

SOUNDWATCH PROGRAM

ANNUAL CONTRACT REPORT

2023



Authors/ Organization: The Whale Museum
P.O. Box 945
Friday Harbor, WA 98250
Email: soundwatch@whalemuseum.org

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Project Description and Analysis Prepared By: Maria A. Sabando Plaza (2024 Soundwatch Administrative Program Coordinator) & Jamie Hoy (Soundwatch Program Assistant, Data Analysis)

Principal Investigator(s): Alanna Frayne (Soundwatch Program Coordinator, PI, Vessel Operator, data collection- Ended 15 Jan. 2024)

Assisted By: Erin Casellas (Vessel operator, data recording), Sofia Denkovski, Greta Weise, & Clare Ogle (Academic interns: data recording and data entry)

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Abstract

The goal of this project was to provide on-the-water stewardship, public outreach and boater education services by The Whale Museum's Soundwatch Boater Education Program during the 2023 whale watching season and to provide a data update to the prior Contract Report. Soundwatch Public Outreach/Boater Education Project Final Project Report characterizing general trends in vessel-based whale watching activities associated with Southern Resident Killer Whales in the Haro Strait Region of Washington State and Southern Vancouver Island, British Columbia, Canada.

Executive Summary

The goal of the Soundwatch Program is to reduce vessel disturbance to killer whales and other marine wildlife through educating recreational boaters on regional guidelines and regulations, to provide systematic monitoring of vessel activities around all cetaceans within the program area, and to present a data update to the 2022 report on whale watching trends in the Haro Strait region to inform future management strategies. The program area includes the north central Salish Sea: the boundary waters of the Canadian Gulf and San Juan Islands, located in northwestern Washington State and southwestern British Columbia in the Puget Sound/Georgia Basin. The Salish Sea includes Puget Sound and the Straits of Georgia and Juan de Fuca.

The objectives of this 2023 project were to: provide boater education services through public outreach and on-the-water stewardship activities, to monitor vessel activity within 0.5 mile radius of whales, specifically killer whales (*Orcinus orca*) with a priority to Southern Resident killer whales (SRKWs) from May-September, collect data on vessel activities, and conduct analysis on vessel activities in the Central Salish Sea around killer whales and other marine wildlife.

SRKWs have been closely monitored for several decades. Their population peaked at 97 whales in the 1990s and then declined to 79 whales in 2001. NMFS listed the Southern Resident killer whale distinct population segment (DPS) as endangered under the ESA on November 18, 2005 (70 FR 69903). As of July 2023, there were 75 Southern Resident killer whales (Center for Whale Research).

In May 2011, the National Oceanic Atmospheric Administration (NOAA) Fisheries implemented new vessel regulations around all killer whales in the inland waters of Washington State. The regulation included two prohibitions: a prohibition on approaching killer whales within 200 yards and a prohibition on positioning a vessel within 400 yards of the path of killer whales. In addition, Washington State updated the Revised Code of Washington (RCW 77.15.740) on SRKWs in 2012 to match the Federal 200 yard and 400 yard in-the-path approach distances for inland waters. In July 2018, Canada passed vessel regulations for killer whale populations in British Columbia and the Pacific Ocean. The new Canadian regulations stated all vessels should operate 200 meters away from all killer whales.

Vessel regulations were again updated at the beginning of the 2019 season with Washington State revising regulations (RCW 77.15.740) to increase vessel approach distances to 300 and 400 yards and requiring vessels to maintain less than 7 knots within a half mile of SRKWs in Washington State waters. This update was put forward as a recommendation by the Orca

Recovery Task Force, which was established by Washington State Governor Jay Inslee in March 2018, and was signed May 8 becoming effective July 28, 2019. Beginning January 1, 2025, regulations will be once again updated with Washington State revising regulations (RCW 77.12.740) to extend vessel approach, interception, or trailing distances from 400 yards to 1,000 yards for SRKWs. Similarly, Canada established Interim Sanctuary Zones (ISZs) and increased vessel approach distances from 200 meters to 400 meters of all killer whales through a Transport Canada interim order effective June 1, 2019 – October 31, 2020. The interim order was renewed for the 2020 season, with few changes. The ISZs were in effect from June 1, 2020– November 31, 2020, whereas the 400 meter approach distance measure was in place until May 31, 2020, effectively making it a year-round requirement. This order was again renewed in April 2021, with the same time periods for ISZs and the 400 meter approach distance. The interim order was renewed once more in April 2023 with some changes, including (1) removal of Swiftsure Bank as an ISZ, (2) expansion of the ECHO Program voluntary seasonal slowdown zone at Swiftsure Bank, and (3) additional fisheries closures around Fraser River, Swiftsure Bank, and Strait of Juan de Fuca (Transport Canada 2022). In addition to the Canadian interim order, most commercial whale watching companies signed the “Sustainable Whale Watchers Agreement” (SWWA), permitting authorized vessels (AV) to approach Transient killer whales to 200 meters in exchange for not approaching Southern Resident killer whales.

Washington Department of Fish and Wildlife certified the Commercial Whale Watching License Program (CWWLP) on December 7, 2021. The CWWLP establishes rules for commercial viewing of Southern Resident killer whales and requires commercial whale watching businesses including motorized, sailing, and sea kayak operations to obtain a license in order to conduct operations within the inland waters of Washington State. CWWLP rules permit commercial viewing of Southern Residents during the time periods of 10:00am-12:00pm and 3:00pm-5:00pm from July 1 through September 30 (WDFW, 2020). These actions played a direct role in the education and research efforts of Soundwatch and will be referenced throughout this report.

The 2023 Soundwatch data collection consisted of: counts of vessels within one half-mile of any cetacean by type, location and activity (“vessel counts”), cetacean behavior data: identification, number of animals/groups, location, travel direction and behavior states, vessel contact information (“recreational contacts”) as well as EcoTour (commercial) and private recreational vessel compliance with voluntary guidelines and/or regulations (“vessel incidents”). A brief summary of whale presence in the Central Salish Sea is given in this report. The entirety of Soundwatch data on cetacean identification, number of animals/groups, location, travel direction and selected behaviors is incorporated into The Whale Museum’s long-term Whale Sightings’ database. Soundwatch data specific to SRKWs is compiled into the Museum’s annual Orca Master NOAA Contract Report. All Soundwatch data is available through The Whale Museum’s data sets or upon request. As in 2022, Soundwatch suspended the on-water volunteer program in an effort to reduce unnecessary exposure of the Soundwatch crew to the COVID-19 virus.

Data analyzed for this annual update report reflects data collected by The Whale Museum's Soundwatch Boater Education Program in 2023 and includes vessel incidents, behaviors that are inconsistent with current guideline and regulations, definitions related to the Be Whale Wise guidelines and the U.S. Federal, Washington State and Canadian vessel regulations. This update report depicts general trends in vessel-based whale watching activities associated with SRKWs in the Haro Strait region of Washington State and British Columbia, Canada.

*This updated report on the disposition of funds from Contract Number **RA-133F-12-CQ-0057** & Amendment **1305M138DNFFP0011**, **1305M323DNFFP0026**, **Tasks C.2.2.2a & C.6.2**, and **NFWF 78326** entitled *Soundwatch Public Outreach/Boater Education Project*, fulfills reporting requirements under the NOAA Administrative Terms and Conditions of the contract.*

Note: Included as an additional appendix to this report are copies of the Soundwatch Program 2023 data sets in MS Excel.

Project Goal:

The goal of the Soundwatch Public Outreach/Boater Education Project was to implement The Whale Museum’s Soundwatch Boater Education Program during the 2023 whale watching season and provide data analysis updates to the 2022 report on whale watching trends in the Haro Strait region.

Project Objectives:

The objectives of this project were to:

- 1) Provide boater education services through public outreach and on-the-water stewardship activities during the 2023 whale watch season
- 2) Collect data on vessel activities during the 2023 whale watch season, especially relative to the 2011 U.S. Federal, 2019 Washington State vessel regulations and 2022 Transport Canada Interim Order
- 3) Conduct analysis on current whale watch activities including continued evaluation of 2011 U.S. Federal vessel regulations
- 4) Provide 2023 data updates to the 2022 Soundwatch Public Outreach/Boater Education Project Report

Project Deliverables:

The contract listed several deliverables including:

C.2.2.2a The vendor shall provide a written report summarizing the Soundwatch program activities, patterns of vessel activities around the whales, and compliance with guidelines and regulations. Data will be compiled into an annual data set following standardized protocols to allow for comparison between years which include the following information:

- 11) Total Vessel Incidents by percentage
- 12) Annual Vessel Incident Summary by incident and vessel type
- 13) Top 5 Vessel Incidents by vessel type
- 14) Geographic distribution of Vessel Incidents

C.6.2 Deliverables: For each task or subtask deliverables shall be provided in the form of reports and data to the NWFSC by 15 February for draft reports and data and final reports and data will be due 1 March of each year of the contract for data collected in the previous year.

