alternatives do not include components raised by the CWWLP Advisory Committee or in scoping that are not feasible at this time, such as placing a year-round moratorium on all CWW or changing fisheries management practices. Some of the public comments submitted during the EIS scoping process suggested that WDFW consider requiring and/or incentivizing CWW operators to install noise-reducing technology on motorized vessels. Noise-reducing technology might include switching to hybrid or electric motors or installing different propulsion systems on motorized CWW vessels. Noise-reducing technology is not included as an alternative component in the DEIS because industry-wide installation is anticipated to take a long time for implementation and potentially be cost prohibitive for some CWW operators. This type of measure may be considered in the future as part of adaptive management of the rules based on best available science and/or as new propulsion technologies are developed.³⁸ All other potential EIS components raised during scoping that are within the scope of the EIS are included in the alternatives and/or mitigation measures, which are discussed in the next chapter.

³⁸ Washington State Academy of Sciences, "Q&A," 4.



III: Affected Environment, Impacts, and Mitigation Measures

Affected Environment

The affected natural environment for all four alternatives is the SRKWs' habitat in Washington's inland marine waters, which includes all of Puget Sound, the Strait of Juan de Fuca, and Southern Georgia Strait, wherever SRKWs forage, rest, and socialize in Washington State (see Figure 1: Map of the Salish Sea). The affected built environment for all four alternatives includes the recreation opportunities provided by CWW operations.

SEPA provides a comprehensive list of 16 environmental elements to be considered in an EIS analysis; however, the EIS must evaluate only the elements that apply to the proposal (WAC 197-11-960). The alternatives described in DEIS Chapter II: *Alternatives* could have significant impacts on two SEPA environmental elements:

1. **Animals**, specifically SRKWs and the impacts of noise and disturbance from CWW vessel traffic, and
2. **Recreation**, specifically recreators (i.e., customers who choose to participate in commercial whale watching), commercial whale watching opportunities, and participant experience.

The alternatives may also impact two additional SEPA environmental elements: air and water. Research from the last decade indicates vessel exhaust is one of the pollutants in the marine environment that can reduce orca immunity and cause reproductive stress.³⁹ If the CWWLP restricts CWW vessel operation, the amount of air and water pollution associated with CWW activity (e.g., vessel engine emissions) will likely be reduced if motorized vessels are used less. However, these impacts are not

³⁹ Washington State Academy of Sciences (citing Lachmuth et al 2011, and Lundin et al 2018), "Final Summary of Findings," 10.

considered significant because CWW operations represent a small portion of overall vessel traffic and likely do not contribute much to the air and water pollution in the affected environment.

Analysis Limitations

Uncertainty

The DEIS analysis of significant environmental impacts on SRKWs and whale watching activities is based primarily on the best-available science resources identified by the WSAS independent science panel. In its June 2020 Q&A document prepared for the CWWLP Advisory Committee, the science panel acknowledged the difficulty in providing conclusive information due to inherent uncertainties in current evidence about the SRKWs and the magnitude of impacts from disturbance and noise from small vessels and CWW on SRKWs. In the WSAS Summary of Key Research Findings, the science panel notes that the differences in scientific studies such as study age, sample size, and other limitations lead to uncertainty in answers regarding vessel disturbance of SRKWs.⁴⁰ In addition, the CWWLP is limited in its scope to restrictions on CWW license holders, but SRKWs also experience noise and disturbance from other types of vessels such as private recreational and shipping vessels. It is difficult to differentiate overall impacts among particular types of vessel. Given these limitations, the DEIS cites specific information regarding impacts when possible, explicitly states assumptions that are based on the information available, and clearly identifies instances when the extent of impacts cannot be determined or are unknown.

Potential Unintended Consequences

The CWWLP could result in unintended negative impacts on SRKWs. For example, a licensing program that limits the duration and number of CWW vessels near SRKWs could distribute disturbance and noise across a greater number of SRKW groups or individuals if it leads to more vessels cycling in or out of the vicinity of SRKWs or queuing for a turn.⁴¹ Another example is the addition of designated no-go zones could cause a larger burden of vessels on a smaller number of whales foraging at the farther distance. Large male SRKWs often forage farther offshore and an expanded area could impact their foraging efforts.⁴² Furthermore, SRKW viewing restrictions might redistribute air and water quality impacts because CWW vessels may travel further to view different species.

Impacts on Animals: SRKWs

This section assesses the impacts each of the DEIS alternatives could have on SRKWs, particularly the extent to which the alternatives have the potential to reduce the daily and cumulative impacts of vessel noise and disturbance on SRKWs. Key information used to estimate the impact of the alternatives on SRKWs includes:

- SRKWs are affected by the presence and general disturbance of vessels, including non-motorized vessels such as kayaks.⁴³

⁴⁰ Washington State Academy of Sciences, "Summary of Key Research Findings," 1.

⁴¹ Washington State Academy of Sciences, "Q&A," 10.

⁴² Washington State Academy of Sciences, "Review of Proposed Rules," 4.

⁴³ Washington State Academy of Sciences, "Q&A," 7

- Vessel presence can elicit SRKW behavioral disruptions such as increased surface-active behaviors, changes in swimming patterns, and reduced foraging behavior.⁴⁴
- Research conducted off of Vancouver Island noted that Northern Resident Killer Whales change their activity state when in the presence of more than three boats.⁴⁵ Northern Residents are part of the same resident killer whale ecotype as SRKWs and also live in communities of matriline, but Northern Residents predominately range from southern Alaska to Washington and are often sited in Johnstone Strait, the northeastern part of Vancouver Island.^{46, 47}
- SRKWs are not only affected by the general presence of vessels but the time spent around vessels. Reducing time spent around vessels would reduce daily and cumulative exposure to noise and disturbance, therefore reducing daily and cumulative impacts.⁴⁸
- SRKWs use echolocation to locate their prey.⁴⁹
- Vessel noise has significantly raised the background noise levels in the Salish Sea.⁵⁰ The raised background noise level is in the frequency range that SRKW use for echolocation and communication with each other.⁵¹
- Large disturbance effects occur as vessels get closer to SRKWs.⁵² Noise levels are reduced when the time with SRKWs and the number of vessels and their speed are reduced.⁵³
- As cited in the Washington State Academy of Sciences “Summary of Key Research Findings,” the science is not fully established to make direct cause-and-effect relationships between certain vessel interaction and behaviors and SRKWs. However due to the fragile condition of SRKWs and their population, each interaction with a SRKW is taken as opportunity to disturb the animal.⁵⁴

This section focuses on impacts to the ESA-listed species in the affected environment, the SRKWs. Many of the actions WDFW is considering, including limitations on CWW operating days and times, could also reduce noise and disturbance impacts of CWW on other wildlife species. The overall effects of SRKW-viewing limitations on other wildlife is unclear, in part because the nature and extent of CWW activity could shift based on any new restrictions.

Alternative 1

Alternative 1 is associated with the **least significant adverse impacts and the most conservation benefit** for, SRKWs, as CWW operation and vessel activity is restricted more under Alternative 1 than any other alternative. This alternative would likely result in the most substantial reductions in daily and cumulative noise and disturbance impacts to SRKWs from CWW vessels, particularly from the components that limit vessels around SRKWs and the times for CWW operations and SRKW viewing. Under Alternative 1:

⁴⁴ Washington State Academy of Sciences, “Q&A,” 7.

⁴⁵ Williams and Ashe, “Killer whale evasive tactics,” 394.

⁴⁶ Fisheries and Oceans Canada. “Killer Whale (Northeast Pacific Northern Resident Population).”

⁴⁷ Ibid

⁴⁸ Washington State Academy of Sciences, “Q&A,” 9.

⁴⁹ Au et al., “Echolocation signals,” 901.

⁵⁰ Veirs and Veirs, 2005, as cited in “Washington State Academy of Sciences, “Summary of Key Research Findings,” 7.

⁵¹ Au et al. 2004 and Veirs et al. 2016, as cited in “Washington State Academy of Sciences, “Summary of Key Research Findings,” 9.

⁵² Washington State Academy of Sciences, “Summary of Key Research Findings,” 11.

⁵³ Washington State Academy of Sciences, “Summary of Key Research Findings,” 16.

⁵⁴ Washington State Academy of Sciences, “Summary of Key Research Findings,” 4.

- CWW vessels are limited to 0 to 2 in the vicinity of SRKWs:* In Alternative 1, the minimum number of vessels is 0 and the maximum number of vessels is 2. Based on data from Soundwatch, in 2019 there was an average of 5 CWW vessels in the vicinity of SRKWs.⁵⁵ In Alternative 1, the number of CWW vessels is reduced by 3-5 CWW vessels. The science indicates that fewer vessels around SRKWs are better for them.⁵⁶ However, information on impacts from fewer than 3 vessels is not available in the scientific literature, so it is not possible to quantify differential impacts to SRKWs between 1 and 3 vessels.⁵⁷ As the number of vessels increase, particularly with three or more, there is likely a greater negative impact on SRKWs.⁵⁸ As cited by the Washington State Academy of Sciences, a greater number of boats results in greater radiated noise levels and leads to greater behavioral impacts.⁵⁹ The presence of more vessels has a cumulative effect on the physiological stress in SRKWs and is amplified especially during years of relatively low Fraser River Chinook abundance.⁶⁰ Limiting the number of CWW vessels in the vicinity of SRKWs to 0 to 2 will result in the most significant reduction of adverse impacts from CWW vessels on SRKWs among the alternatives.
- CWW vessels are limited to spending 0 to 15 minutes in the vicinity of SRKWs:* PWWA's best practice is currently 60 minutes for viewing SRKWs. Alternative 1 would reduce SRKW viewing time by 75% to 100% of the current viewing best practices and therefore result in a dramatic reduction in noise and disturbance impacts from CWW to SRKWs. Reducing the amount of time CWW vessels can spend around SRKW to 0 to 15 minutes would decrease daily and cumulative SRKW exposure to noise and disturbance from CWW vessels.⁶¹
- CWW operation is limited to specific hours of the day, number of days per week, and/or seasons:* Under Alternative 1, CWW operation would be limited to 0 to 4 hours per day, 0 to 2 days per week, for 8 to 11 months of the year. This alternative reduces the days and hours for CWW operation the most from current practice (with most whale watching occurring 9 hours/day and during the summer months) and would result in the most significant daily and cumulative reductions in vessel noise and disturbance impacts to SRKWs of all the alternatives. It is assumed that limited CWW operation would have a similar impact on SRKWs to limited SRKW viewing. For example, if CWW is limited to two days per week, the impact on SRKWs would likely be the same as limiting SRKW viewing days to two per week. In this scenario, CWW daily operations are reduced by a minimum of 71% (operating 2 instead of 7 days/week) as well as SRKW viewing.
- SRKW viewing is limited to specific hours of the day, number of days per week, and/or seasons:* Alternative 1 limits timeframes for CWW vessels to view SRKW to 0 to 4 hours per day, 0 to 2 days per week, and 0 to 4 months per year. Under Alternative 1, SRKW viewing days are reduced by at least 71% per week and hours of the day are reduced by at least 55% compared to when most CWW currently occurs. These limitations and reductions in viewing hours, days, and

⁵⁵ Shedd, et al., "2019 Soundwatch," 30.

⁵⁶ Washington State Academy of Sciences, "Q&A," 5.

⁵⁷ Washington State Academy of Sciences, "Q&A," 2.

⁵⁸ Ibid, 3-4.

⁵⁹ Washington State Academy of Sciences, "Summary of Key Research Findings," 13.

⁶⁰ Ibid, 5.

⁶¹ Washington State Academy of Sciences, "Q&A," 9.

months of the year would reduce the SRKWs' overall exposure to CWW vessels more than the other alternatives, thereby reducing noise, disturbance, and significant negative impacts.⁶²

- *CWW vessels comply with several adaptively managed restricted access areas or no-go zones:* Eliminating CWW vessel presence in areas of SRKW-preferred habitat, including the west side of San Juan Island, will likely reduce incidents of vessel disruption to SRKWs' typical activities. Restricted access areas such as these have been implemented in New Zealand. In order to reduce vessel interactions with a critically endangered population of bottlenose dolphins, the New Zealand Department of Conservation created no-go zones. This approach has resulted in the significant reduction in time and length of interactions that dolphins share with boats.⁶³ Therefore, it is assumed that with more restricted areas that are selected, designed, and adaptively managed to consider the foraging and habitat needs for SRKWs, incidents of vessel disruption may decrease. The specific anticipated impacts of additional restricted areas would depend on which areas WDFW selects.
- *CWW vessels turn off sonar or echolocation devices within half a nautical mile of SRKW:* Turning off sonar or echolocation devices (or setting them to 200kHz mode) would reduce the noise emitted into the water column that could interfere with SRKWs' echolocation.⁶⁴
- *CWW vessels report and/or provide documentation of SRKW location and presence to WDFW:* Reporting the location of SRKW would benefit whale management and may have an indirect positive impact on SRKWs, as it could allow WDFW to increase its enforcement presence around SRKWs in general as well as support overall monitoring, evaluation, and adaptive management of the CWWLP. Reporting can help notify maritime operators such as ferries, tugboats, and ships of nearby SRKWs.
- *Additional kayak-specific regulations:* In addition to codifying KERP best practices, kayak-specific regulations might include prohibiting kayak launches or staying within 100 yards of shore when SRKWs are in the vicinity. The prohibition on launching into an oncoming group of SRKW would likely decrease interaction between SRKWs and vessels which would decrease disturbance.⁶⁵

The exact extent to which the SRKWs may benefit from the Alternative 1 restrictions is unknown. However, it is likely that the cumulative effect of the restrictions, with any mitigation measures WDFW pursues, would have the most beneficial impacts on the SRKWs of all the alternatives. As it is currently constructed, Alternative 1 is unlikely to meet the WDFW mandate. Alternative 1 places restrictions on CWW operating days/time that may not be economically viable for CWW license holders.

Alternative 2

The management strategies of Alternative 2 would have **some significant adverse impacts and some conservation benefits** for SRKWs; Alternative 2 reduces more daily and cumulative SRKW exposure to vessel noise and disturbance compared to Alternatives 3 and 4, particularly through limits to CWW operational times and SRKW viewing days/hours, but is less restrictive to CWW (and would provide less conservation benefits) compared to Alternative 1. Under Alternative 2:

⁶² Ibid, 9.

⁶³ Ibid, 10.

⁶⁴ Ibid 6.

⁶⁵ Washington State Academy of Sciences, "Review of Proposed Rules," 4.

- CWW vessels are limited to 3 to 4 in the vicinity of SRKWs:* This alternative would limit the number of CWW vessels around SRKWs to 1-2 CWW vessels less (20-40%) than the annual daily average of CWW vessels around orcas from recent years; on peak viewing days this would represent a greater restriction of CWW vessels.⁶⁶ Since all vessels contribute to vessel noise and disturbance impacts to SRKWs, it is difficult to estimate the effects of reducing CWW vessel numbers only. As described in analysis of the number of vessels component in Alternative 1, the presence of vessels, including non-motorized vessels such as kayaks, can elicit SRKW behavioral disruptions. Because Northern Resident Killer Whales change their activity state when in the presence of more than three boats, it is assumed SRKWs do the same.⁶⁷ Alternative 2 allows more CWW vessels in the vicinity of SRKWs than Alternative 1, but fewer than Alternatives 3 and 4, so would likely be less beneficial at reducing daily and cumulative noise and disturbance impacts to SRKWs than Alternative 1, but more beneficial than Alternatives 3 and 4.
- CWW vessels are limited to spending 16 to 45 minutes in the vicinity of SRKWs:* Under Alternative 2, CWW vessels can spend more time with SRKWs, which would likely increase their exposure to noise and disturbance compared to Alternative 1. The current best practices from PWWA include a 60-minute viewing period unless there are more than 9 PWWA vessels, when PWWA vessels limit their viewing to 30 minutes. Under Alternative 2, vessels would reduce their viewing time by 25-73% compared to the 60-minute best practice. If there are more than 9 vessels, the mid-point of this component aligns with the current best practices. Reducing the time vessels spend around SRKWs could reduce daily and cumulative impacts from noise and disturbance.⁶⁸ Vessels staying with SRKWs for the upper end of the time range (i.e., 45 minutes) would generally disturb SRKWs more than if they stayed at the lower end of the time range.
- CWW operation is limited to specific hours of the day, number of days per week, and/or seasons:* Under Alternative 2, CWW operation is limited to 4-to 8- hours per day, 3 to 5 days per week, during a 4- to 7-month window. As the number of hours and days of operation increase, it is assumed there could be more noise and disturbance and therefore more potential impacts on SRKWs. Under Alternative 2, the number of operational days is reduced by 28% to 57% and the hours per day is reduced by 11% to 55% (assuming a nine-hour viewing time). Given these time reductions, this alternative would likely be less beneficial at reducing daily and cumulative noise and disturbance impacts to SRKWs than Alternative 1, but more beneficial to SRKWs than Alternatives 3 and 4.
- SRKW-viewing is limited to specific hours of the day, number of days per week, and/or seasons:* Alternative 2 limits the timeframe for CWW vessels to view SRKWs to a 4-to 8-hour daily window, 3 to 5 days per week, and has variable restrictions on SRKW viewing depending on the time of year. Alternative 2 also has additional restrictions on SRKW viewing during a 4- to 7-month specified annual window such as April through July, when SRKWs are most commonly in the U.S. portion of the Salish Sea, and allows for additional restrictions on the days, times, locations, vessels, and/or areas for viewing SRKW during this period. Alternative 2's time ranges for viewing SRKWs are as almost double the time allowed in Alternative 1 and CWW vessels could have as many as 5 more days per week to view SRKWs compared to in Alternative 1. As most vessels view SRKWs between 9:00 AM-6:00 PM (see Figure 4) for a total of 9 hours per

⁶⁶ Shedd, et al., "2019 Soundwatch," 30.

⁶⁷ Williams and Ashe, "Killer Whale evasive tactics," 394.

⁶⁸ Washington State Academy of Sciences, "Q&A," 9.

day, Alternative 2 would reduce viewing hours by 11% to 55% if SRKW are present in the Salish Sea. The daily, weekly, and seasonal time frame reductions in SRKW viewing in Alternative 2 would likely be less beneficial in reducing CWW noise and disturbance impacts to SRKWs compared to Alternative 1, but more beneficial than Alternatives 3 or 4.

- *CWW vessels comply with several adaptively managed restricted access areas or no-go zones:* Similar to Alternative 1, Alternative 2 would establish restricted access areas or no-go zones, including the west side of San Juan Island, but there would be fewer restricted areas compared to Alternative 1. The additional restricted areas (other than the west side of San Juan Island) in this alternative have not yet been specified but would be based on considering factors such as SRKW foraging patterns. No-go zones allow SRKWs to forage without disturbance from CWW in the zone. The WSAS science panel noted that no-go zones would need to be regularly reviewed as part of an adaptive management plan because SRKWs could change forage areas based on prey availability.⁶⁹
- *CWW vessels report and/or provide documentation of SRKW location and presence to WDFW:* In Alternative 2, CWW operators are required to report SRKW locations to WDFW Enforcement when they see private recreational vessels in the vicinity of SRKWs. Alternative 2 does not have as many reporting requirements as Alternative 1 and does not require a log of SRKW sightings, viewing, or other on-the-water observations.
- *Additional kayak-specific regulations:* In Alternative 2, the kayak-specific regulations include codifying some or all of the KERP best practices. Since these are already best practices, codifying the practices may not represent much change from the No Action Alternative (Alternative 4); however, there could be some increased awareness of how to maintain an appropriate distance from SRKWs. Alternative 2 would likely be less beneficial to SRKWs in terms of reducing vessel disturbance than Alternative 1, as it does not have additional restrictions such as prohibiting launching into oncoming SRKWs.

The exact extent to which the SRKWs may benefit from the Alternative 2 restrictions is unknown. However, it is likely that the cumulative effect of the restrictions and any mitigation measures WDFW pursues would reduce daily and cumulative impacts of CWW vessel noise and disturbance on SRKWs. As it is currently constructed, Alternative 2 could possibly meet the WDFW mandate. Alternative 2 reduces the opportunities for recreation and operating hours but reduces daily and cumulative impacts on SRKWs.

Alternative 3

Alternative 3 could have **more significant adverse impacts and less conservation benefits** on SRKWs. This alternative would likely result in the least substantial reductions in daily and cumulative noise and disturbance impacts to SRKWs from CWW vessels, since it represents the least amount of changes in CWW operations, SRKW viewing, and vessel numbers from the status quo. The management strategies of Alternative 3 are less restrictive than Alternatives 1 and 2, but more restrictive than current conditions (Alternative 4: No Action). Under Alternative 3:

⁶⁹ Washington State Academy of Sciences, "Review of Proposed Rules," 4.

- CWW vessels are limited to 5 to 10 in the vicinity of SRKWs:* According to Soundwatch data, in 2018 and 2019 there was an average of five commercial vessels in the vicinity of SRKWs.⁷⁰ The low end of the Alternative's range for number of vessels in the vicinity of SRKWs is similar to trends observed over the past two years. Within Alternative 3, the maximum number of CWW vessels allowed in the vicinity of SRKWs is ten, double the most recent year's average, which will lead to less reduction in noise and disturbance from CWW to SRKWs as compared to the minimum of five vessels. Alternative 3 could have some effects on reducing noise and disturbance impacts from CWW vessels during peak viewing times when there may otherwise be more CWW vessels operating; however, in many cases, the impacts may not represent much, if any, change from the status quo (Alternative 4). Alternatives 1 and 2 are anticipated to provide greater reductions in CWW vessel noise and disturbance impacts.
- CWW vessels are limited to spending 46 to 60 minutes in the vicinity of SRKWs:* Alternative 3 triples or quadruples SRKW-viewing time compared to the time limits in Alternative 1; it is similar to current PWWA viewing best practices for SRKWs. More time and vessel presence have a higher likelihood of contributing to SRKW behavioral changes such as reduced foraging, so this alternative is likely to have less beneficial impacts on SRKWs than Alternatives 1 or 2 but could have similar or slightly more beneficial impacts than Alternative 4.⁷¹
- CWW operation is limited to specific hours of the day, number of days per week, and/or seasons:* In Alternative 3, CWW operations are limited from a 1- to 2-hour window after sunrise to 1- to 2- hours before sunset and CWW operations are restricted to 6 days per week. The hours of operations per day closely mimic the current hours of operations for CWW vessels, with the exception of occasional sunset tours. Alternative 3 has additional CWW restrictions on days and/or hours of CWW operation for a 1- to 3-month window. Alternative 3 provides a potential reduction of all CWW vessel presence for certain days compared to Alternative 4. Alternative 3 is likely to be less beneficial to SRKWs compared to Alternatives 1 and 2 due to the increase in hours of the day, number of days per week, and the increase in operating season for all CWW operations. Alternative 3 does not provide SRKWs a break from CWW vessels during the daylight hours, when most SRKW foraging occurs.⁷² This alternative would reduce CWW operating days by one day a week (14% reduction) and therefore eliminate CWW vessel noise and disturbance on those days. This represents more noise and disturbance reduction than No Action (Alternative 4), but less than the other alternatives.
- SRKW-viewing is limited to specific hours of the day, number of days per week, and/or seasons:* In Alternative 3, CWW vessels have limited hours of the day in which CWW vessels can view SRKWs. SRKW-viewing hours are reduced 1 to 2 hours before sunrise and 1 to 2 hours after sunset. CWW vessels have restricted SRKW-viewing of 6 days per week with additional restrictions on SRKW viewing in a 1- to 3-month annual window. SRKWs' exposure to CWW vessels will be reduced by one day a week (by 14%, to 6 days), which, as with CWW operations above, would provide some additional benefits to SRKWs than Alternative 4, but less than the other alternatives. The reduction in hours before sunrise and after sunset may not have an impact on SRKWs because CWW vessels do not typically view SRKWs outside of that time period. According to Soundwatch data, the "peak times of day" in 2019 were between 10:00 AM

⁷⁰ Shedd, et al., "2019 Soundwatch," 30.

⁷¹ Williams and Ashe, "Killer Whale evasive tactics," 394.

⁷² Washington State Academy of Sciences, "Review of Proposed Rules," 14.

and 12:00 PM, which falls within Alternative 3's hours of operations, with most CWW occurring between 9:00 AM and 6:00 PM.⁷³ While Alternative 3 restricts viewing hours before sunrise and after sunset, the majority of SRKW viewing typically occurs between these times and could potentially have little change in impacts to SRKWs from the status quo.

- *CWW vessels comply with several adaptively managed restricted access areas or no-go zones:* Under Alternative 3, the existing voluntary west side of San Juan Island no-go zone when SRKWs are in the vicinity is codified. This restriction would allow SRKWs to forage in this area without the presence of CWW vessels and would likely benefit SRKWs compared to Alternative 4. Avoiding the west side of San Juan Island is already part of the PWWA's best practices, but codifying the voluntary no-go zone could strengthen the effect of the best practices and ensure that the no-go zone applies to all CWW vessels, including those that are not part of the PWWA. However, Alternative 3 does not include additional areas as outlined in Alternative 1 and 2 and potentially has fewer impacts since it includes just one area.
- *CWW vessels report and/or provide documentation of SRKW location and presence to WDFW:* CWW operators are required to report emergency situations, such as SRKW health or injury problems, to WDFW Enforcement. These efforts could supplement information on the health and status of the SRKWs but would not provide as comprehensive an overview of the SRKWs compared to Alternative 1. Alternative 3 would likely benefit orca management less than Alternatives 1 or 2, as Alternative 3 only requires reporting when there is an emergency situation whereas Alternatives 1 and 2 require reporting of more information in additional circumstances. These emergency reports would need to be documented by trained naturalists who are able to identify the pod, orca activity state, and health and injury problems.⁷⁴

It is likely that the cumulative effect of the Alternative 3 restrictions and any mitigation measures WDFW pursues would have less success in reducing noise and disturbance impacts to SRKWs compared to Alternatives 1 and 2 but potentially more success than the No Action Alternative. As described, Alternative 3 is unlikely to meet the WDFW mandate because the alternative provides few benefits to SRKWs.

It is noted that many components in Alternative 3 are similar to current voluntary best practices; if operators currently follow best practices for those components, there may not be any discernible difference in reduction in vessel noise and disturbance impacts to SRKWs from Alternative 3 as compared to the No Action Alternative.

Alternative 4: No Action

The management strategies of Alternative 4 represent the current situation; WDFW would institute no restrictions for CWW operation and vessel activities. Alternative 4 is associated with the **most significant adverse impacts and the least conservation benefits** for SRKWs. Under Alternative 4:

- *The number of CWW vessels in the vicinity of SRKWs is unlimited:* Alternative 4 would likely contribute to large amounts of disturbance and noise towards SRKWs due to absence of a maximum limit for CWW vessels. As stated in Alternative 1, the presence of vessels impacts

⁷³ Shedd, et al., "2019 Soundwatch," 32-33.

⁷⁴ Washington State Academy of Sciences, "Summary of Key Research Findings," 16.

foraging and other behaviors by the SRKWs.⁷⁵ Alternative 4 would likely have the least beneficial impacts to the SRKWs compared to Alternatives 1, 2, and 3.