Task 6.2A: Conduct estimated 50 days on-the-water education and monitoring activities during the months of May through September 2023.

C.6.2A.1 Deliverables for Soundwatch Education and Monitoring Program. Sub-Task 6.2.1.1: Summary of Soundwatch Activities, Patterns of Vessel Activities Around Whales, and Compliance with Regulations and Guidelines.

- 1) Whale Watching Trends in the Boundary Waters of Haro Strait May-September in numbers of visitors to Lime Kiln Point and number of active vessels from U.S. and Canada.
- 2) Growth of Commercial (EcoTour) Whale Watching in the Boundary Waters of Haro Strait May-September in number of vessels.
- 3) Commercial (EcoTour) Whale Watch Platforms in the Boundary Waters of Haro Strait May-September in numbers of vessels.
- 4) Average Number of Vessels with killer whales Per Month May-September in numbers of vessels.
- 5) Annual Average Numbers of Vessels with killer whales at Different Times of Day, May-September in number of vessels.
- 6) Annual Vessel Type Averages and Maximum Vessel Type Numbers of Vessels.
- 7) Mean Annual Daily Average of Number of EcoTour (Commercial) and Private recreational boats with Whales in Haro Strait Region May-September with Standard Deviation in number of vessels.
- 8) Annual Distribution of Vessels within ½ Mile Radius of Whales May-September in percentages.
- 9) Distribution of EcoTour (Commercial) Whale Watch within ½ Mile Radius of Whales in percentages.
- 10) Distribution of Private recreational vessels within ½ Mile Radius of Whales in percentages.
- 11) Total Vessel Incidents by percentage.
- 12) Annual Vessel Incident Summary by incident and vessel type.
- 13) Top 5 Vessel Incidents by vessel type.
- 14) Geographic distribution of Vessel Incidents.

Sub-Task 6.2.1.2: Summary Copy of Vessel Data in Electronic Form.

Task 6.3: Description of vessel activities around Southern Resident killer whales.

C.6.3. A Seasonal and Yearly Trends in Vessel Activities Around Whales.

C.6.3.1 Deliverables for Description of Vessel Activities around Southern Resident killer whales.

Sub-Task 6.3.1.1: Vessel Trends in Proximity to Southern Resident killer whales.

- 1) Whale Watching Trends in the Boundary Waters of Haro Strait May-September in numbers of visitors to Lime Kiln Point and number of active vessels from U.S. and Canada.
- 2) Growth of EcoTour (Commercial) Whale Watching in the Boundary Waters of Haro Strait May-September in number of vessels.
- 3) EcoTour (Commercial) Whale Watch Platforms in the Boundary Waters of Haro Strait by percentage of vessel type.

- 4) Average Number of Vessels Accompanying killer whales per Month May-September in number of vessels.
- 5) Annual Average Numbers of Vessels with killer whales at Different Times of Day May-September in number of vessels.
- 6) Annual Vessel Type Averages and Maximum Vessel Type Numbers of Vessels with killer whales in Boundary Waters of Haro Strait May-September in number of vessels and by types of vessels.
- 7) Mean Annual Daily Average of Number of EcoTour (Commercial) and Private recreational vessels with whales in Haro Strait Region May-September with Standard Deviation in number of boats.
- 8) Annual Distribution of Vessels within ½ Mile Radius of whales May-September in percentages by vessel type and activity type.
- 9) Distribution of EcoTour (Commercial) Whale Watch within ½ Mile Radius of whales in percentages.
- 10) Distribution of Private recreational vessels within ½ Mile Radius of whales in percentages.

Sub-Task 6.3.1.2: Shore-based kayak education and monitoring program.

Methods

Soundwatch Operations

Soundwatch Boater Education Program reduces vessel disturbance to killer whales and other marine wildlife through educating boaters on regional guidelines and regulations as well as providing systematic monitoring of vessel activities around cetaceans. Soundwatch promotes responsible marine stewardship through the development, distribution, implementation, annual evaluation, and adjustment of guidelines and regulations for marine wildlife viewing by residents, visitors, and commercial users. Soundwatch educates boaters on the current guidelines and regulations before they leave the shore; reinforces the learning experience on-the-water where disturbances take place; and provides a scientific platform to collect observational data on vessel activities around cetaceans. Soundwatch data consist of: 1) counts of vessels within 0.8 km (one half mile) of any cetacean by type, location and activity (vessel counts); 2) cetacean identification, location, travel direction and behavior states (cetacean behavior); 3) vessel contact information (vessel contacts); 4) commercial and recreational vessel compliance with voluntary guidelines and/or regulations (vessel incidents); 5) general non-target species (species sightings). Vessel counts and cetacean behavior states are recorded every 30 minutes on the hour and half-hour. In the event that Soundwatch arrives on scene between the hour and half-hour marks, an initial assessment is recorded and data collection resumes as normal on the prescribed hour/half hour marks. Vessel contacts, vessel incidents, and species sightings are recorded as they occur. This annual long-term data is primarily used to help evaluate effectiveness of current regulations and guidelines and to determine need for adjusting regulations and/or guidelines (Seely *et al.* 2017).

The Whale Museum's Soundwatch Boater Education Program has developed standardized procedures for the training of new and seasonal staff with data collection, data entry, and analysis. Soundwatch data collection procedures are designed to follow protocols using

regionally established data parameters for SRKWs. Soundwatch staff and paid seasonal vessel drivers are required to undergo on and off-the-water training using standardized instruction. Training protocol states that vessel drivers observe vessel and cetacean interactions and dictate all data observations to interns and volunteers who record the driver's observations onto data collection forms and help hand off educational materials to recreational boaters. Range finding tools such as laser range finders, electronic radar, and chart plotters as well as high-power binoculars are used to gauge distances. In all cases, drivers are instructed to make conservative estimates when determining distance and recording range encroachment. If an observed vessel's distance to a whale is too difficult to ascertain, the driver did not record it; only vessels observed well within the regulatory or guideline approach distances to whales were recorded as vessel incidents.

Soundwatch has collected data on vessel numbers, types and behaviors around SRKWs since 1998. These findings are provided to the whale watch industry, the public and regional managers. Vessel trend data has been used as the primary data source to inform SRKW recovery strategies in terms of vessel management decisions as well as aided in the creation and/or implementation of San Juan County, Washington State, U.S. and Canadian Federal vessel regulations for killer whales. The annual and long-term data has also been a valuable tool for the training of Soundwatch staff, commercial (EcoTour) vessel and kayak tour operators, and in planning for education and monitoring program efforts.

Summary of Soundwatch Activities

From May – September 2023, Soundwatch operated vessel patrols to educate and monitor boaters under National Marine Fisheries Service (NMFS) research issued permit number 26285. Soundwatch staff and volunteers totaled 119 days of effort, and 100 days on-the-water between May 3 and September 24, 2023, totaling 620 hours of effort on the water traveling 3,790 nautical miles trans-boundary throughout the Salish Sea (Figure 1). Whales were present on 87 of these days, 20 days (143 data counts) directly monitoring Southern Residents, 44 days (264 data counts) with Transient (aka Bigg's) killer whales, 17 days (56 data counts) opportunistically with Humpback whales, and 5 days (9 data counts) opportunistically with Minke whales. This effort totaled 620.0 hours on scene collecting data with marine mammals averaging 6.2 hours per day of on-the-water effort (Figure 2). There were 7 days in which Soundwatch monitored multiple species of cetaceans. Over the summer seasons (typically May – October) since 1998, Soundwatch has totaled more than 14,434 observational and outreach hours with vessels and whales in the Salish Sea.

Soundwatch crew included: one full-time paid program coordinator, one part-time program assistant, two seasonal part-time vessel drivers/educators, one part-time data technician, and three full-time summer interns. Over the season, 527 hours of volunteer time were spent participating on Soundwatch vessel patrols, distributing educational materials, vessel maintenance, "Dock Talks", assisting with data entry and photo archiving. Soundwatch staff, the seasonal vessel drivers, and program interns totaled 93 hours of off-the-water outreach and education during "Dock Talk" events. Additional off-water training and thorough knowledge of all data was required before permitted activities were allowed.

The on-the-water crew operated with a minimum of two and a maximum of four crew members. Equipment utilized in 2023 consisted of a 17' American Eagle rigid hulled vessel, R/V

Raydiance fully equipped with safety equipment, VHF radios, and chart plotters.. *R/V Raydiance* is not equipped with a radar, but does have a Raymarine GPS unit. A new vessel, 20' Zodiac, *R/V Solstice* equipped in the same manner was launched early September 2023 and used for some data collection as well. During 2023, Soundwatch was permitted limited access to the PWWA sightings app for the purpose of SRKW monitoring.

Soundwatch received a WDFW Aquatic Lands Enhancement Account (ALEA) Grant to help provide funding through June 2023 and the National Fish and Wildlife Foundation (NFWF) Grant Agreement for initial support funds for the pilot Soundwatch South program in the Puget Sound through February 2024.