- *CWW vessels have unlimited time in the vicinity of SRKWs:* The current PWWA best practice is for CWW vessels to spend 60 minutes around orcas unless there are more than 9 PWWA vessels within 1km, in which case the best practice is 30 minutes. The Be Whale Wise guidelines recommend only 30 minutes for viewing whales and other marine wildlife. If followed (which cannot be assured), the voluntary best practices in Alternative 4 would allow viewing times in the range of either Alternative 2 (30 minutes) or Alternative 3 (60 minutes), depending on which guidelines are followed and under what conditions. In either case, this represents more time with SRKWs than Alternative 1. Increases in time are assumed to increase the disturbance on SRKWs. Since implementation of voluntary guidelines cannot be assumed, Alternative 4 is likely to have the least beneficial impact on SRKWs of all the alternatives given the unlimited amount of time CWW vessels can spend in the vicinity of SRKWs.
- *CWW operation is unlimited for hours, days, and/or seasons:* Within Alternative 4, CWW operations are unlimited and there are no restrictions on the hours of operation, days of CWW operations, and CWW operating seasons. Even though CWW vessels may not directly pursue SRKWs, the mere presence and noise could impact SRKWs, especially without additional restrictions on SRKW viewing.
- *SRKW viewing is unlimited:* If there are unlimited number of hours, SRKWs will not be provided a break during the daytime hours from interactions with CWW vessels.⁷⁶ In Alternative 4, SRKWs could potentially be interacting with CWW vessels all day and week, which likely impacts their foraging behaviors and general communication.⁷⁷
- *CWW vessels do not have any restricted access zones:* In Alternative 4, CWW vessels do not have any restricted access zones, but there is a voluntary no-go zone on the west side of San Juan Island for motorized CWW vessels in Be Whale Wise and PWWA best practices. This no-go zone is not codified. Alternative 4 would be similar to Alternative 3 in disturbance impacts to SRKWs if all CWW vessels abided by the Be Whale Wise and PWWA best practices; however, if CWW vessels did not abide by the restrictions, the disturbance impacts could be greater in Alternative 4.
- *CWW vessels do not have sonar or echolocation device restrictions when operating tours:* In Alternative 4 (and Alternatives 2-3), CWW vessels are not required to turn off sonar or echolocation devices while operating tours. Sonar and echolocation devices could potentially interfere with SRKWs' echolocation clicks, communication, and foraging abilities. PWWA guidelines recommend turning off sonar and echolocation when within 1 km of whales, which is similar to the action included in Alternative 1. The extent to which the No Action Alternative for this component differs in its potential impact to SRKWs from Alternative 1 depends on compliance with this existing best practice.
- *CWW vessels do not have reporting requirements for SRKWs:* In Alternative 4, CWW vessels do not have any reporting requirements for CWW operators; however, some CWW vessels

⁷⁵ Washington State Academy of Sciences, "Q&A," 7.

⁷⁶ Washington State Academy of Sciences, "Review of Proposed Rules," 4.

⁷⁷ Ibid, 4.

voluntarily report SRKW presence and location to WDFW Enforcement. This voluntarily reported information could have some indirect benefits for SRKWs by supporting WDFW in implementation of the CWWLP, but it represents less information than WDFW anticipates receiving under the reporting requirements in Alternatives 1, 2, or 3.

- *Additional kayak-specific regulations:* In Alternative 4, there are no kayak-specific regulations and the KELP best practices are voluntary. The impacts on SRKWs is uncertain and could potentially be maintained from previous years.

SRKWs would be harmed by the cumulative effects of little to no CWW vessel restrictions. Alternative 4 reflects the status quo and in some of the components such as time limits go against PWWA's current best practices. SRKWs are already in critical condition and if this Alternative were to be pursued, it would be the least effective alternative to reduce noise and disturbance impacts on SRKWs. Alternative 4, on its own, does not meet WDFW's legislative mandate because it does not reduce noise or disturbance of CWW vessels on SRKWs from the status quo.

Impacts on Recreation: Commercial Whale Watching Recreators

This section assesses the impacts that each of the DEIS Alternatives could have on CWW opportunities and the participant experience for recreators (not operators) who choose to participate in commercial whale watching, including motorized vessels and kayak tours. Key information used to estimate the impact of the alternatives on recreation includes:

- PWWA representatives estimate that only 10% of CWW tours currently view SRKWs.⁷⁸
- For the past 20 years, the average daily number of vessels around orcas in Haro Strait from May to September has been 17 vessels, including 9 CWW vessels and 6 private recreational vessels.⁷⁹
- In 2018-19, there were fewer vessels around orcas in U.S.-Canada boundary waters between May and September, with a daily average of 5 CWW vessels, 3 private recreational vessels, and 1-2 kayaks (see Figure 2).⁸⁰
- The number of vessels around orcas varies during the season, and the peak number of vessels can be much higher than the annual average. In 2019, the highest number of vessels around orcas occurred in July, when there were as many as 26 private recreational vessels, 18 ecotour vessels (motorized CWW operators), and 13 kayaks.⁸¹
- Most CWW trips for U.S.-based PWWA members currently occur between 9:00 AM and 6:00 PM, but some operators offer evening or sunset tours that last as late as 9:30 PM.⁸²
- CWW operators in the San Juan Islands typically offer whale watching tours that last 3 to 4 hours, with some operators offering longer tours (e.g., full-day kayak tours or 4.5-hour tours).⁸³

⁷⁸ Personal communication with Kelley Balcomb-Bartok and Jeff Friedman, Pacific Whale Watch Association on June 5, 2020, as cited in Kassakian, Ebersole, and Flight "Economic Viability," 15.

⁷⁹ Shedd, et al., "2019 Soundwatch," 30.

⁸⁰ Ibid, 30.

⁸¹ Ibid, 33.

⁸² Kassakian, Ebersole, and Flight, "Economic Viability," 21.

⁸³ Review of Washington state PWWA member websites, July 2020.

- Whale watching viewership overall and revenues have increased in recent years, even with new restrictions in place in the U.S. and Canada:
 - In 2019, Canadian-based members of PWWA signed an agreement with the Government of Canada to refrain from promoting tours on SRKWs or viewing SRKWs if encountered when in transit. Despite this agreement, whale watching viewership *increased by 7.6% from 2018 to 2019 with the new restrictions in place.*⁸⁴
 - Revenues for U.S.-based members of PWWA also increased since 2011, even after new federal vessel traffic regulations went into effect in 2012 and while SRKWs were declining.⁸⁵

WDFW's CWWLP actions would not apply to either land-based whale watching or whale watching on private vessels. It is unclear to what extent, if any, the restrictions in commercial whale watching activity in the alternatives that WDFW is considering would result in any changes to land-based or general whale watching activity.

Alternative 1

Alternative 1 could have the ***most significant adverse impacts*** on the opportunities for commercial whale watching of all the alternatives, as it would place the most limitations on CWW and SRKW viewing. Although WDFW has indicated that it does not intend to impose a moratorium on CWW, this alternative has the highest likelihood of adverse impacts to CWW operations and recreators if the more restrictive ends of the ranges are selected (e.g., shortest time allowances for overall CWW operations). Because of this, Alternative 1 is unlikely to meet the legislative mandate in terms of ensuring sustainable commercial whale watching. Alternative 1 management strategies and anticipated potential impacts on CWW recreational opportunities are described below.

- *CWW vessels are limited to 0 to 2 in the vicinity of SRKWs:* Alternative 1 would represent a very large (60-100%) decrease from both the average of 5 CWW vessels and the maximum of 18 motorized CWW vessels around orcas that occurred in 2019. However, this alternative would not restrict vessels in the vicinity of other whales and/or marine wildlife and would apply only to the very small portion of CWW tours that view SRKWs. For this reason, although it would be a large reduction in the average number of CWW vessels allowed to view SRKWs at a time compared to 2019 levels, the impact to CWW recreators overall is not anticipated to be significant because only a small portion of tours view SRKWs, despite the reduced opportunity to view SRKWs specifically.
- *CWW vessels are limited to spending 0 to 15 minutes in the vicinity of SRKWs:* This component would only affect viewing time for SRKWs, which applies only to the very small proportion of tours that view SRKWs. This would place the smallest time limit on SRKW viewing of any alternative, but the remaining majority of CWW activity, including viewing transient orcas, would not be affected, so the impact to CWW tour participants overall is not anticipated to be significant.

⁸⁴ Kassakian, Ebersole, and Flight, "Economic Viability," 16.

⁸⁵ Kassakian, Ebersole, and Flight, "Economic Viability," 15.

- *CWW operations would be restricted seasonally for 8 to 11 months; this could include limiting CWW operations to 0 to 2 days per week and/or limiting CWW operations to a 0- to 4-hour per day window:* Most CWW in Washington occurs during the summer season, from May through September, although whale watching is a year-round activity, so restrictions in CWW for 8 to 11 months would likely cover this full busy period. Within this period, this alternative contains potential limits on the times and days for CWW operations:
 - Alternative 1 would result in the highest reduction in CWW activity by reducing the available days for CWW anywhere from 71% (2 days per week) to 100% (0 days per week) when the restrictions apply. This would have the most significant reduction of CWW opportunities of all the alternatives for this component.
 - Alternative 1 would reduce the available daily windows for CWW more than the other alternatives, to 0 to 4 hours per day, when the restrictions apply. Limiting CWW to a 4-hour or less window could limit CWW operators to conducting only one tour option a day or shortened tours, rather than offering options such as morning, afternoon, full-day, and/or sunset/evening tours. A reduction in tour options does not necessarily correlate to a reduction in the total number of tours, since a tour operator could offer more tours (if they have more than one vessel) during fewer time slots. However, there would likely be some decrease in CWW activity as a result of this change, as well as the potential for a more crowded experience for whale watchers during tour times. At the lower end of the range, if CWW were limited to at or near zero hours per day, CWW tours would no longer be viable when the restrictions were in place. This would be the most significant adverse impact on CWW opportunities of all the alternatives for this component.
- *SRKW-viewing is limited to specific hours of the day, number of days per week, and/or seasons:* This alternative would specifically limit the days and hours that CWW vessels could view SRKWs to 0 to 2 days per week during a 0- to 4-hour daily window. These limitations could be applied on a seasonal basis anywhere from 8 to 12 months. Since SRKW viewing is a very small part of overall whale watching and whale watching viewership increased in Canada after SRKW viewing was restricted,⁸⁶ the impacts of these SRKW-viewing limitations are not anticipated to significantly affect CWW opportunities in Washington.
- *CWW vessels comply with several adaptively managed restricted access areas or no-go zones:* Under this alternative, multiple geographic areas, including the current voluntary no-go zone on the west side of San Juan Island, would be closed to CWW when SRKWs are in the vicinity. The specific geographic areas are not defined in the alternative, so the specific effects of this alternative on areas of recreational activity is uncertain. However, since the restricted areas would be dependent on the presence of SRKWs, this alternative would likely only affect CWW operations that view SRKWs, which is a small portion of all tours. Given that these geographic limitations depend on the presence of SRKWs, the impact to CWW tour participants is not anticipated to be significant.
- *CWW vessels turn off sonar or echolocation within half a nautical mile of SRKW (when safe to do so):* Turning off sonar or echolocation devices in certain conditions would add a procedure for

⁸⁶ Kassakian, Ebersole, and Flight, "Economic Viability," 16.

CWW operators, but this procedure is consistent with existing PWWA best practices. It would likely not change the CWW recreational experience for customers and therefore is assumed not to have a significant impact.

- *CWW vessels report and/or provide documentation of SRKW location and presence to WDFW:* The reporting requirements for CWW operators would provide information to WDFW to help with its understanding of the status of SRKWs, monitoring of the CWWLP, and adaptive management of the program, but is not likely to change the whale watching recreational experience for customers.
- *Additional kayak-specific regulations:* The KERP best practices for kayakers, as documented in the 2011 Kayakers' Code of Conduct, represent voluntary guidelines for kayakers to assist in adhering to existing laws to protect orcas and other wildlife.⁸⁷ Codifying some or all of the KERP best practices is not anticipated to have much, if any, impact on recreation, given that it already represents best practices to support existing laws. Additional kayak-specific regulations that WDFW is considering beyond the KERP guidelines for this alternative could include more geographic restrictions for kayak tours (e.g., staying within 100 yards of shore on the West side of San Juan Island) and new requirements for kayaking in relation to SRKWs (e.g., not launching kayakers when SRKWs are in the vicinity). The examples of potential additional restrictions provided are not anticipated to have significant effects on commercial kayak tour participants, given that they pertain to SRKWs specifically and/or limit kayakers to being close to shore in certain geographic areas where they already are most often.

Alternative 2

Alternative 2 management strategies could have **some significant adverse impacts** on recreators' opportunities to participate on a CWW tour. As a mid-range alternative, Alternative 2 is anticipated to have fewer adverse impacts on recreation than Alternative 1 and could meet the legislative mandate to ensure sustainable commercial whale watching. However, Alternative 2 would still lead to more adverse impacts on recreation than Alternatives 3 and 4, given the level of restrictions on CWW. Under Alternative 2:

- *CWW vessels are limited to 3 to 5 in the vicinity of SRKWs:* The average number of CWW vessels in the vicinity of SRKWs is unknown. However, assuming the average number of CWW vessels in the vicinity of orcas (which averaged 5 in 2018-19), is the same average number of CWW vessels in the vicinity of SRKWs, Alternative 2 would reduce the number of CWW vessels able to be in the vicinity of SRKWs by up to two days (0-40%) from the average for the last two years, but would likely represent more reductions on peak viewing days. The reduction of SRKW viewing from CWW vessel limitations is not expected to significantly affect recreation because it is SRKW-specific, a small percentage of tours view SRKWs, and tours would still be able to view other marine life.
- *CWW vessels are limited to spending 16 to 45 minutes in the vicinity of SRKWs:* There is no data available about the average current length of time CWW vessels spend viewing SRKWs or other marine life (including adherence to the Be Whale Wise and PWWA guidelines). The mid-point of this alternative's range (30 minutes) is Be Whale Wise's recommended viewing time limit, as

⁸⁷ Whale Museum, "Responsible Kayaker Code," 1.

well as the maximum time allowed under PWWA guidelines when there are over 9 PWWA vessels in the vicinity of whales. This alternative would only limit the SRKW-viewing portion of a CWW tour, and a very small portion of tours view SRKW, so this is not anticipated to have a significant impact on CWW opportunities.