In 2020, the San Juan County Kayak Education Leadership Program (K.E.L.P.) requirement was temporarily lifted due to novel coronavirus COVID-19. EcoTour kayaking suspended operations until after the 2020 season began, at which point they resumed tours using only kayak guides who had previously been educated through K.E.L.P. In 2021, WDFW established the Commercial Whale Watching License Program (CWWLP), which required EcoTour kayak companies to participate in training in order to receive a license to conduct whale watching. The CWWLP rules will be discussed further in the Vessel Activity and Trends Around Whales section.

2023 Soundwatch on the Water Effort (N=620 hours, N=3790 nautical miles)

(c) 2023 Soundwatch/ The Whale Museum

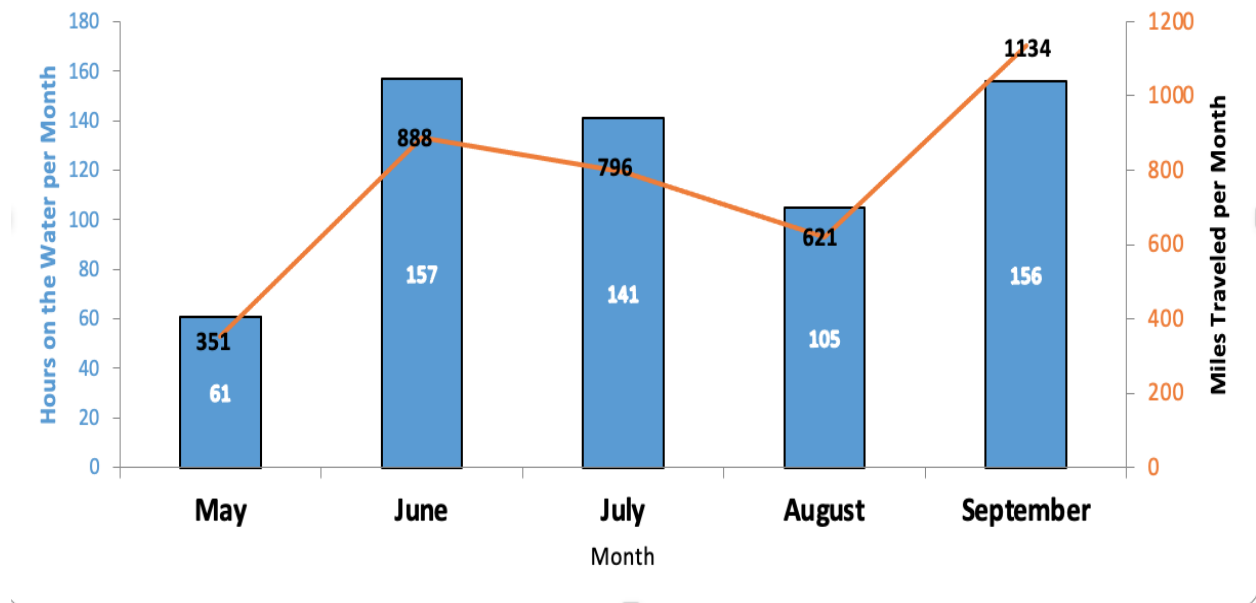


Figure 1: Distribution of Soundwatch vessel hours and miles by month for 2023.

2023 Soundwatch Monitoring Days by Species (N=100 days)

(c) 2023 Soundwatch/ The Whale Museum

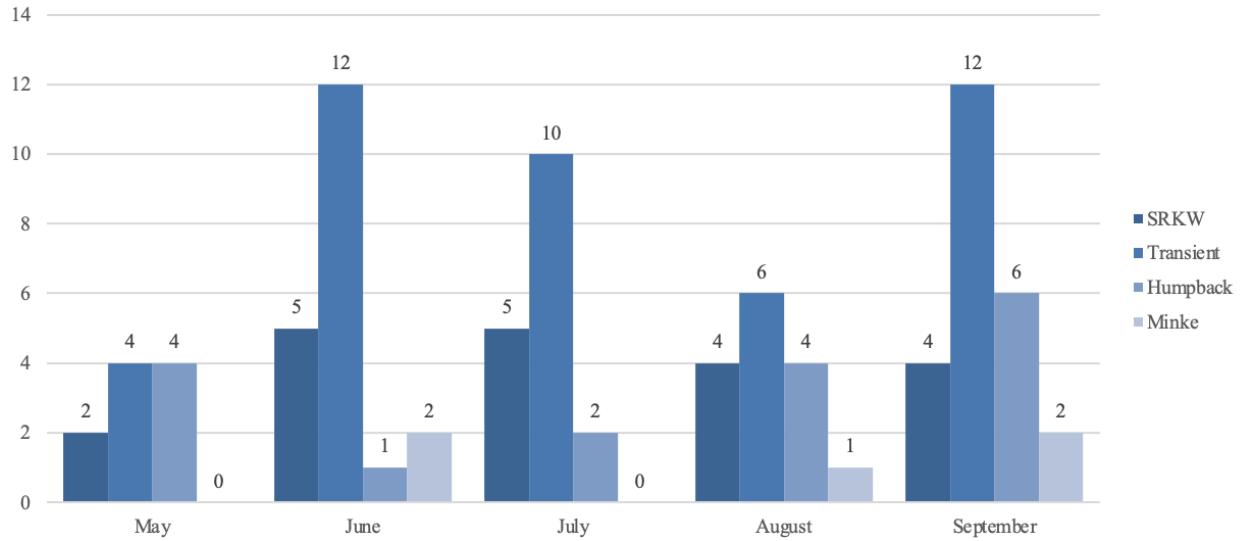


Figure 2: Distribution of Soundwatch monitoring days by species in the summer 2023 season.

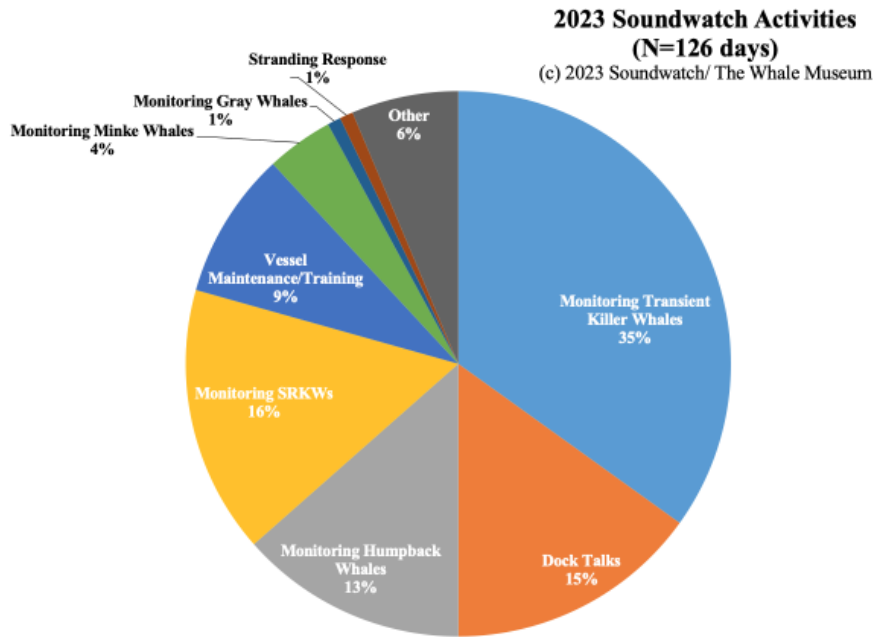


Figure 3: Distribution of Soundwatch activities during the 2023 season.

Whale Watching Trends in the Salish Sea

Soundwatch created a vessel catalog with the number of EcoTour companies, vessels, trip frequency, and homeports engaged in whale watching activities based on underway observations during the 2023 field season (May – September). On-the-water observations included fishing and overnight charters that were engaged in whale watching, although that may not have been a primary focus of their business. Those companies were placed in either ‘occasional’ or ‘rare’ vessel frequency categories. Vessel frequency definitions are: ‘active’ is greater than one day per week from May-September; ‘occasional’ is less than one day a week from May-September; and ‘rare’ is equal to or less than once a month from May-September. For simplicity, all companies that were not in operation (‘inactive’) were not included in total company/vessel counts.

During the 2023 season within Soundwatch’s survey region, 44 total EcoTour whale watch companies operated May–September, offering whale watching trips from 89 ‘active’ whale watch vessels in the U.S. and Canadian Haro Strait region, with 4 ‘occasional’ vessels and 13 ‘rare’ vessels for a potential combined total of 106 whale watch vessels operating on-the-water at a given time. Of the active EcoTour companies, 75% of U.S. companies and 93% of Canadian companies are listed members of the Pacific Whale Watch Association (PWWA) (Figure 5).

Established whale watch companies that were previously inactive resumed or increased operations in 2023, which continued the increasing trend seen in 2022 (Figure 6b). In fact there was an increase in the numbers of active EcoTour vessels both in Canada and the US (figure 4). This increase is also represented by the increase of PWWA membership in USA (20 in 2022 compared to 34 in 2023), while Canada maintained 14 companies with PWWA memberships and a total of 58 vessels within those companies (figure 5). EcoTour companies with multiple vessels were counted as active as long as one of their vessels was considered active, occasional, or rare. There were three observed additions to the US whale watch fleet during the 2023 season and four observed additions to the Canadian whale watch fleet in terms of new vessels and/or new companies.

Shore-based whale watching areas such as Lime Kiln State Park offer whale watching opportunities that are relatively accessible and typically less cost-prohibitive. Visitation to Lime Kiln State Park fell dramatically in the 2020 season, estimating approximately 114,000 visitors compared to 244,000 in 2019. This decline in visitor ship was likely a result of COVID-19 restrictions, as any non-essential travel was discouraged. Visitation increased during the 2021 season, but fell once more during 2022 and remained relatively stable in 2023 decreasing from 171,000 to 170,000, respectively. Visitor numbers have not yet recovered to pre-pandemic counts (Figure 6a). Attendance data for Lime Kiln was provided by Washington State Parks Office in Olympia, Washington.

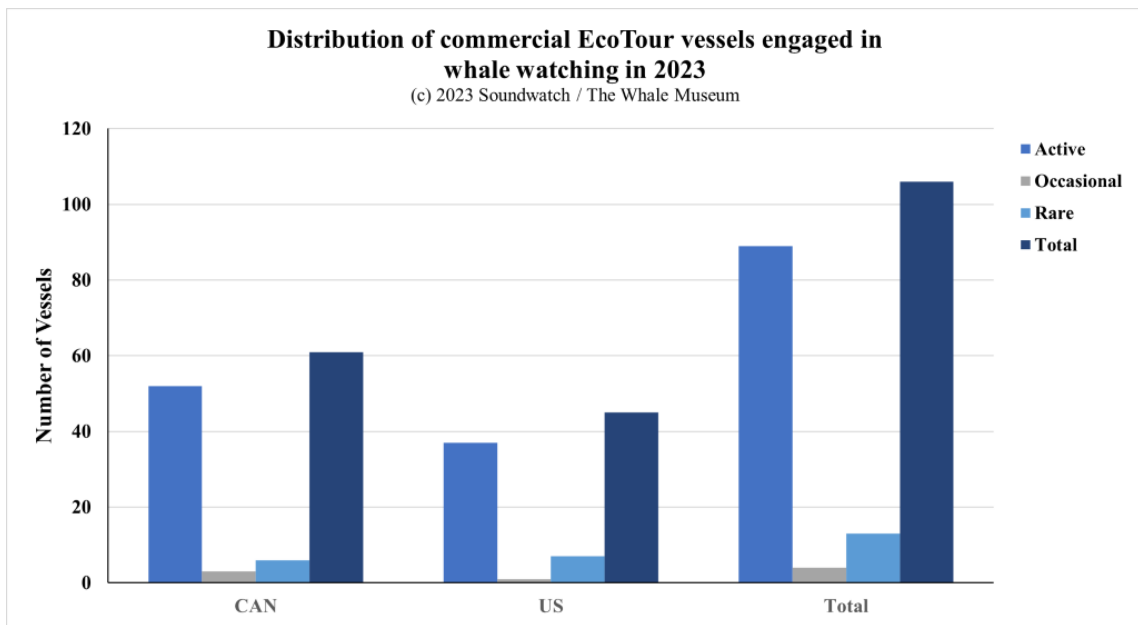


Figure 4: Distribution of total commercial vessels (N= 106) engaged in whale watching in 2023.

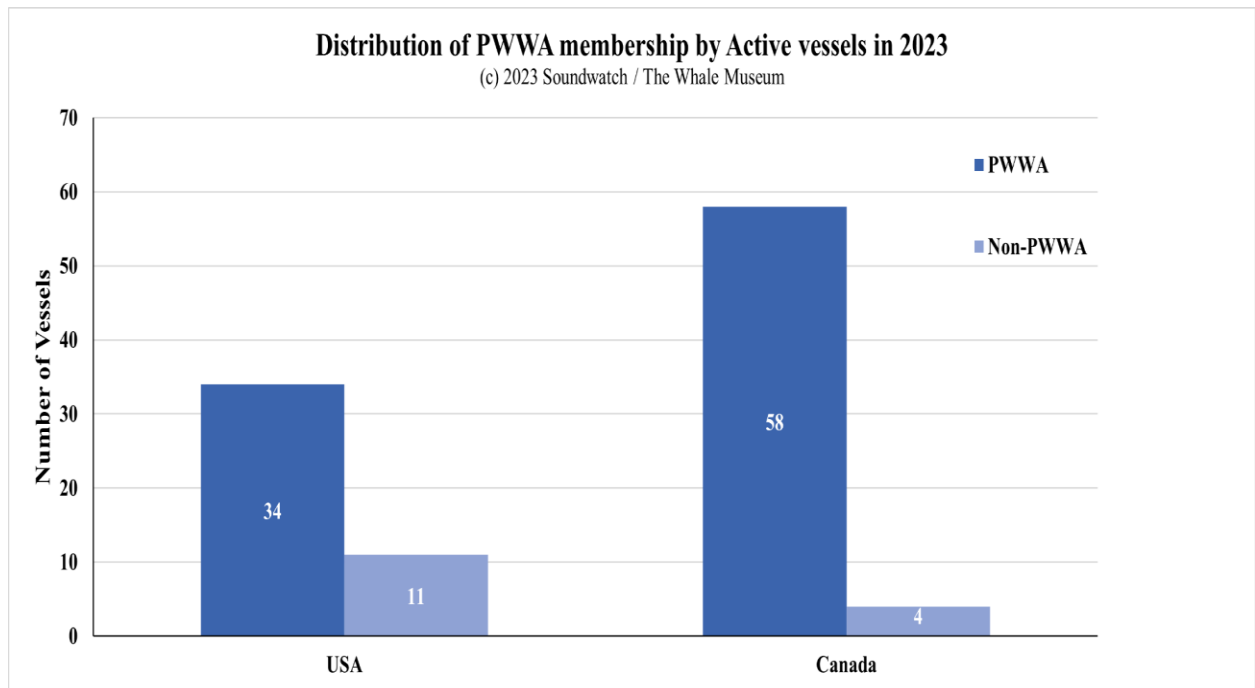


Figure 5: Distribution of active whale watch company vessels by Pacific Whale Watch Association membership in 2023.

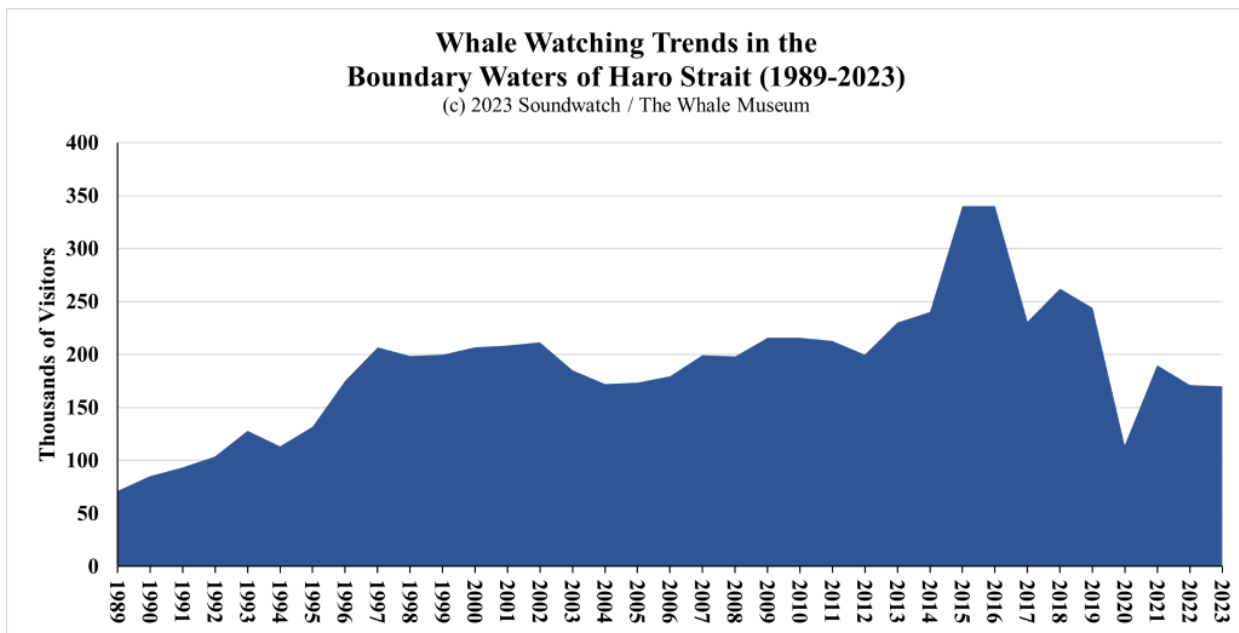


Figure 6a: Land-based whale watching trends at Lime Kiln State Park from 1989 to present. Lime Kiln State Park visitation numbers provided by Washington State Parks Department.