- *CWW operations are seasonally restricted for 4 to 7 months; this could include limiting CWW operations to 3 to 5 days per week and/or limiting CWW operations to a 4- to 8-hour per day window:* Seasonal restrictions under Alternative 2 may reduce the available days for CWW by approximately 29% (five days per week) to 57% (three days per week). The low end of the seasonal hourly restriction, 4 hours per day, would have similar impacts on CWW operation as Alternative 1 and could limit CWW operators to conducting only one tour option a day. The higher end of the seasonal hourly restriction, 8 hours per day, could accommodate most tours that currently happen during the day. However, CWW activity would likely decrease as a result of the days-per-week restriction and there would be the potential for a more crowded experience for whale watchers. This is anticipated to significantly reduce CWW opportunities when the restrictions apply.
- *SRKW viewing is limited to specific hours of the day, number of days per week, and/or seasons:* Alternative 2 restricts SRKW-viewing opportunities to a 4- to 8-hour window of the day, 3 to 5 days per week. These hourly/day restrictions may apply seasonally, during a 4- to 7-month timeframe. When the restrictions are in place, commercial SRKW-viewing opportunities could be reduced by over 50% (when considering the more restrictive end of the range). Because only about 10% of CWW tours view SRKWs, the limited SRKW viewing is not expected to significantly affect recreation.
- *CWW vessels comply with adaptively managed restricted access areas or no-go zones:* Similar to Alternative 1, Alternative 2 calls for multiple geographic areas, including the current voluntary no-go zone on the west side of San Juan Island, to be closed to CWW when SRKWs are in the vicinity. However, there would be fewer closed areas under Alternative 2 than Alternative 1. The specific effects of Alternative 2 area closures on recreational activity is uncertain; however, given that the geographic areas are dependent on SRKW presence, the impact on CWW opportunities or participant experience is not assumed to be significant.
- *CWW vessels report SRKW location and presence to WDFW when private vessels are in the vicinity of SRKWs:* Alternative 2 reporting requirements are not likely to change the whale watching recreational experience for tour participants.
- *Some or all of KELP best practices are codified:* Codifying some, or all, of the KELP best practices is not anticipated to have much, if any, impact on recreation, given that it already represents best practices to support existing laws. Although compliance with existing best practices cannot be assumed, a key purpose of the KELP best practices is to provide instructions on how to effectively comply with the 2011 federal vessel traffic and distance regulations. The impact of this component is not expected to be significant.

Alternative 3

Alternative 3 could have **less significant adverse impacts** on opportunities to participate in commercial whale watching of all alternatives WDFW is considering other than no action, as it would place less stringent restrictions on CWW. It would likely have more impacts to CWW than the no action alternative

(Alternative 4), but fewer impacts than Alternatives 1 and 2. This alternative would likely meet the legislative mandate in terms of ensuring sustainable commercial whale watching as it would allow the CWWLP to most closely mimic current recreation conditions. However, as noted under “animals” above, make its anticipated benefit to SRKWs much less likely. Under Alternative 3:

- *CWW vessels are limited to 5 to 10 in the vicinity of SRKWs:* The vessel limitations WDFW is considering fall within annual averages for recent years (5-8 from 2010, and 5 in 2018-2019) in this alternative and would therefore have the most effects on limiting vessels on peak viewing days (e.g., in July) when vessel numbers may occasionally exceed this range. As this applies only to SRKW viewing and not all whale watching and falls within average vessel ranges, this is not anticipated to have a significant adverse impact on CWW opportunities.
- *CWW vessels are limited to spending 46 to 60 minutes in the vicinity of SRKWs:* This alternative would only limit the SRKW-viewing portion of a CWW tour, and only a small portion of tours view SRKWs. This range allows more time than the Be Whale Wise’s voluntary recommended viewing time limit (30 minutes) but would be similar to the maximum time allowed under the voluntary PWWA guidelines of 60 minutes when there are fewer than 9 PWWA vessels in the vicinity of whales. There is no data available about the average length of time CWW vessels spend viewing SRKWs or other marine life, so it is difficult to determine how SRKW-viewing time limits may impact recreation. Given that it applies only to SRKW viewing, it is not anticipated to have a significant adverse impact on CWW opportunities.
- *CWW operations would be restricted seasonally for 1 to 3 months; this could include limiting CWW operations to 6 days per week and/or limiting CWW operations to a timeframe that begins 1 to 2 hours after sunrise and 1 to 2 hours before sunset:* Seasonal restrictions under Alternative 3 may reduce the available days for CWW by approximately 14% (1 day). The hourly restriction could likely accommodate nearly all tours that currently occur with the exception of sunrise and sunset tours, which represent a small portion of current CWW activity. This is anticipated to have a small adverse impact on CWW opportunities, much less than the impacts from these components in Alternatives 1 and 2.
- *SRKW viewing is limited to specific hours of the day, number of days per week, and/or seasons:* Alternative 3 restricts SRKW-viewing opportunities to a timeframe that begins one hour after sunrise and ends one hour before sunset, 6 days per week. These hourly/day restrictions may apply seasonally, during a 1- to 3-month timeframe. As these restrictions apply only to SRKW viewing, they are not anticipated to have a significant adverse impact on CWW opportunities.
- *CWW vessels comply with codified no-go zone on the west side of San Juan Island when SRKWs are in the vicinity:* The west side of San Juan Island has long been a voluntary no-go zone for CWW vessels. PWWA and Soundwatch guidelines and best practices request that CWW vessels remain a minimum of one-half mile from the light house at Lime Kiln State Park and one-quarter mile from the main shoreline between Mitchell Point to Cattle Point when SRKW are in the vicinity. Although compliance with existing guidelines cannot be assumed, the restrictions would only apply when SRKWs are present. Given that few CWW tours currently view SRKWs and that this applies to an existing voluntary no-go zone, this restriction is not anticipated to have a significant adverse impact on CWW opportunities or participant experience.

- *CWW vessels report emergency situations to WDFW*: Reporting requirements add an extra responsibility for the CWW operators but are not expected to affect CWW opportunities or participant experience.

Alternative 4: No Action

Under Alternative 4, there would be no change to requirements for CWW and therefore **no impacts** to CWW opportunities or the tour participant experience. This means CWW vessels could operate and view SRKWs during any hours of the day, any days of the week, and any time of year. Existing best practices from PWWA, Soundwatch KELP, and Be Whale Wise would be in place to support CWW operators who choose to implement them.

Summary of Impacts

As described in the Animals and Recreation sections above, the four alternatives have differential impacts on SRKWs and recreation. Alternative 1 would have the highest likelihood of reducing adverse impacts to SRKWs from CWW but would have the most significant adverse impacts on CWW opportunities and participant experience. By contrast, aside from the No Action Alternative, Alternative 3 would have the least likelihood of reducing adverse impacts to SRKWs from CWW and the fewest impacts on CWW opportunities and experiences. Table 2 below summarizes the anticipated significant impacts of the alternatives, key components with the most impacts, and whether the alternatives are anticipated to meet WDFW's mandate. In fulfilling its legislative mandate, WDFW aims to select a final action for the CWWLP that ensures sustainable commercial whale watching practices that reduce daily and cumulative impacts of vessel noise and disturbance to SRKWs so they can effectively forage, rest, and socialize. In evaluating sustainable whale watching, WDFW is considering the impacts to CWW opportunities and participant experiences, as well as the economic viability of commercial whale watching license holders. (The economic viability of CWW license holders, as mentioned earlier, is analyzed separately in the Small Business Economic Impact Analysis which will be considered in the Fish and Wildlife Commission's final action.)

Table 2: Summary of Significant Impacts of Alternatives

| Alternative | Animals (Impacts to SRKWs) | Recreation (Impacts to Recreators and Commercial Whale Watching Opportunities) | Likelihood of Meeting WDFW's Legislative Mandate |
|--------------|--|--|--|
| 1 | Least significant adverse impacts (most benefits for SRKW) due to most restrictive SRKW viewing limitations and broadest area closures | Most significant adverse impacts due to most restrictive day and time limits on CWW operations; Other components are not expected to have a significant impact on CWW opportunities or participant experience | Unlikely as currently constructed; Restrictions on CWW operating days/times would reduce CWW opportunities for recreators the most of any alternative; Alternative 1 has the highest potential to reduce adverse impacts on SRKWs. |
| 2 | Some significant adverse impacts (moderate benefits for SRKW) due to moderate SRKW-viewing limitations and moderate area closures | Some significant adverse impacts due to mid-range day and time limits on CWW operations; Other components are not expected to have a significant impact on CWW opportunities or participant experience | Possibly as currently constructed; Restrictions on CWW operating days/hours would reduce opportunities for recreation, but not as much as Alternative 1; Alternative 2 has less potential to reduce adverse impacts on SRKWs than the restrictions in Alternative 1 |
| 3 | More significant adverse impacts (fewest benefits for SRKW) due to least restrictive SRKW-viewing limitations and fewest area closures | Least significant adverse impacts due to least restrictive day and time limits on CWW operations; Other components are not expected to have a significant impact on CWW opportunities or participant experience | Unlikely as currently constructed; Restrictions may or may not sufficiently reduce adverse impacts to SRKWs, especially given uncertainty and similarity of the alternative to no action |
| 4: No Action | Most significant adverse impacts (no benefits for SRKW) due to unrestricted CWW operation and activity | No impacts to CWW opportunities or participant experience | Does not meet RCW requirements to reduce SRKW impacts |

WDFW will likely need to select components from the multiple alternatives in order to meet its legislative mandate to both support sustainable commercial whale watching and reduce the daily and cumulative impacts on SRKWs from vessel noise and disturbance. For example, removing or using a less restrictive option for the components that limit the days and/or hours for CWW operations will likely be important for ensuring CWW recreational opportunities, while having stricter restrictions on SRKW viewing and vessels will likely be important to reducing noise and disturbance impacts from CWW

vessels to SRKWs. It is difficult to anticipate the extent to which the alternatives will reduce vessel impacts to SRKWs, given the uncertainty of the science and confounding factors, including the effects of vessels that will not be subject to the CWWLP.

Mitigation Measures

Mitigation measures are actions that can reduce or eliminate adverse environmental impacts associated with all alternatives. The intended environmental benefit of the mitigation measures described below is to further decrease the daily and cumulative impacts of vessel noise and disturbance on SRKWs and promote their overall wellbeing, either directly or indirectly. WDFW is considering and may implement the following mitigation measures along with its selected action.

Influence of CWW Vessels on Recreational Boaters

CWW operators could assist WDFW in signaling whale presence to nearby boaters (e.g., by raising a whale warning flag when in the vicinity of whales) and in setting an example for the distance and speed rules to follow when in the vicinity of whales (this is what is industry calls a “sentinel” role). On the other hand, CWW presence may draw boats who otherwise would not travel in the vicinity of SRKWs (this is known as a “magnet” effect). Currently, there is little published empirical evidence of a sentinel or magnet effect of CWW vessels.⁸⁸ If peer-reviewed research indicates that CWW operator presence and/or actions such as using whale warning flags contribute to changes in recreational boater activity that decrease vessel noise and disturbance impacts on orcas (e.g., reducing the number and/or speed of vessels in the vicinity of orcas), then WDFW could consider adjusting CWW vessel limits as part of its adaptive management program.

Role of CWW Vessels in Monitoring and Communicating SRKW Status

CWW operators spend time in the vicinity of SRKWs, are familiar with their behavior patterns, and maintain regular communication with other vessels and the whale-observing community (e.g., WDFW, Soundwatch, or the WhaleReport Alert System, WRAS). Operators can contribute to SRKWs’ overall wellbeing by reporting suspected health or injury concerns; staying with an injured animal; calling WDFW Enforcement to the scene; reporting SRKW location to WRAS or other vessels (e.g., ferries or ships); communicating animal status to researchers. These monitoring and communications activities go beyond the specific reporting requirements that WDFW is considering as part of the DEIS alternatives. Similar to the influence of CWW on recreational vessels, this mitigation measure will be considered as part of WDFW’s adaptive management program and evaluated over time.

Use of AIS on CWW Vessels

An automated identification system is a tracking system that uses transceivers to provide information such as vessel identification, position, course, and speed. The use of AIS on CWW vessels could allow increased enforcement and compliance monitoring of CWW vessels; it could inform WDFW Enforcement on vessel density around SRKWs (AIS only shows vessel activity; it does not track actual whales). These data could help answer many scientific questions on orca movement patterns based on vessel density and movement, and enhance conservation efforts.⁸⁹ Currently, approximately 50% of CWW vessels have

⁸⁸ Washington State Academy of Sciences, “Q&A,” 5.

⁸⁹ Washington State Academy of Sciences, “Summary of Key Research Findings,” 16.

AIS installed per US Coast Guard requirements for vessels 65 ft and above.⁹⁰ WDFW is considering the impacts the use of AIS may have on SRKW management and whether specific AIS requirements, such as requiring installation on CWW vessels or requiring those CWW vessels with AIS installed to use the system, might be part of the CWWLP in the future or not. The economic implications of installing AIS are further explored in the SBEIS.