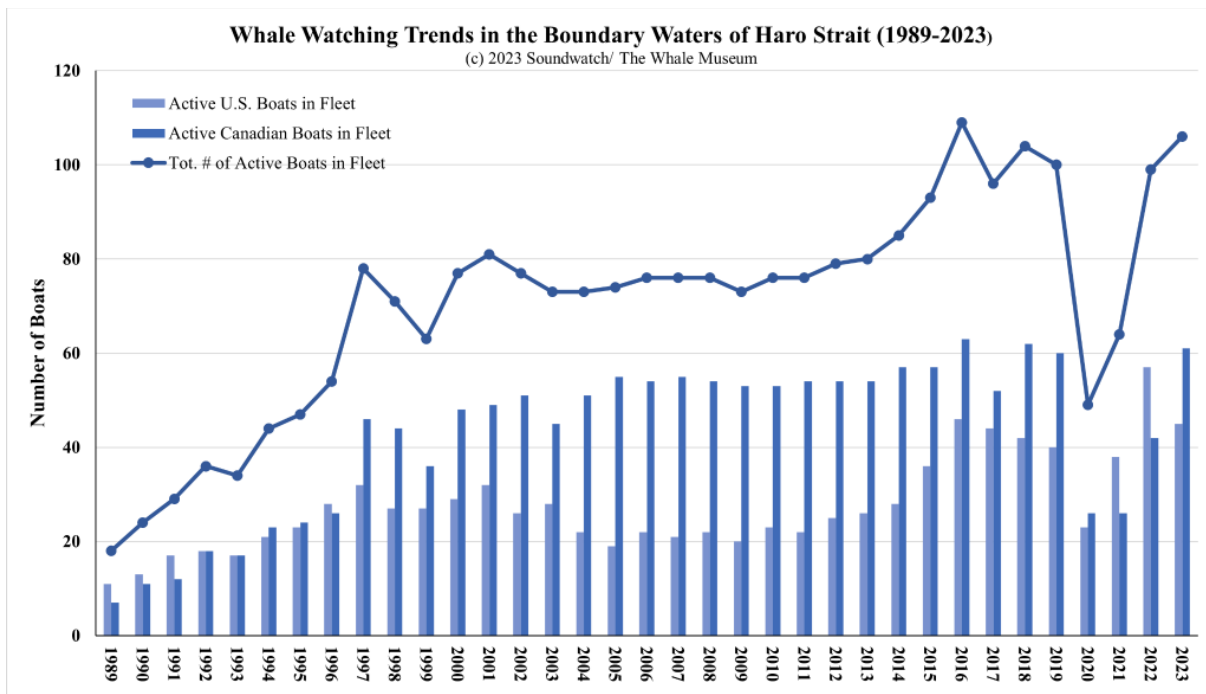


Figure 6b: Whale watching trends in the boundary waters of Haro Strait from 1989 to present.

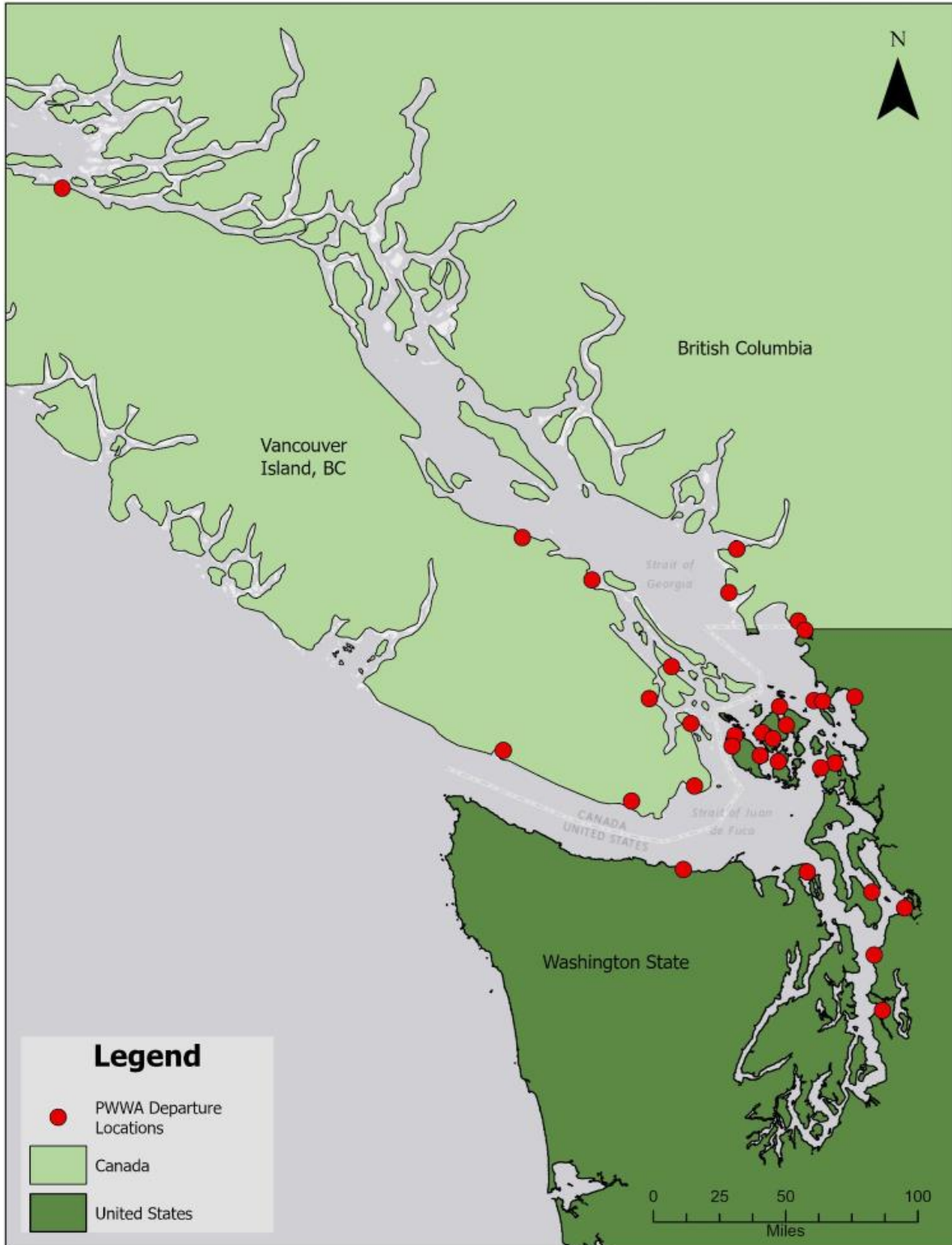


Figure 7: PWWA member vessel departure locations in 2023.

EcoTour kayak companies were also observed by Soundwatch during the 2023 season. Commercial kayak companies generally launched from San Juan County Park or Snug Harbor,

primarily operating on the west side of San Juan Island in Haro Strait and Spieden Channel, north of Roche Harbor. Since Soundwatch vessel count data is conducted in the presence of whales, collection of kayak data is dependent on whether or not the Soundwatch vessel was monitoring cetaceans in the same area (within ½ nautical mile) as kayakers were operating at the time of vessel count collection.

All 7 EcoTour kayak companies observed operating in the San Juans are members of PWWA. Commercial kayakers were present for 36 vessel counts over 9 days in Soundwatch vessel counts from May-September 2023. Kayak company activity frequency was updated in the vessel catalog based on San Juan County Park sign-in sheets, company websites, and PWWA communications. This does not take into account the kayak companies based on other islands within San Juan County that launch from different parks. The number of EcoTour kayakers being launched from San Juan County Park has decreased since 2015, with the historic lowest number of launches recorded during the 2020 season. Although the number of kayakers being launched recovered slightly in 2021, the 2023 season saw launch numbers only minimal increase after their 2022 decline (Figure 8).