Education

Education is essential to promoting compliance with any new regulations and achieving a reduction in vessel impacts to the whales. Both voluntary and mandatory programs can create a sense of duty, particularly when education emphasizes the importance of the rules as part of the program.⁹¹ SRKW and other marine mammal education programs already exist and play an integral role in reducing disturbance from all types of vessels. For example, the Soundwatch Boater Education Program and Kayak Education and Leadership Program (KELP) educate boaters on and off the water about the impacts that vessels have on orcas and how to view them responsibly. Two additional education-based mitigation measures are described below:

- *SRKW qualification program for CWW operators:* WDFW is considering establishing an SRKW qualification program for CWW operators who want to view SRKWs. The program would likely require CWW operators to demonstrate knowledge of SRKWs, the impacts of vessels on SRKWs, and information needed to comply with the CWWLP rules (e.g., the ability to identify different orca ecotypes or distinguish between SRKWs and transient orcas). This qualification program could be similar to the training required by Parks Canada for CWW operators and sea kayaking guides to operate in the Saguenay-St. Lawrence Marine Park: CWW operators and guides are required to successfully complete an annual training program that focuses on behaviors that avoid disturbing the marine mammals, such as maintaining appropriate distances, speeds, and observational behaviors.⁹² This training must be successfully completed in order to receive a viewing permit. The SRKW qualification program could also include education to mitigate potential impacts of CWW on SRKWs, such as:
 - Orienting vessels downwind of orcas to minimize impacts from vessel exhaust emissions.
 - Reducing changes in speed, starts, stops, and gear shifts
 - Avoiding “leapfrogging” practices where CWW vessels speed up to position themselves in the path of whales
 - Using slow approaches as CWW vessels are entering and leaving the vicinity of SRKWs to reduce masking of SRKW communication signals
- *SRKW curricula for members of the public and CWW clientele:* WDFW is considering developing SRKW curricula that CWW operators can use with clientele to increase the public’s awareness of SRKWs and topics such as ESA listing, the threats SRKWs face, and what the public can do to contribute to their recovery.

⁹⁰ Kassakian, Ebersole, and Flight “Economic Viability,” 19.

⁹¹ Ferrara, Mongillo, and Barre, “Reducing Disturbance from Vessels,” 7.

⁹² Saguenay-St. Lawrence Marine Park, “Marine Activities in the Saguenay-St. Lawrence Marine Park Regulations.”

Works Cited

- Au, Whitlow W. L., John K. B. Ford, John K. Horne, and Kelly A. Newman Allman. 2004. "Echolocation Signals of Free-Ranging Killer Whales (*Orcinus Orca*) and Modeling of Foraging for Chinook Salmon (*Oncorhynchus Tshawytscha*)." *The Journal of the Acoustical Society of America* 115, no. 2 (2004): 901–9. <https://doi.org/10.1121/1.1642628>.
- Be Whale Wise. "Marine Wildlife Guidelines." Accessed August 2020. <https://www.bewhalewise.org/marine-wildlife-guidelines>.
- Bigg M.A., Olesiuk P.F., Ellis G.M., Ford J.K.B, Balcomb K.C. III. 1990. "Social organization and genealogy of resident killer whales (*Orcinus orca*) in the coastal waters of British Columbia and Washington State." Report of the International Whaling Commission Special Issue 12:383–405.
- Commercial Whale Watching Licensing Program Advisory Committee, "CWWLP Advisory Committee Draft Charter and Rules." Accessed July 2020. https://wdfw.wa.gov/sites/default/files/about/advisory/CWWLP/cwwlp_charter_20190416_final.pdf.
- Ferrara, G.A., T.M. Mongillo, and L.M. Barre. 2017. "Reducing Disturbance from Vessels to Southern Resident Killer Whales: Assessing the Effectiveness of the 2011 Federal Regulations in Advancing Recovery Goals." NOAA Technical Memorandum NMFSOPR-58. Accessed July 2020. <https://repository.library.noaa.gov/view/noaa/17432>.
- Fisheries and Oceans Canada. "Killer Whale (Northeast Pacific Northern Resident Population)." Accessed August 2020. <https://www.dfo-mpo.gc.ca/species-especies/profiles-profil/killerWhaleNorth-PAC-NE-epaulardnord-eng.html>
- Ford, J.K.B., and Graeme M. Ellis. 2014. "You Are What You Eat: Foraging Specializations and Their Influence on the Social Organization and Behavior of Killer Whales." *Primates and Cetaceans Primatology Monographs*: 75–98. https://doi.org/10.1007/978-4-431-54523-1_4.
- Ford, J.K.B., Ellis, G.M., Barrett-Lennard, L.G., Morton, A.B., Palm, R.S., and Balcomb, K.C. III. 1998. "Dietary specialization in two sympatric populations of killer whales (*Orcinus orca*) in coastal British Columbia and adjacent waters." *Canadian Journal of Zoology* 76: 1456-1471. <https://doi.org/10.1139/z98-089>.
- Ford, J.K.B., Pilkington, J.F., Reira, A., Otsuki, M., Gisborne, B., Abernethy, R.M., Stredulinsky, E.H., Towers, J.R., and Ellis, G.M. 2017. "Habitats of Special Importance to Resident Killer Whales (*Orcinus orca*) off the West Coast of Canada." *DFO Can. Sci. Advis. Sec. Res. Doc.* 2017/035. viii + 57 p.
- Hauser, D. D. W., Logsdon, M. G., Holmes, E. E., VanBlaricom, G. R., & Osborne, R. W. 2007. "Summer distribution patterns of southern resident killer whales (*Orcinus orca*): Evidence of core areas and spatial segregation of social groups." *Marine Ecology Progress Series* 351, 301-310. <https://doi.org/10.3354/meps07117>.

- Kassakian, J., Ebersole, J., and Flight, M. "Economic Viability of Commercial Whale Watching License Holders." Draft Memorandum, June 2020, 1-45. <https://wdfw.wa.gov/sites/default/files/2020-09/finalviabilityanalysis082020.pdf>.
- Krahn, M.M., Wade, P.R., Kalinowski, S.T., Dahlheim, M.E., Taylor, B.L., Hanson, M.B., Ylitalo, G.M., Angliss, R.P., Stein, J.E. & Waples, R.S. 2002. "Status review of southern resident killer whales (*Orcinus orca*) under the Endangered Species Act." NOAA Technical Memorandum NMFS-NWFSC-54. Seattle: US Department of Commerce. Accessed July 2020. <https://repository.library.noaa.gov/view/noaa/3332>.
- Lacy, R. C., Williams R., Ashe E., Balcomb III K.C., Brent L.J., Clark C.W., Croft D.P., Giles D.A., Macduffee M., and Paquet P.C. 2017. "Evaluating Anthropogenic Threats to Endangered Killer Whales to Inform Effective Recovery Plans." *Scientific Reports* 7, no. 1. <https://doi.org/10.1038/s41598-017-14471-0>.
- National Marine Fisheries Service. 2008. "Recovery Plan for Southern Resident Killer Whales (*Orcinus Orca*)." National Marine Fisheries Service, Northwest Region, Seattle, Accessed July 2020. <https://repository.library.noaa.gov/view/noaa/15975>.
- Noren D.P. and Hauser, D.D.W. 2016. "Surface-based observations can be used to assess behavior and fine-scale habitat use by an endangered killer whale (*Orcinus orca*) population." *Aquatic Mammals* 42:168-183. <https://doi.org/10.1578/am.42.2.2016.168>.
- Olson, J. K., Wood, J., Osborne, R. W., Barrett-Lennard, L., & Larson, S. 2018. "Sightings of southern resident killer whales in the Salish Sea 1976–2014: the importance of a long-term opportunistic dataset." *Endangered Species Research*, 37, 105-118. <https://doi.org/10.3354/esr00918>.
- Pacific Whale Watch Association. "Southern Resident Killer Whale Recovery 2019 Report and Policy Recommendations." 2020.
- Pacific Whale Watch Association. "PWWA Voluntary Guidelines." Revised June 2019. <https://www.pacificwhalewatchassociation.com/guidelines>.
- Purce, L., and Solien, S. "Southern Resident Orca Task Force Final Report and Recommendations." 2019. https://www.governor.wa.gov/sites/default/files/OrcaTaskForce_FinalReportandRecommendations_11.07.19.pdf.
- Shedd, T., Northey, A., Newely J., Casellas, E., McCaughey, E., and Wold, K. "2019 Soundwatch Program Annual Contract Report." The Whale Museum, Friday Harbor, WA. (2019):1-75. https://cdn.shopify.com/s/files/1/0249/1083/files/2019_Soundwatch_Program_Annual_Contract_Report.pdf?v=1589558377.
- Saguenay-St. Lawrence Marine Parks. "Marine Activities in the Saguenay-St. Lawrence Marine Park Regulations." Accessed September 2020. parcmarin.qc.ca/wp-content/uploads/2019/03/D%C3%A9pliant-anglais.pdf.
- US Department of the Interior. "What is Adaptive Management?" Accessed July 2020. <https://www.doi.gov/sites/doi.gov/files/migrated/ppa/upload/Chapter1.pdf>.

- Van Deren, M., Mojica, J., Martin, J., Armistead, C., and Koefod, C. 2019. "The Whales in Our Waters: The Economic Benefits of Whale Watching in San Juan County." *Earth Economics*, 1-35. https://www.eartheconomics.org/s/SRKW_EarthEconomics_Jan2019-Digital-954m.pdf.
- Washington State Academy of Sciences, Committee on Underwater Acoustics and Disturbance. "Q&A Prepared for the WDFW Advisory Committee." Seattle, WA: WSAS, 1-12. June 2020. https://wdfw.wa.gov/sites/default/files/about/advisory/CWWLP/wsas_qa_final_to_advisory_committee_2020-06-08.pdf.
- Washington State Academy of Sciences, Committee on Underwater Acoustics and Disturbance. "Review of Proposed Rules for Commercial Whale Watching Licensing Program." Seattle, WA: WSAS, 1-9. July 2020.
- Washington State Academy of Sciences, Committee on Underwater Acoustics and Disturbance. "Summary of Key Research Findings about Underwater Noise and Vessel Disturbance." Seattle, WA: WSAS, 1-25. August 2020.
- Washington State Department of Ecology. "State Environmental Policy Act Handbook." Last modified 2018. <https://ecology.wa.gov/Asset-Collections/Doc-Assets/Regulations-Permits/Environmental-review/2018-SEPA-Handbook>.
- Whale Museum. "Soundwatch Boater Education Program" Accessed July 2020. <https://whalemuseum.org/pages/soundwatch-boater-education-program>.
- Whale Museum, Soundwatch Boater Education Program, Kayak Education Leadership Program (KELP), "Responsible Kayaker Code," 2011. https://cdn.shopify.com/s/files/1/0249/1083/files/KELP_brochure_2011R.pdf?6603.
- Williams, R., and Ashe, E. 2007. "Killer whale evasive tactics vary with boat number." *Journal of Zoology* 272, no. 4: 390-397. <https://doi.org/10.1111/j.1469-7998.2006.00280.x>.
- Williams, R., Trites, A., and Bain, D. 2002. "Behavioral responses of killer whales (*Orcinus Orca*) to whale watching boats: opportunistic observations and experimental approaches." *Journal of Zoology* 256: 255-270. <https://doi.org/10.1017/S0952836902000298>.

Appendix A: Reference Legislation (RCW 77.65.620)

The reference legislation authorizing WDFW to adopt rules for commercial whale watching licenses is 77.65.620 of the Revised Code of Washington; the full text is as follows.

RCW 77.65.620

Commercial whale watching license—Adoption of rules—Analysis and report to the governor and the legislature—Definitions.

(1) The department must adopt rules for holders of a commercial whale watching license established in RCW 77.65.615 for the viewing of southern resident orca whales for the inland waters of Washington by January 1, 2021. The rules must be designed to reduce the daily and cumulative impacts on southern resident orca whales and consider the economic viability of license holders. The department shall at a minimum consider protections for southern resident orca whales by establishing limitations on:

- (a) The number of commercial whale watching operators that may view southern resident orca whales at one time;
- (b) The number of days and hours that commercial whale watching operators can operate;
- (c) The duration spent in the vicinity of southern resident orca whales; and
- (d) The areas in which commercial whale watching operators may operate.

(2) The department may phase in requirements but must adopt rules to implement this section. The department may consider the use of an automatic identification system to enable effective monitoring and compliance.

(3) The department may phase in requirements, but must adopt rules pursuant to chapter 34.05 RCW to implement this section including public, industry, and interested party involvement.

(4) Before January 1, 2021, the department shall convene an independent panel of scientists to review the current body of best available science regarding impacts to southern resident orcas by small vessels and commercial whale watching due to disturbance and noise. The department must use the best available science in the establishment of the southern resident orca whale watching rules and continue to adaptively manage the program using the most current and best available science.

(5) The department shall complete an analysis and report to the governor and the legislature on the effectiveness of and any recommendations for changes to the whale watching rules, license fee structure, and approach distance rules by November 30, 2022, and every two years thereafter until 2026. This report must be in compliance with RCW 43.01.036.

(6) The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

(a) "Commercial whale watching" has the same meaning as defined in RCW 77.65.615.

(b) "Commercial whale watching operators" has the same meaning as defined in RCW 77.65.615.

(c) "Inland waters of Washington" means Puget Sound and related inland marine waters, including all salt waters of the state of Washington inside the international boundary line between Washington and British Columbia, and lying east of the junction of the Pacific Ocean and the Strait of Juan de Fuca, and the rivers and streams draining to Puget Sound as mapped by water resource inventory areas 1 through 19 in WAC 173-500-040 as it exists on July 1, 2007.