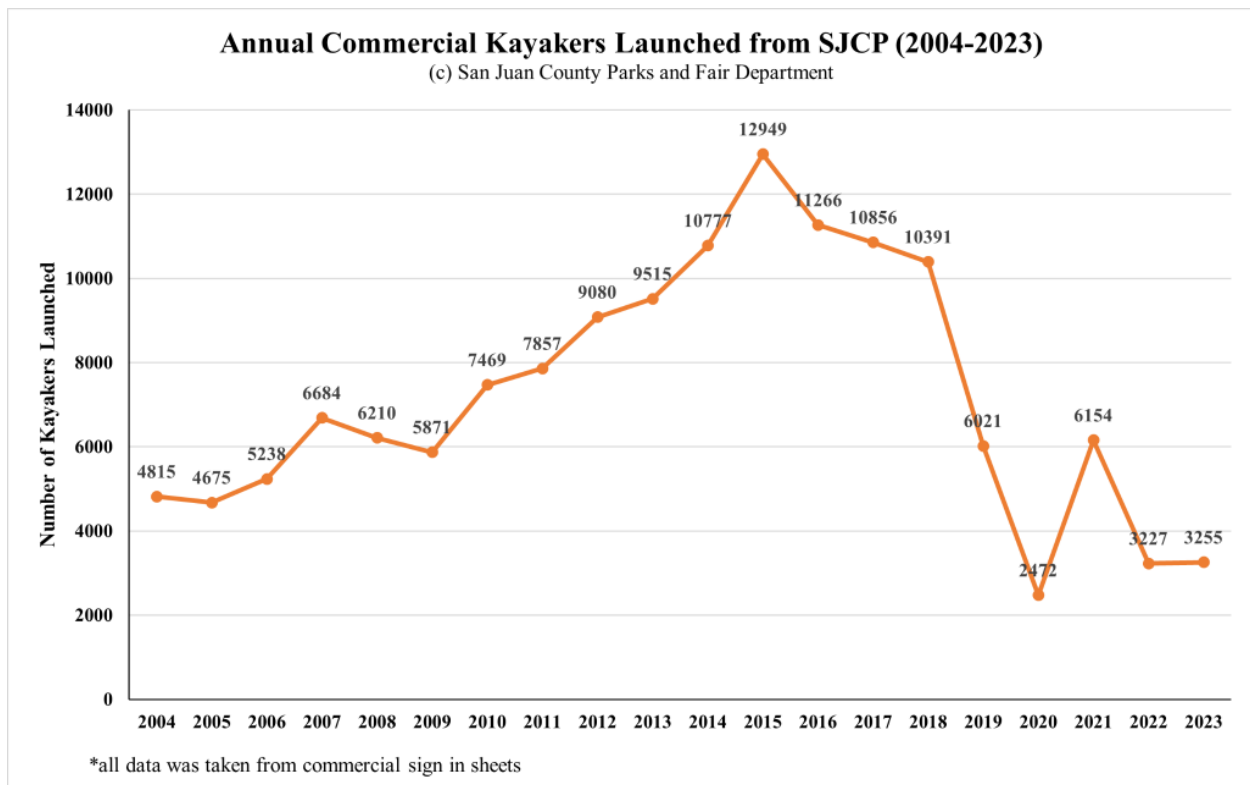


Figure 8: Number of commercial kayakers launched from San Juan County Park on the west side of San Juan Island. The total number represents individual kayakers and not the total number of kayaks launched.

Vessel Activity and Trends Around Whales

Surveys of whales and a count of vessels within one half-mile of whales are collected every half-hour using a *Soundwatch Vessel Count/Whale Survey data sheet* (Appendix I). Soundwatch staff and volunteer crews record whale and vessel data using a set of standardized vessel type and vessel activity definitions as well as whale attributes agreed upon by U.S. and Canadian cetacean researchers (2004 NOAA SRKW workshop) (Appendix K1 & K2). Vessels within one half-mile (880 yards) of all known whale activity are counted according to type and vessel activity (Figure 19). The area of known whale activity is variable and not limited to a half-mile, but rather represents the core of individual whales or groups of whales in the immediate area and can range up to one mile. Often the whales are spread greater than one mile. When visibility and conditions are good, a secondary count may be made for a group of vessels and whales beyond one mile from the Soundwatch vessel, provided crew can reliably record beyond the primary count. A count confidence level is determined by choosing it to be an ‘A count’ (highest confidence and usually the count the Soundwatch vessel is in) and a ‘B count’ still reliable enough to count, but with less confidence and usually the count that the Soundwatch vessel is not in.

Each observed vessel within the count range is categorized according to a vessel type and a specific best-fit vessel activity to describe what the vessel was engaged in (Appendix I). Vessel activity categories include *transiting* (moving through the area within one half mile); *whale oriented* (moving or stationary whale watching); *fishing* (moving or stationary with poles or nets in the water); *research* (engaged in any type of research, including cetology); *enforcement* (enforcement vessel in pursuit or engaged with a vessel at the time of the count); *acoustic* (outside of the count range one half mile, but in acoustic/visual range); *or other* (which must be described, such as a rescued vessel in tow, etc.).

Vessel incidents, observations of vessels operating contrary to current voluntary guidelines and regulations, are recorded using standard definitions. Descriptions of guidelines and regulations, along with the incident codes used to record incidents of regulation and guideline violations can be found in Appendices J1 & J2. Incidents are recorded opportunistically as they are observed using a *Vessel Incident datasheet* (Appendix H). Soundwatch staff are conservative in recording incidents.

Vessel Count Trends

Plotting annual locations of Soundwatch vessel counts can be used as an overall indicator of Soundwatch effort and can be compared to annual and long term SRKW habitat use maps generated by The Whale Museum’s annual Orca Master Program and presented in annual NOAA Contract Reports (Appendix N). Comparing annual SRKW sightings data with Soundwatch vessel monitoring effort confirms that the Soundwatch program targets where the majority of SRKW sightings occur and where the largest concentrations of vessels and whales are likely to be found.

Soundwatch totaled 87 vessel/whale days (7 days of monitoring multiple species) and 478 vessel counts. Recreational vessels were observed 69 days and 320 counts, U.S. EcoTour vessels 60

days and in 300 vessel counts, Canadian EcoTour 49 days and 184 counts, Research 19 days and in 78 counts, Monitoring/Enforcement (excluding Soundwatch, including Straitwatch presence) 37 days and 145 counts, and kayaks (EcoTour and recreational) 17 days and 25 counts.

The Soundwatch study area is separated into zones based on the TWM data quadrants and marine fishing zones for the US and Canada (Appendix Q). Soundwatch concentrates surveys in locations of vessels engaged in whale watching activities. Vessel counts during the 2023 season were concentrated around San Juan Island and Boundary Pass north into the Strait of Georgia, as well as around Patos and Sucia Island north of Eastsound (Figure 9). Soundwatch's area of operations in 2022 are similar with the exception of increased activity within Canadian waters including the Gulf Islands, Strait of Georgia, and Strait of Juan de Fuca during the 2023 season (Figure 10). This is a result of SRKW presence detection in these areas (Figure 11).

There are obvious trends of overlap in overall whale habitat use and vessel activities within a half mile of the whales, including whale watching, fishing, transiting as well as acoustic influence from large vessels transiting greater than a half mile from whales. The majority of vessel counts by Soundwatch in 2023 were concentrated around San Juan Island (Zones 1, 2, 3, and 5) and the waters north of the San Juan Islands (Zones 6 and 7) (Figure 10). Haro Strait and the west side of San Juan Island are historically foraging grounds for SRKW during the summer months, and Soundwatch did monitor and record their presence in these areas. Soundwatch also observed SRKW presence at Pt. Roberts (Zone 7) and Race Rocks (Zones 12 and 13).

Soundwatch collects vessel count/whale survey data on all large cetacean species encountered in the Salish Sea in addition to Southern Resident and Transient killer whales, most commonly including the humpback whale (*Megaptera novaeangliae*) and minke whale (*Balaenoptera acutorostrata*). After significant changes to federal and state regulations pertaining to killer whales specifically, it has become important to identify and assess potential impacts on other cetaceans in the region. Whales such as the humpback and minke are protected under the Marine Mammal Protection Act (MMPA), which prohibits take or harassment of marine mammals and current guidelines recommend a minimum viewing distance of 100 yards (Appendix A1-A3). Since regulations surrounding killer whales, and particularly SRKWs under the CWWLP, are more prohibitive in terms of distance it may be expected that commercial and recreational whale watch vessels might shift to observing cetacean species such as the humpback and minke with greater regularity and/or frequency. Additionally, increasing awareness of the critically endangered status of SRKWs may further shift preference to watching less threatened cetaceans. Attributes of humpback and minke whales can be more challenging to characterize using Soundwatch data since the primary target species of research is the killer whale. However, vessel counts and activity around these other large cetaceans will be a valuable resource for comparison moving forward.