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Appendix B: Committees Providing Input to WDFW on the CWWLP Rules

The following committees are providing input to WDFW in developing the CWWLP rules.

Commercial Whale Watching Licensing Program Advisory Committee

Shane Aggergaard
Island Adventures

Nora Nickum
Seattle Aquarium

Rein Attemann
Washington Environmental Council

Lovel Pratt
Friends of the San Juans

Jeff Friedman
Pacific Whale Watch Association

Ivan Reiff
Western Prince Cruises Inc.

Cindy Hansen
Orca Network

Joe Scordino
Retired, former NOAA Deputy Regional Administrator

Michael Jasny
NRDC

Taylor Shedd
The Whale Museum

Tom Murphy
Outdoor Odysseys

Intergovernmental Coordination Group

The intergovernmental coordination group was comprised of state, tribal, federal, and local governmental representatives: This group discussed the implementability of options explored by the Advisory Committee and provided information to the Advisory Committee process at several touch points. This group had shorter meetings held approximately bi-weekly from December 2019 through April 2020 and as needed thereafter through the finalization and initial implementation of the rules.

Washington State Academy of Sciences Independent Science Panel: WSAS Committee for Underwater Acoustics and Disturbance

Dr. Peter Dahl
Senior Principal Engineer, Acoustics Department, Applied Physics Laboratory; Professor Mechanical Engineering, University of Washington

Dr. David Lusseau
Professor, School of Biological Sciences, University of Aberdeen

Dr. Marla Holt
Research Wildlife Biologist, National Oceanic and Atmospheric Administration (NOAA) Fisheries

Dr. Dawn Noren
Research Fish Biologist, Conservation Biology Division, NOAA

Dr. Susan Parks
Associate Professor, Biology, Syracuse University

Dr. Ron Thom
*Staff Scientists Emeritus, Coastal Sciences
Division, Pacific Northwest National Laboratory*

Dr. Dom Tollit
Senior Research Scientist, SMRU Consulting

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Appendix C: CWWLP Advisory Committee Proposals L and J

The CWWLP Advisory Committee prepared two proposals for WDFW to consider for the CWWLP rulemaking. These proposals, labeled Proposal L and Proposal J, are included in this Appendix below.

Proposal L

OVERVIEW

This proposal temporarily allows no commercial whale watch (CWW) vessel to approach within one-half nautical miles of a group of southern resident orcas, with a single exception described below that would apply in the absence of enforcement and Soundwatch vessels. It represents a substantial compromise from our original proposal, given that the science and the precautionary approach otherwise dictate that we eliminate every possible CWW vessel interaction with the southern residents. We have proposed a limited exception given the possibility that it may provide a net benefit for the whales, and believe that any additional allowance of commercial whale-watching would be inconsistent with both the precautionary approach and the best available science. As explained in the “Justification and Discussion” section below, our proposal is also consistent with the State’s economic viability analysis and with the recent analysis of vessel behavior conducted by Todd Hass.

Requirements related to number of motorized CWW vessels and hours:

- This proposal prohibits licensed commercial whale watch operators from viewing southern resident orcas until such time that the population shows signs of recovery and a precautionary approach determines that an incremental increase in the number of commercial whale watch boats that view southern resident orcas will not cause adverse impacts.
- This proposal also includes an exception, only between 10:00 am and one hour before sunset, that allows one commercial whale watch vessel to approach within one-half nautical miles of a group of southern resident orcas, only if neither Soundwatch nor WDFW enforcement vessel is present, in order to 1) confirm the presence of southern resident orcas; 2) provide immediate notifications about their presence to WDFW, Soundwatch, and the Whale Report Alert System (WRAS), and 3) alert vessel operators (e.g., commercial, recreational, ferries, Navy) in the vicinity of the southern resident orcas’ presence.

Requirements related to kayaks:

- Under this proposal, kayak operators would be treated differently, given the lesser mobility of kayak operators and the opportunistic nature of their whale-watching.
- For license holders that are kayak tour operators, this proposal codifies best practices of the Kayak Education Leadership Program (KELP).

Additional requirements where we understand there to be consensus:

- Codifies the existing voluntary no-go zone on the west side of San Juan Island.
- Requires AIS on all motorized CWW boats, deferred until Jan. 1, 2023 due to the economic impacts of COVID-19.
- Prohibits CWW vessels from approaching SRKW within ½ nm in low-visibility conditions, including fog, regardless of the one license holder motorized vessel exception.

Adaptive management:

- WDFW is authorized to make changes to the number of CWW boats viewing southern resident orcas based on their population equaling or exceeding 84 whales, not including calves under two years of age.
- Authorizes WDFW, per best available science, to amend the boundaries of the San Juan Island no-go zone and/or designate additional no-go zones, provided that there is no evidence of adverse impacts to economic viability and provided that the USCG confirms the safety of the amended or new no-go zone boundaries per the Cooperative Vessel Traffic Service.

Additional proposals outside the core scope of the rulemaking:

- WDFW should develop civil enforcement options.
- Waive license fees for the first 2 years due to the economic impacts of COVID-19.
- As best practices and control technologies are identified for the quieting of underwater noise from small vessels, require and incentivize (via discounted license fees) transitions to quieter vessel designs and commercial-off-the-shelf technology (e.g., echosounders, propulsion systems) to reduce underwater noise.
- PWWA allows the BC Cetacean Sightings Network to grant DFW enforcement and Soundwatch access to WRAS sightings data, including PWWA reports.

JUSTIFICATION AND DISCUSSION

We have proposed allowing zero commercial boats to view the southern residents until the population has experienced some meaningful recovery, with the sole exception (described below) where a single vessel could provide a notification benefit in the absence of WDFW enforcement and Soundwatch. This exception represents a significant compromise from our original proposal.

Fundamentally, our proposal is based on the critical status of the southern resident orca population and the best available science indicating that:

1. the precarious status and dramatic decline of southern resident orcas necessitates a precautionary approach to any allowance for disturbing southern resident orcas; and,
2. vessel acoustics and presence adversely impact southern resident orcas' socializing and foraging effectiveness, and that small vessels at 300/400 meters and beyond can adversely affect southern resident orcas' foraging behavior.

As the WSAS science panel has noted, fewer vessels around whales is better for the whales, and reducing masking effects and behavioral disturbance from vessels is important for maximizing the whales' foraging opportunities. A precautionary approach to management dictates that we eliminate every possible interaction of CWW vessels with southern residents until the population recovers.

A suspension of viewing southern resident orcas would NOT negatively impact the economic viability of commercial whale watch operators, according to the recent Industrial Economics, Inc. analysis commissioned by the State. This conclusion reflects the facts that viewing of southern resident orcas occurs in only 10% of the industry's tours, and that sustainable whale-watching can be conducted instead on other available species and populations, including transient killer whales, humpback whales, minke whales, and gray whales. The Industrial Economics, Inc. analysis further documents that Canadian members of the PWWA experienced an *increase* in ridership and associated economic benefits "following signature of an agreement that members would refrain from offering tours to view SRKW," even as U.S. members experienced a 5.6 to 11 percent decline due to negative public perception of their impacts on southern residents:

As previously noted, the PWWA reports that U.S. ridership declined between 2018 and 2019. Specifically, San Juan County-based PWWA members experienced a 5.6 percent decline in ridership during that period, while members on the mainland experienced an 11 percent decline. During the same period, however, Canadian PWWA members saw a 7.6 percent increase in ridership. PWWA representatives attribute the incongruent experience between U.S.- and Canada-based firms on the period of intense U.S. media attention surrounding the decline of SRKW generally, and the death of a J-pod calf that occurred at that time, as well as the establishment of the [Washington State Orca] Task Force. Although not conclusively linked, these results suggest the potential that and likelihood of participating in a whale watching trip may be affected public perception of the whale watch industry in general and its potential effects on the SRKW population. However, they also suggest that the industry has been able to maintain viability despite that level of reduction in ridership. Additionally, the 7.6 percent rise in ridership experienced by Canadian PWWA members occurred following signature of an agreement that members would refrain from offering tours to view SRKW, further suggesting that the industry's ability to adapt to limitations on SRKW viewing while maintaining viability." (Economic Viability of Commercial Whale Watching License Holders at 39-40.)

This recent history suggests that a suspension of commercial viewing of southern residents, if properly communicated and supported by the environmental community, could have a net economic *benefit* for the industry. In any case, the suspension we have proposed would not affect the industry's economic viability, and, with the 1-boat exception for notification purposes, can explicitly support positive publicity and financial growth.

The PWWA has argued that commercial viewing of southern residents should be allowed in light of industry's "sentinel effect." As the Science Panel has noted, however, there is little empirical evidence of that effect. The recent analysis of 2019, by Todd Hass, does not show that boater violations decrease when commercial whale-watch vessels are present. On the contrary, it suggests that boater incidents increase with one or two additional whale-flag vessels on the scene, and then decrease, as further flag vessels are added, to a baseline that is no better than the incident rate that occurs with only the Soundwatch boat present. By contrast, analysis of five years of Soundwatch data indicates that the presence of WDFW enforcement vessels around the southern residents substantially reduces incident rates. There is no empirical evidence on which to base a sentinel effect or any benefit for the population from CWW presence when Soundwatch or enforcement vessels are present.

For these reasons, commercial viewing on southern residents should be suspended until such time as the whales have experienced some recovery; indeed, we believe that a temporary suspension is the only responsible policy consistent with a precautionary approach. If any viewing is allowed, we believe it should be strictly limited to situations where Soundwatch and WDFW vessels are not present and where a single commercial vessel could potentially provide a net benefit to the southern residents via notification and alerting enforcement, Soundwatch, ships (via the WRAS), and the Navy to the presence of the whales. Consistent with this, our proposal would allow the viewing of southern residents for a limited time, by a single commercial vessel, under those circumstances, for the purposes of notifying those entities, and of flying the whale-warning flag until an enforcement or Soundwatch vessel arrives. The exception would be limited to a single CWW vessel within ½ nm of a group of southern resident orcas as defined by a matriline or pod so long as pods or multiple matriline are separated by at least one-half nautical mile. In the absence of committed resources for full WDFW monitoring, we are proposing this compromise, tailored to allow only one vessel on scene and to avoid extensive and continuous CWW presence.

This aspect of our proposal is informed by Todd Hass’s updated analysis and further conversations with fellow Advisory Committee members. We believe it eliminates the industry’s concern about negative publicity from a pure zero-boat suspension with no exceptions, and lends itself to more nuanced and positive publicity about protections for the endangered orcas and the industry’s role in those protections. It is clear, from our understanding of public sentiment and as documented by the 2019 U.S. CWW decrease in ridership, that any proposal that would allow more extensive commercial whale-watching on southern residents would receive strong public opposition and not generate a shift in publicity.

We have proposed conditioning the suspension of commercial viewing of southern residents on the abundance of the population, using the target of 84 whales, exclusive of calves (given their low recruitment rates), as recommended by the State’s Orca Task Force. As stated by the WSAS science panel (Q10), “Adaptive management plans can stipulate changes in the plan based on changes in population status over time.” While population abundance is not an appropriate measure of the success of the whale-watch licensing program, given the number of confounding factors that are driving abundance, we believe that metrics related to demographics, such as abundance and growth rates, are appropriate basic measures of a population’s recovery and, by extension, of its resilience to stressors. By contrast, we do not believe it would be appropriate or precautionary to use the indirect metric of annual fish counts from a single hatchery, given the abstraction of that metric from the conservation status and recovery of the population. We have specifically asked the Science Panel to provide additional guidance on this issue.

We have significantly modified our proposal to address concerns voiced by the whale-watching representatives at our last Advisory Committee meeting and in our subsequent discussions. Specifically:

- We have changed from allowing 0 motorized commercial whale-watching boats to view southern resident orcas, to allowing a 1-boat exception in certain specific circumstances when WDFW enforcement and Soundwatch are not on scene.
- We have changed the hour-of-day restriction from 9am-5pm or 10am-6 pm to 10am-1 hour before sunset, to reflect input from PWWA as well as to enable the 1 boat allowed to approach southern residents in the absence of WDFW and Soundwatch to serve a notification function. This is a compromise that we are willing to make **only if** the final rule limits viewing to a single boat under the specified circumstances.
- We have changed from requiring AIS immediately to requiring AIS as of 2023, to reflect the findings of the economic viability analysis as well as input from Jeff during discussions last week.

Two sticking points prevented full Advisory Committee consensus in the creation of this proposal:

- PWWA has said that a limit of 1 boat would create competition between PWWA members in viewing the southern resident orcas. We believe this is a problem that could effectively be solved within PWWA given what we have heard about how closely they collaborate. We also do not see a significant difference between the competition that could occur as a result of a 1-boat limit vs. a 2- or 3- boat limit.
- PWWA has said that the reporting responsibilities will be difficult for boat captains, if only 1 boat can be on scene, because they already multitask so much. We believe these responsibilities are manageable because most of the required reporting is comprised of actions that PWWA says its members do already, often when only 1 boat is present. We also see that more flag-flying/CWW boats results in more recreational boater incidents (per Todd Hass’s analysis) and is significantly more likely to bring vessel disturbance to a level that disrupts foraging, and we don’t believe any added reporting capacity from more boats would outweigh those serious drawbacks. We also recognize that this proposal can only address CWW vessels; however,

recreational vessels must also be included in the evaluation of impacts from the total number of vessels in the vicinity of SRKW. Finally, PWWA captains may opt out of viewing as the single on-scene vessel if they do not feel they have the capacity to undertake the required notifications.

Finally, our proposal is consistent with our legislative mandate. Our interpretation of the intent of the legislation in saying “reduce the daily and cumulative impacts on southern resident orcas and consider the economic viability of license holders” is that we must:

- Apply a precautionary management approach, per the WSAS science panel, and reduce daily and cumulative impacts to the *greatest possible degree* within our scope and without damaging economic viability of the industry.
- Reduce daily and cumulative impacts to a degree that is *meaningful and significant* for the southern resident orcas, not just to any degree.
- “Reduce the impacts of vessel noise and disturbance *so whales can effectively forage, rest, and socialize,*” per our charter.
- Reduce impacts from a 2019 baseline, when the legislation was passed, not an earlier baseline; and on top of the new speed and distance regulations, as the legislature clearly framed the license program as an additional measure that would have new rules for license-holders.
- Consider the economic viability of license holders, which we have done by deferring the implementation date for AIS (per the Industrial Economics, Inc. analysis).

In summary, this proposal is founded on the precautionary management approach, as recommended by the WSAS science panel, and it is consistent with the economic viability analysis findings and the new analysis of vessel behavior from Todd Hass.

PROPOSED RULE

RCW 77.65.XXX

Commercial Whale Watch License Holder Requirements

(1). **General.** Except as provided herein, it is unlawful for a license holder to take passengers to view southern resident orcas or cause a motorized vessel to approach within one-half nautical mile of a group of southern resident orcas (as defined in section (7)(a)) .

(a) Any orca that cannot be definitively identified shall be assumed to be a southern resident orca.

(2) WDFW Authority and Requirements.

(a) WDFW is required to make a determination on the viewing of southern resident orcas each year based on best available science on population abundance and health, subject to the following requirements:

(i) WDFW shall not allow the viewing of southern resident orcas beyond the one license holder motorized vessel exception set forth in section (3) unless the population abundance of southern resident orcas equals or exceeds 84 whales, not including calves under two years of age;

(ii) If the best available science demonstrates that the southern resident orca population is recovering, WDFW is authorized to incrementally allow limited commercial whale watch operations within the following parameters to minimize impacts on southern resident orcas as adaptive management triggers are reached, accompanied by monitoring:

(A) Additional motorized commercial whale-watching vessels beyond the 1-boat exception allowed in the initial rules may only be authorized within one-half

nautical mile of southern resident orcas in locations where a Soundwatch or WDFW vessel are in the same area at the same time (within one-half nautical mile of southern resident orcas), and with the number informed by the best available science.

(B) Viewing time shall be limited per license holder per day and only allowed between 10am and 6pm.

(C) Viewing shall be further limited to alternating days, hours, or times of day (morning/afternoon) to minimize continuous vessel effects and/or allow for research on vessel effects on southern resident orcas.

(D) Additional requirements outlined in Section 3 and Section 6 (a), (b), (d), (e), (f), shall apply.

(iii) If, at any time, the population abundance of southern resident orcas falls below 84 whales, any allowance granted under subsection (ii) of this section is immediately suspended.

(b) WDFW is authorized, based on best available science, to issue emergency rules at any time in regard to one or all southern resident orcas in response to acute events, including but not limited to injury or indications of malnourishment or illness.

(c) WDFW shall regularly review all available data for purposes of evaluating compliance with sections (3) and (4) to determine whether any modifications are needed.

(3) **One license holder motorized vessel exception.** A license holder operating a motorized vessel is allowed to approach within one-half nautical mile of a group of southern resident orcas (as defined in section (7)(a)), up to the distances allowed by law or regulation, only if neither Soundwatch nor a WDFW enforcement vessel is present, in order to provide notifications and alert area boaters of the southern resident orcas' presence.

(a) Only one license holder motorized vessel is permitted within one-half nautical mile of a group of southern resident orcas pursuant to this exception, and only if WDFW enforcement and/or Soundwatch vessels are not present.

(b) The one license holder motorized vessel exception applies only from 10 am to one hour before sunset.

(c) Upon identifying the whales as southern resident orcas, the license holder shall immediately:

(i) Notify WDFW enforcement and Soundwatch and remain on scene until WDFW enforcement or Soundwatch arrives, whereupon the license holder must immediately depart;

(ii) Raise the whale warning flag and to the extent possible alert vessels in the vicinity to the presence of southern resident orcas, with the purpose of reducing interactions with the whales;

(iii) Report the location of the southern resident orca(s) using the Whale Report Alert System (WRAS) and any other whale-reporting tool designated by WDFW; and

(iv) Notify Washington State Ferries and any other state and/or federal entities as appropriate.

(d) WDFW, in consultation with CWW operators, shall issue a protocol for carrying out the required notifications in (3)(c) to enable consistent, safe, and effective response; and may revise this protocol as it deems necessary for such purpose.

(e) If the license holder on-scene is unable to remain with the group of southern resident orcas, and neither Soundwatch nor a WDFW enforcement vessel has arrived, another license holder or another motorized vessel belonging to the same license holder may assume the one license holder motorized vessel exception, pursuant to all the requirements set forth in this rule. In addition, the following conditions apply:

- (i) Only one motorized vessel may wait to replace the license holder on-scene, and it will time its arrival in communication with the on-scene vessel operator to keep the waiting period to a minimum.
 - (ii) The replacement vessel must wait at least one-half nautical mile from the group of southern resident orcas and may approach within one-half nautical mile only when the first-on-scene license holder begins its departure.
 - (iii) In assuming the on-scene role, this vessel must remain on scene for at least 45 minutes or until a Soundwatch or WDFW vessel arrives.
- (f) WDFW shall eliminate the exception set forth in this section if it determines, based on monitoring and adaptive management requirements under subsection (2)(b) and (7)(a) and the best available scientific information, that it does not provide a net benefit to southern resident orca whales.

(4) **Kayak tour operations.** License holders of kayak tour operations must require kayakers in their tour groups to maintain the required distances from southern resident orcas and prevent kayakers in their tour groups from disturbing southern resident orcas. All kayakers in license holder tour groups must adhere to the following requirements:

- (a) Kayakers must not be launched from shore until kayakers can maintain 300 yards (400 front and back) from any southern resident orcas in the vicinity.
- (b) To avoid being in the path of southern resident orcas, kayakers will start moving out of the path of on-coming whales well before the whales are within 400 yards.
- (c) If orcas are approaching within 200 yards of shore, inshore kayakers will move in as close to shore as possible (ideally in kelp beds), secure themselves, raft up and stop paddling until the whales have passed by.

(5) **Closed Areas**

- (a) The following critical foraging and socializing habitat for southern resident orcas are closed to license holders' motorized vessels until such time that it is determined by WDFW that motorized commercial whale watch vessels would have no adverse impact on southern resident orcas' foraging and socializing success.
 - (i) The no-go zone located on the west side of San Juan Island, including from Mitchell Bay in the north to Cattle Point in the south, extending a quarter-mile offshore for the entire stretch. In an area around the Lime Kiln Lighthouse, the no-go zone extends offshore for half a mile. License holders of kayak tour operations must keep all kayakers within 100 yards of shore when transiting the no-go zone off the west side of San Juan Island, except when safety conditions preclude that.
- (b) WDFW shall amend the boundaries of the no-go zone on the west side of San Juan Island based on [wording to be provided by SJC] provided that the USCG confirms the safety of the amended no-go zone(s) boundaries per the Cooperative Vessel Traffic Service.
- (c) Periodically, and at intervals no greater than two years, WDFW will review the best available science to identify other important foraging areas for southern resident orcas throughout the inland waters of Washington state, and will close such areas to license holders motorized vessels provided that there is no evidence of impacts to economic viability of the CWW industry and that the USCG confirms the safety of the no-go zone(s) boundaries per the Cooperative Vessel Traffic Service.

(6) **Additional requirements that apply to all sections of this rule.**

- (a) As of January 1, 2023, an automatic identification system (AIS) transponder must be fitted aboard all motorized commercial whale watch vessels. The AIS must be capable of providing information about the vessel (including the vessel's identity, type, position, course, speed, and

navigational status) to state and federal authorities automatically. Vessels fitted with AIS will maintain the AIS in operation at all times that the vessel is in operation or under sail.

- (b) All license holders' motorized boats must comply with the Puget Sound Harbor Safety Committee's Echosounder Standard of Care.
- (c) License holders must not market trips for viewing southern resident orcas.
- (d) All license holders on motorized vessels must have a WDFW endorsement if they view, or plan to view, southern resident orcas. Whale-watching endorsements require passing an online exam administered by WDFW which covers 1) the ability to distinguish among killer whale ecotypes, 2) the ability to estimate distances on the water, 3) status of southern resident orcas and other marine mammals, 4) impacts of vessel noise and disturbance on marine mammals, 5) the duties of the first-on-scene one commercial whale watch boat exception pursuant to these regulations and any protocols adopted hereunder, and 6) any other topic prescribed by WDFW. WDFW will develop its endorsement requirements and exam in consultation with commercial whale watch operators and whale scientists. Endorsements shall be renewed at least once every three years or when changes to these regulations occur.
- (e) In low-visibility conditions, including fog, license holders are prohibited from causing a motorized vessel to approach southern resident orcas within one-half nautical mile regardless of the one license holder motorized vessel exception set forth in this section.
- (f) Licensed motorized vessels operating pursuant to the exception set forth in this section shall remain downwind from southern resident orcas to reduce vessel exhaust, if it is safe to do so.

(7) **Definitions.** The definitions in this subsection apply throughout this section unless the context clearly requires otherwise.

- (a) A group of southern resident orcas is defined as:
 - (i) A pod (J, K, or L) so long as two or more pods are separated by at least one-half nautical mile; or
 - (ii) A matriline so long as multiple matriline are separated by at least one-half nautical mile.

Additional proposals outside the core scope of the rulemaking

- WDFW should develop civil enforcement options.
- Waive license fees for the first 2 years due to the economic impacts of COVID-19.
- As best practices and control technologies are identified for the quieting of underwater noise from small vessels, require and incentivize (via discounted license fees) transitions to quieter vessel designs and commercial-off-the-shelf technology (e.g., echosounders, propulsion systems) to reduce underwater noise.
- PWWA to allow the BC Cetacean Sightings Network to grant WDFW enforcement and Soundwatch access to the WRAS reports, including all reports submitted by PWWA.

Follow-up questions to WSAS

1. What is the WSAS panel's interpretation of Todd Hass's analysis of the purported "sentinel effect" for CWW? Does the analysis indicate the potential for a "magnet" effect, where the presence of a CWW or flag vessel attracted recreational boaters? Does the analysis provide any justification for allowing CWW on southern residents, in order to fulfill a "sentinel role," when WDFW enforcement or Soundwatch vessels are present? Does the statistical analysis appropriately take into account all the variables, including variability of CWW vessels, recreational vessels, enforcement vessels, and infractions?
2. What triggers for relaxing or tightening limits on commercial viewing of southern residents are most appropriate to a precautionary approach to management?

3. Is the $\frac{1}{4}$ mile no-go zone distance off the west side of San Juan Island scientifically beneficial to the SRKW, or does it need to be expanded (e.g., to $\frac{1}{2}$ mile)?

DRAFT

Proposal J

The following proposal is being submitted as suggested rules under the Washington state commercial whale watching licensing program. The suggestions below apply to viewing SRKWs only, as specifically outlined in the related legislation.

The rules for viewing SRKWs outlined below, along with updated 2019 regulations and professional whale watching guidelines, represent a dramatic shift in viewing SRKWs compared to the time period prior to the implementation of the first federal regulations in 2011. The combination of these proposed licensing rules around viewing SRKWs, existing regulations, and guidelines will achieve the goal of reducing potential vessel impacts and will also enable policy makers to effectively manage professional whale watching of SRKWs.

Justification

Sentinel Role of Professional Whale Watchers

Professional whale watch boats provide a sentinel role for recreational boats by modeling appropriate distance, speed and behavior and by *proactively* contacting private boaters, ferries, commercial shipping and military vessels to warn them of the presence of Southern Resident orcas.

Some of this sentinel effect is documented by Soundwatch data, and additional documentation has been provided by observers watching from shore (see attachment). PWWA has initiated data collection on the sentinel actions starting in 2020. As sentinels, members of the Pacific Whale Watch Association are able to help mitigate and decrease noise and disturbance from other vessels on the water and decrease the likelihood of a tragic boat strike. This sentinel effect offers a net positive in reducing potential vessel impacts.

It is also important to note that Soundwatch and DFW cannot be everywhere at once, especially with the increasing widespread distribution of SRKWs as they travel and forage. With the spread of different groups of SRKWs, licensed professional whale watch vessels enhance the presence of enforcement and monitoring vessels. Operating at approach distances of 300 yards and slow speeds allow professional vessels to mitigate their own potential impacts while also serving to mitigate the greater potential impacts of high speed, unaware vessels.

Research Contribution from Professional Whale Watchers

In addition to providing a sentinel role, professional whale watch operators are an important source of real time sighting data for researchers. Dr. Deborah Giles from the Conservation Canine program has stated that approximately 60% of the sightings she receives come from Pacific Whale Watch Association. Ken Balcomb from the Center for Whale Research stated the following during a webinar on June 1st. “Respectful professional whale watching has gone a long way in helping us look at the distribution and status of the Southern Resident killer whales. I don’t think a moratorium on whale watching per se is helpful to the whales at all. It has absolutely no value to the whales. It has a negative value in the sense of lost information about their distribution and occupancy in Salish Sea waters.”

Adaptive Management Strategy

It is widely agreed upon that the primary threat to SRKWs is the lack of prey abundance, specifically the collapse of Chinook salmon. Historically, the driver for SRKW presence in the inland waters of Washington state and British Columbia between April – August is Fraser River Chinook.