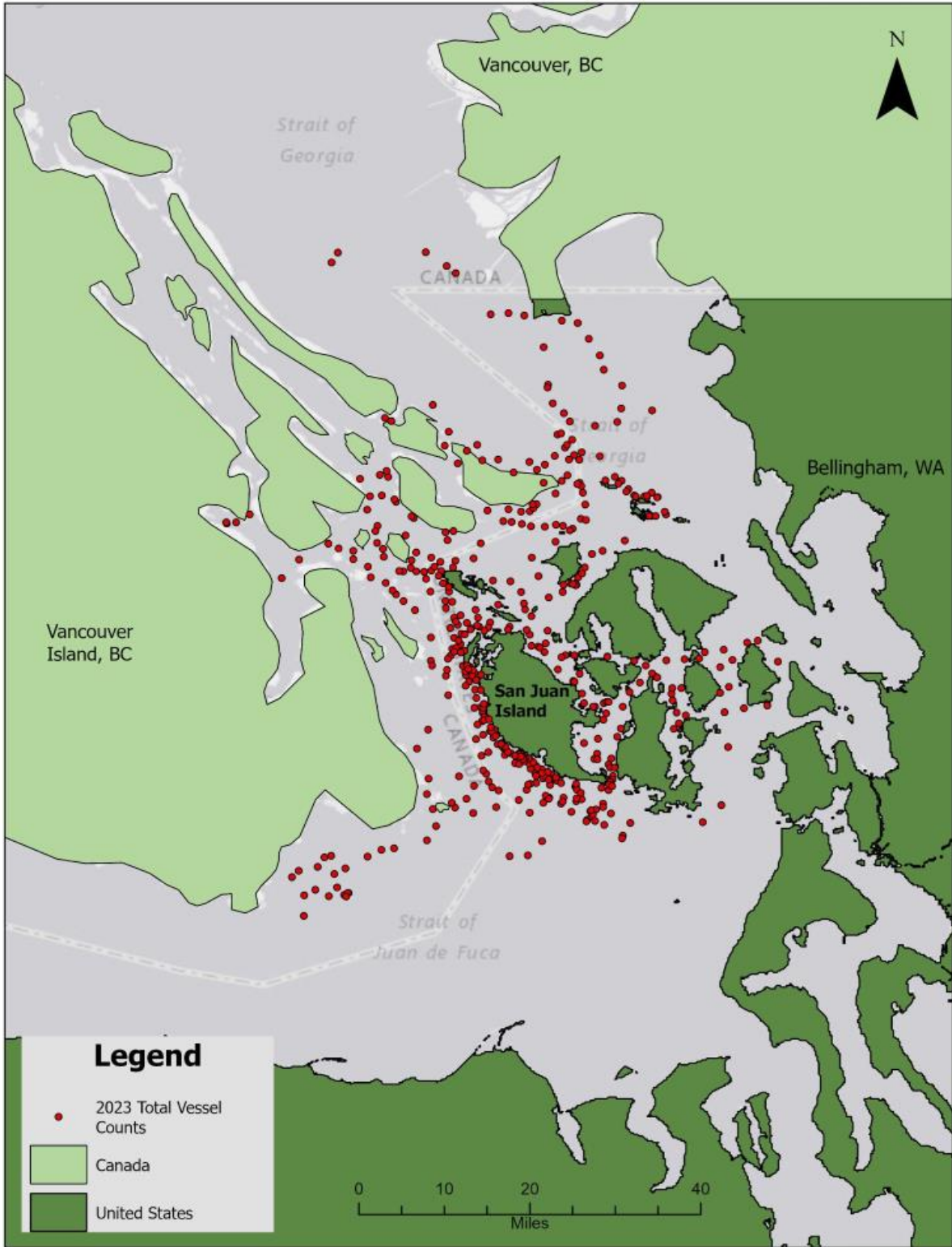


Figure 9: 2023 Soundwatch 478 Vessel Counts by location.

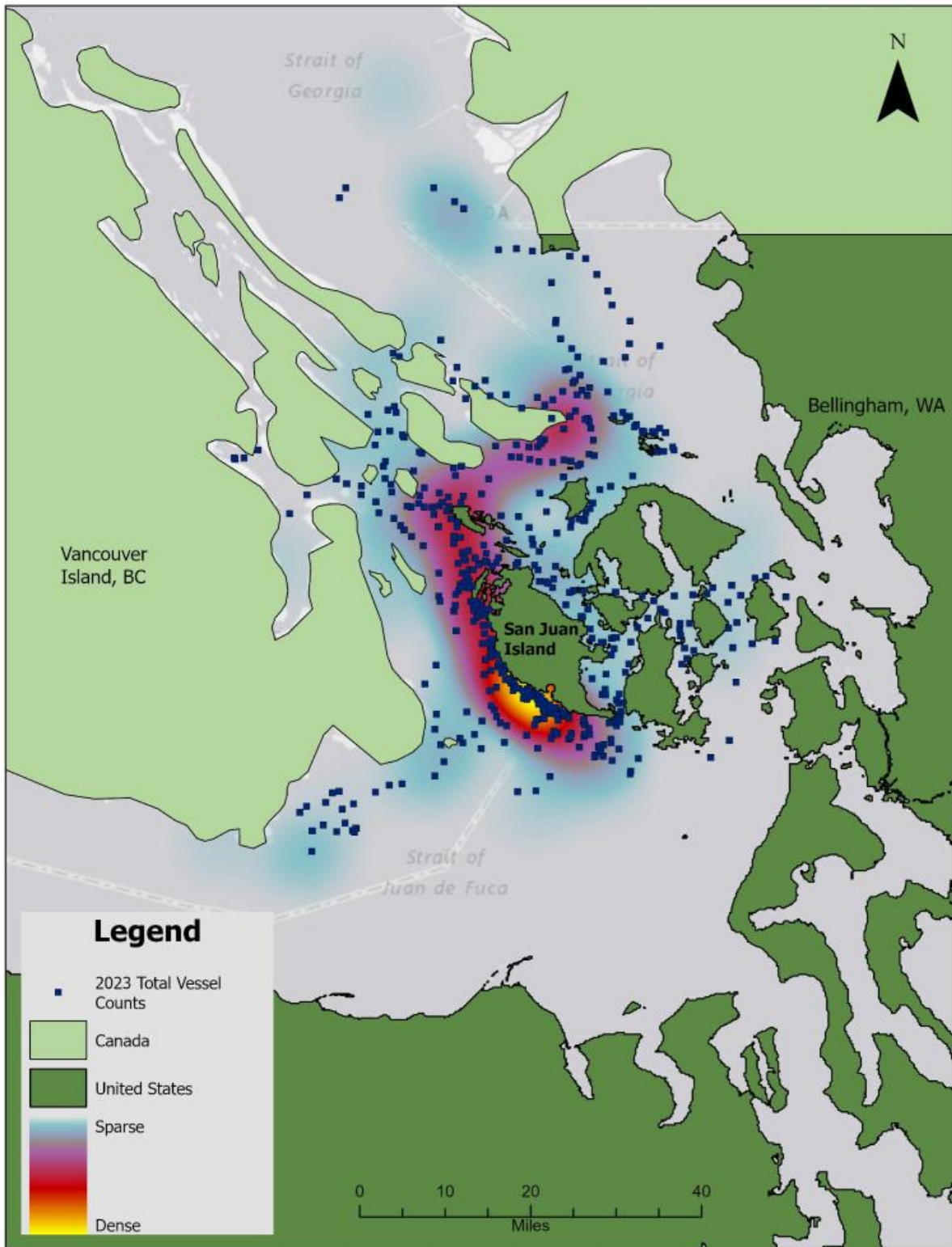


Figure 10: Total Vessel Count Locations from 2023 displayed over 2022 total vessel count locations heat map, comparing survey locations and distributions.