The 2018 Southern Resident Killer Whale Priority Chinook Stocks Report by NOAA and WDFW score the Fraser River at 4.25 of a maximum total score of 5. This is based on 3 factors:

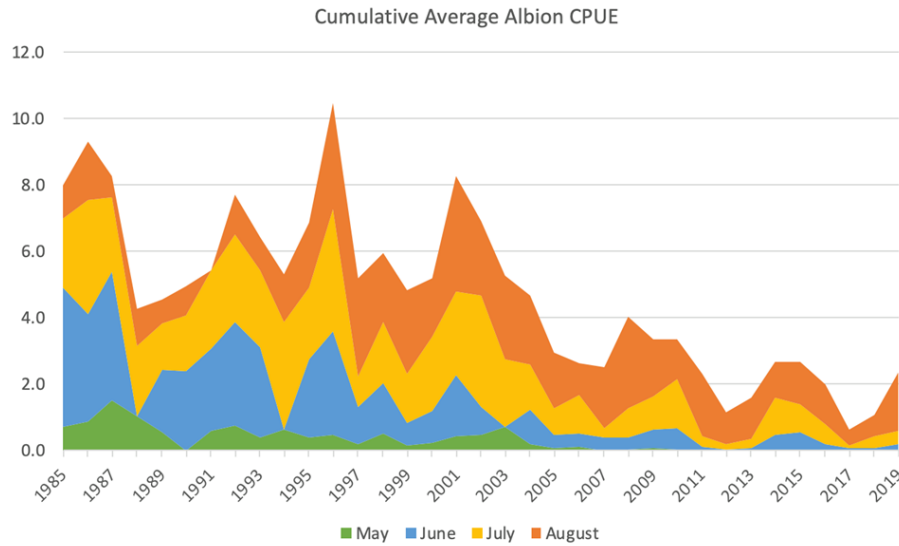
- Observed diet of SRKW through prey tissues/scales and fecal samples from 2004 to present
- Consumed during reduced body condition or diversified SRKW diet—body condition determined through photogrammetry; diversified diet determined through estimates of proportion of Chinook salmon consumed by season and region using prey tissues/scales and fecal samples
- Degree of spatial and temporal overlap— determined through prey mapping and reports from the Chinook Technical Committee of the Pacific Salmon Commission and published literature

An analysis of prey consumed by Southern Resident orcas in their historical summer range from 2004 to 2008 supported earlier studies showing that Chinook salmon are by far the preferred prey. The study concluded that 80% to 90% of the Chinook sampled originated from the Fraser River while only 6% to 14% originated from Puget Sound rivers. (Hanson et al. 2010) A recent genetic analysis of fecal samples confirmed that Chinook made up almost 80% of the sequences from May to September. “Over all years, a clear pattern emerged with Chinook salmon dominating the estimated diet early in the summer, and coho salmon contributing an average of >40% of the diet in late summer.” (Ford et al. 2018) During the late summer, fall, and early winter months, SRKW presence in the inland waters is driven by Coho, Chum and winter Chinook, which are now more abundant than the spring and early summer Fraser River Chinook runs. As a result, with more abundant and diverse food, SRKW presence is now higher in the fall and early winter than spring and summer.

It is also agreed upon by many scientists that potential vessel impacts are primarily concerning during times of increased food scarcity (Ayres et al. 2012 for example) and that when food is available potential vessel impacts are negligible when mitigation efforts are used, primarily vessel speed and distance. This is clearly evidenced by the populations of Pacific Northwest Bigg’s killer whales who have an abundant food supply, year-over-year increased presence around professional whale watching, and a population of roughly 400 individuals, increasing at over 4% per year. With approximately 100 calves born since 2012 and over 90% surviving, they are a thriving and frequently watched population.

The Albion Test Fishery (Fraser River) has operated consistently since 1981. It operates daily between April – October and fishes two sets to coincide with the daily high tide and publishes its catch each day. Using data from the Albion Test Fishery would allow us to see, in almost real-time, periods of time of increased and decreased food scarcity. It would also allow us to see long-term trends for various months. It makes sense that this metric provides us both short-term and long-term guidance on vessel management as it relates to salmon abundance, and the desperate need for Fraser Chinook restoration.

This metric allows for a reliable and trusted data source during the most concerning months, April – August, when the Fraser River Chinook is the primary food source for SRKWs when they are present in the inland waters.



Overview:

The main focus of the rules below is to limit the number of licensed professional whale watch vessels that may view SRKWs at one time. This allows professional whale watch vessels to continue to provide an educational experience for the public that promotes conservation actions to help SRKWs. The vessel limits vary seasonally and are based on several factors:

1. The number of vessels needed to be effective in a sentinel role, recognizing that more vessels are needed during months of higher recreational (and other) vessel traffic. These months also coincide with months of greater prey abundance
2. Months of greater food scarcity, which also coincide with months of reduced vessel traffic

Maximum Number of Licensed Vessels around SRKWs

We propose setting a maximum number of licensed vessels “viewing SRKWs,” defined as the established standard of within a half mile of SRKWs. Commercial kayak license holders with multiple kayaks should be considered as 1 licensed vessel, unless they are being approached by SRKW in a manner that would preclude the kayak operators from limiting the number of kayak groups in an area. SRKWs can often be spread into multiple groups well over a half mile apart. As long as the groups are greater than a half mile apart, this would satisfy the maximum vessel requirements.

Professional whale watching vessels throughout the region are in constant communications throughout each day through several networks. These communications will enable the professional whale watching community to self-enforce the number of licensed vessels viewing SRKWs. This will greatly reduce the enforcement burden on WDFW and the communications protocols already established by professional whale watchers will enhance the role of WDFW on the water.

At the establishment of the licensing program in 2021, we propose licensed vessels be limited to:

- November – June: Maximum of 3 licensed vessels
- July – October: Maximum of 5 licensed vessels

West Side San Juan Island No-Go-Zone

The PWWA has an established voluntary no-go zone on the west side of San Juan Island. The No-Go-Zone extends from Mitchell Point to Cattle Point, one quarter mile offshore and a half mile from the Lime Kiln Lighthouse. Including this limit within the license program would officially codify this as a rule. This regulation would also act as a further example to recreational vessels to remain outside of the No-Go-Zone.

All non-human powered license holders must remain outside of the San Juan Island no-go-zone and all commercial kayak license holders must remain within 100 yards of shore when possible on the west side of the island in Haro Strait year-round. Kayaks and other non-human powered license holders are exempt from remaining outside the no-go-zone rule but must maintain best practices including the Whale Warning Flag, KELP Guidelines, and other regulations outlined within the license program.

Other Considerations

Data Sharing & Reporting

License holders will be required to notify WDFW of the presence of SRKWs when they are identified in Washington waters. To reduce potential of burden on WDFW from multiple reports, license holders will establish a protocol so that one contact will notify WDFW.

Time of Day and Days of the Week

These could potentially be useful at some date in the future when SRKWs return to presence patterns similar to 2005 and earlier, when there was predictability and consistency in their presence and movements.

However, because their presence patterns have increasingly changed, there is no predictability or consistency that warrants these restrictions. Setting time of day and day of week restrictions for SRKWs who are not present in any consistency does not help us achieve our goals of limiting potential impact and it does risk putting unnecessary negative consequences on professional, licensed whale watchers.

Communications

To help support the sentinel role, communications from the licensing process, WDFW and other entities can help educate other boaters that when they see professional whale watching vessels they should reduce their speed, assess their route of transit, and hail one of the whale watching vessels on VHF if they need assistance to determine the best route to transit around the area.

Communications from WDFW, other agencies and NGOs regarding the licensing program should include information that positions professional whale watching in the state as one of the most responsible whale watching communities in the world. By participating in the regulatory process as an engaged partner, consistently leading through science-based guidelines, serving as sentinels in our shared waterways, and participating in research, education, and conservation, Washington state should take great pride in its professional whale watching community. It is not like this in many places around the world. Additionally, communications should promote accurate education about SRKWs, as well as information about thriving populations of whales in the region, including Bigg's killer whales, Humpbacks, and Minkes. This position should be promoted in press releases about the new rules and at public meetings to help educate the public.

Time Limits of Viewing SRKWs

We propose viewing of SRKW by a single license holder vessel be limited to 45 minutes around (half mile) SRKWs per whale watching tour. This would limit the total time a commercial whale watch vessel

could spend around SRKWs at one time. If the company offers multiple trips a day or operates multiple vessels each is granted 45 minutes per tour. Kayak groups would be exempt from this rule due to the nature of human powered craft and behavior of the SRKW.

When a vessel arrives “on scene” there is typically a period in which the operator assesses the scene and determines the best placement of the vessel for prevailing conditions and behavior of whales. This includes talking with other professional whale watch operators to determine the best entry and placement of that vessel. With caution and professionalism, this could take up to 15 minutes depending on the behavior of the whales. This is one of the reasons that 45 minutes is an appropriate viewing time to correctly educate passengers, and gain an experience with SRKWs.

As mentioned above, the communications protocols established by professional whale watching vessels will allow for self-enforcement of time limits, which will reduce the burden on WDFW.

Discussion:

Several Advisory Committee members have been uncertain about the value of the sentinel role and other benefits of professional whale watching and as a result had proposed a limit of zero or one licensed vessel be permitted to view SRKWs at limited times of day. The justification outlined above and the included attachment is intended to provide more detail and clarity around how the sentinel effect actually *reduces* overall potential vessel impacts.

By limiting the number of licensed vessels proposed here, we can achieve our mandated goal of reducing potential vessel impacts on SRKWs. The proposed vessel limits represent a reduction in the number of professional whale watch vessels from historical numbers while allowing a limited number of vessels to mitigate potential impact from other vessels via the sentinel effect.

If we can agree on consensus to the limits proposed here, we will be able to move past the main sticking point between the two proposals.

Conclusion:

As mentioned above, this proposal combined with the recent 2019 approach distance (300 yards) and speed regulations (less than 7 knots), and professional whale watching guidelines, represent a dramatic shift in viewing SRKWs compared to the time period prior to the implementation of the first federal regulations in 2011.

Understanding the data gap between much of the science around vessels and several updates in regulations and whale watching best practices, we are interested in having the science panel provide their best assessment on the following:

- Mitigation benefit of 3 – 5 vessels at a distance of 300-yard approach distance and slow speed limits versus historical vessel numbers at 200-yard approach distance with no legal slow speed zone
- Expected benefits of 3 - 5 slow vessels at 300 yards working to slow high speed transiting vessels

ATTACHMENT

Commercial Whale Watching Licensing Program
July 8, 2020

Dear Advisory Committee,

As we prepare for our final conversation before submitting two separate proposals to the science panel I want to reach out to you once again regarding the sentinel role of professional whale watching boats. I know this has been a source of disagreement throughout this process because of the uncertainty and lack of data. But as I have mentioned before, sometimes there is more to the situation than what can be documented.

I have spent the better part of the last four days with a group of people watching J Pod from shore on the west side of San Juan Island and we have documented several instances of disturbance, harassment and near misses by recreational boats and kayaks. On one occasion a boater motored in at high speed, noticed the whales and stopped just as he or she should, then altered course and motored right into the middle of the group of whales to get a better look. We witnessed several occasions when motor boats and sailboats traveled right next to or over the whales, often at high speed, and one occasion where private kayakers paddled out to the middle of the channel to be next to the orcas. Soundwatch and WDFW enforcement can only cover so much ground geographically, and many of the whale watch boats have been avoiding the area and opting to view other wildlife because of the scrutiny and criticism they have been experiencing around watching Southern Residents.

These incidents are representative of scenarios we see all the time from shore on the west side of San Juan Island, but none of them will show up in the data because there is no one (neither PWWA, Soundwatch, or WDFW) to document them.

J Pod has spent the last several days foraging and very widely spread everywhere from the south end of the island up to Lime Kiln Point State Park, and as is typical during foraging behavior, have often been taking long dives. While some of the boater incidents we observed were intentional, most were likely due to the boaters simply not knowing the whales were there. During all of the recreational boat infractions, there were zero whale watch boats present to provide a sentinel role. By contrast, on one occasion there were two whale watch boats present and a private boater stopped and modeled their behavior at the appropriate distance.

A compilation of these observations has been prepared by Monika Wieland Shields and can be viewed at this link: https://www.dropbox.com/s/ztwnceolfmdsl4j/IMG_8484.MOV?dl=0

Photos of some of the observed incidents:



Photos: Monika Wieland Shields



Photos: Cindy Hansen

I am asking you once again to take the sentinel role of professional whale watching seriously. The infractions we observe when no one is present to take data are real and they are serious. In addition to concerns about noise and disturbance there is very real concern about the potential of a boat strike. As I'm sure you have all heard by now, a humpback whale was struck by a Washington State Ferry on June 6th and may not have survived. Southern Resident orca J34 was struck and killed by an unknown vessel in 2016. His mother was one of the whales present during many of the infractions by recreational boaters noted in the past few days. It is only a matter of time before another boat strike occurs and right now we have the opportunity to formalize the sentinel role of professional whale watch boats to try to prevent this from happening. While some recreational boaters may not notice a whale warning flag, as noted in Todd Hass's preliminary analysis of Soundwatch data, commercial whale watch boats are reaching out and making contact. As we have heard throughout this process from the PWWA operators and during public comment, the professional whale watchers will often be proactive and contact boaters by radio, sound their horns or even provide a physical barrier between oncoming boats and whales. One professional whale watch boat per group of whales is not enough to fulfill this role as evidenced during the times we observed multiple infractions occurring simultaneously. What I and others noted over the last several days should provide evidence for the necessity of the sentinel role of whale watch boats around Southern Resident orcas, not only to help mitigate noise and disturbance but also to potentially prevent a tragic accident. I hope you will consider this information during our final deliberations this afternoon and in your final proposal.

Thank you,
 Cindy Hansen
 Education and Outreach Coordinator
 Orca Network