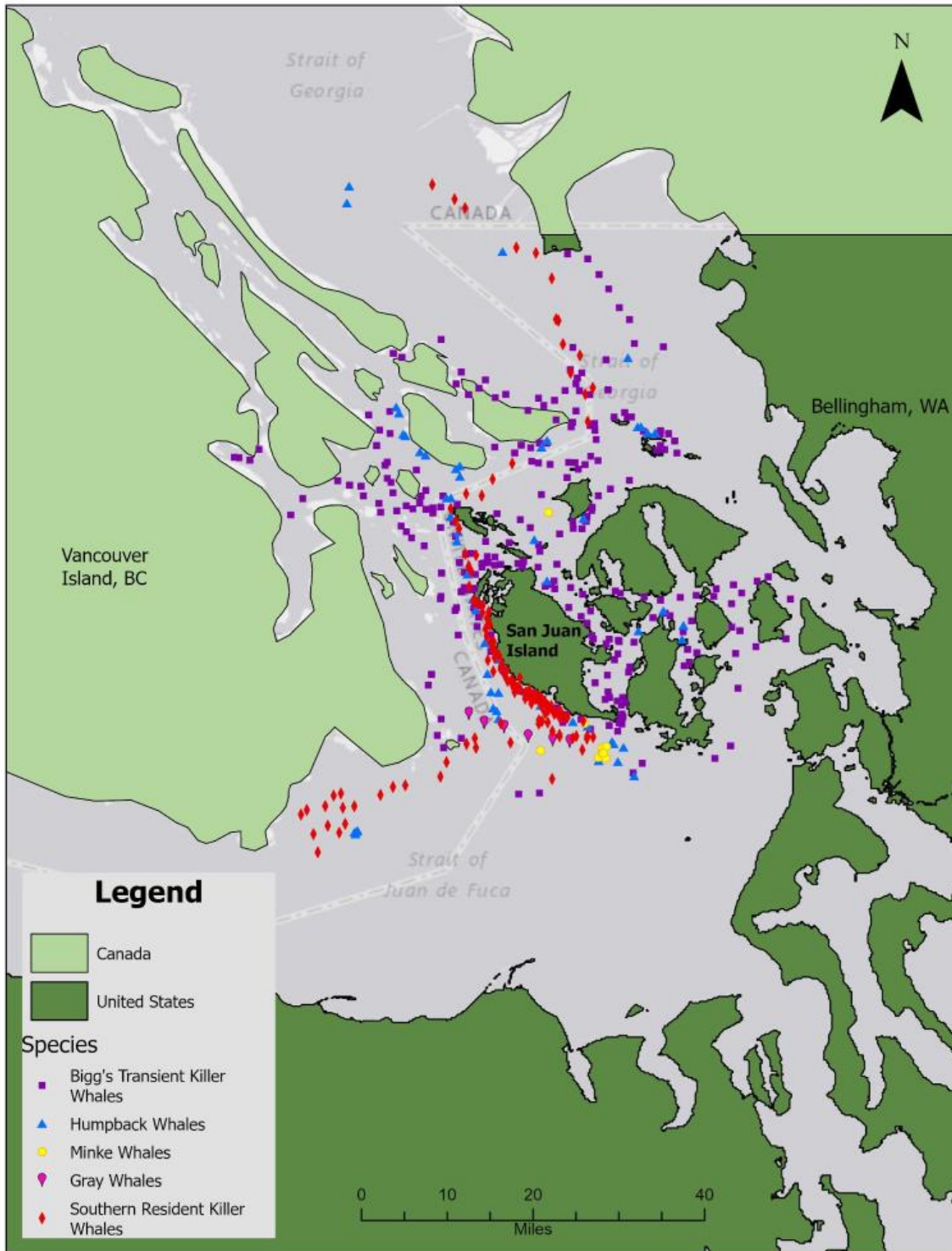


Figure 11: 2023 Vessel Counts by species of cetacean observed within the count.

Vessel Activities Around Whales

Figure 12 displays the type and number of vessels around whales in 2023. US EcoTours had the greatest presence around whales, except for August and September where recreational vessels had the greatest presence. Overall vessel activity around whales increased until peaking in July, dropping off again during August before having a spike in September.

The majority of vessels recorded in the vicinity of whales during the 2023 season were engaged in whale watching (Figure 13). US and CAN EcoTour vessels accounted for the highest percentage of whale-oriented activity in the vicinity of whales, followed by Monitoring/Enforcement vessels and Recreational vessels (Figure 14). Monitoring/Enforcement vessel percentage includes Soundwatch vessels and reflects the effort of monitoring/enforcement vessels as well as the nature of Soundwatch data collection.

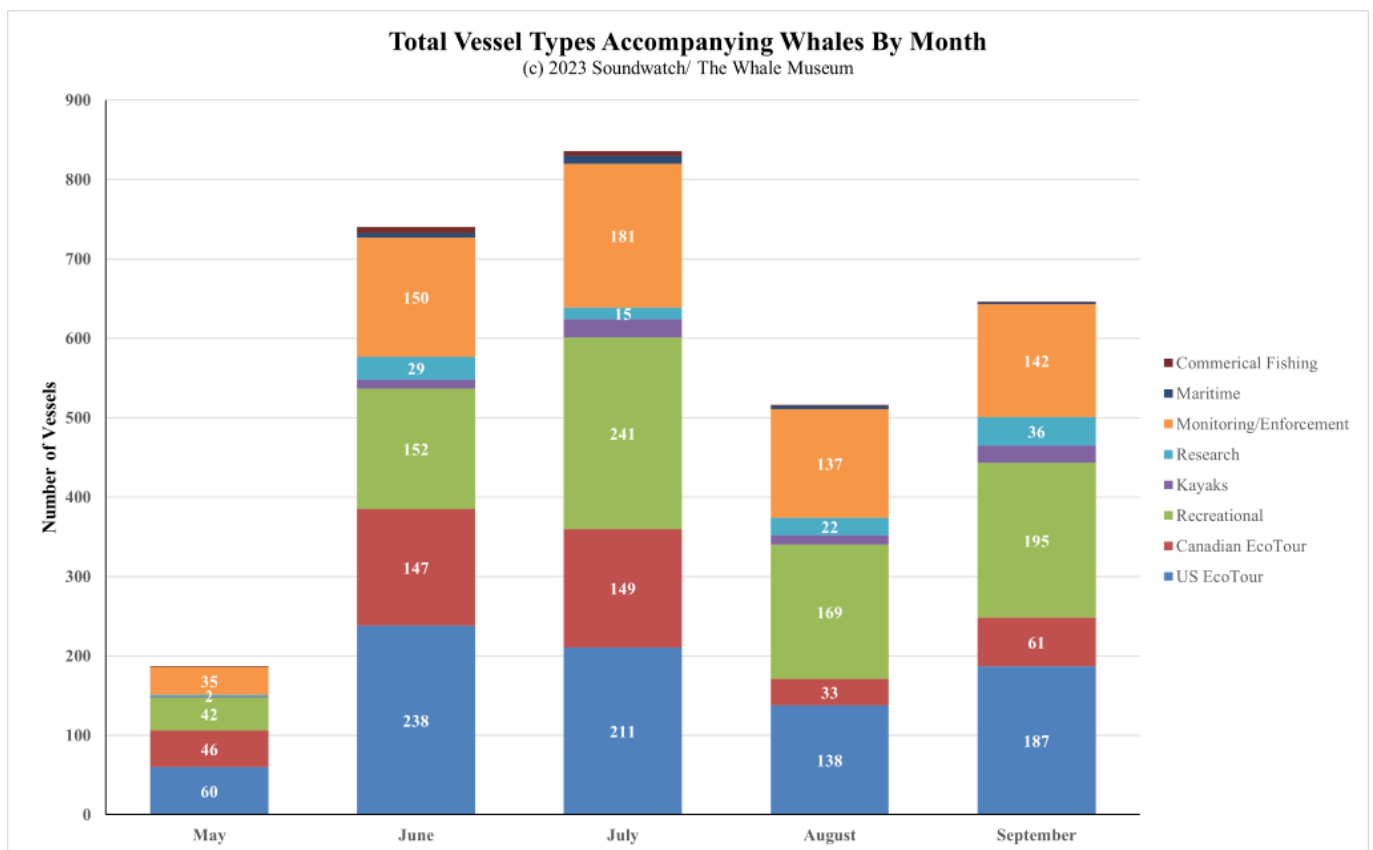


Figure 12: Total number of observed vessels by vessel type and month recorded in 2023.

Distribution of Vessel Activity within Half Mile of Whales (c) 2023 Soundwatch/ The Whale Museum

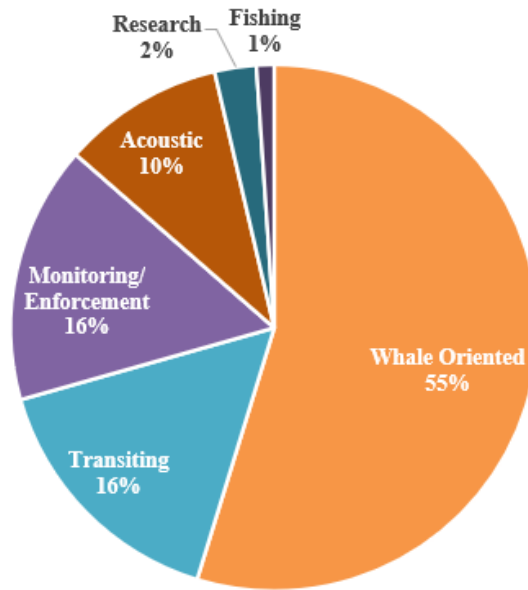


Figure 13: Distribution of vessel activity within half nautical mile of whales during the 2023 field season.

Vessel Distribution Whale Oriented (c) 2023 Soundwatch/ The Whale Museum

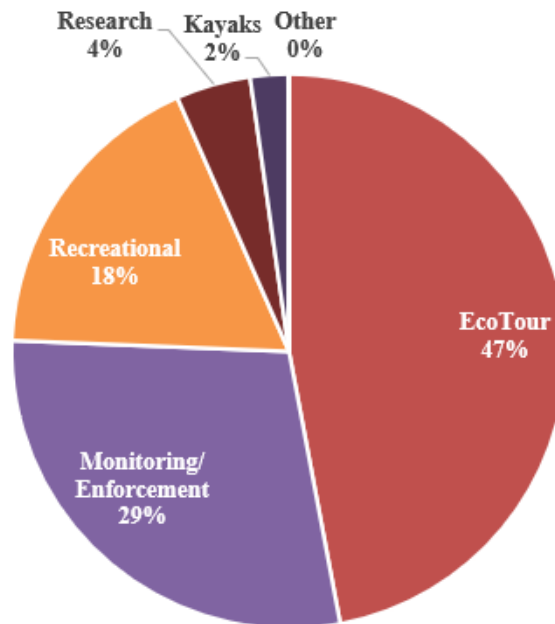


Figure 14: Percentage of 'whale oriented' vessel distribution by vessel categories during the 2023 season. 'EcoTour' includes both US and Canadian EcoTour vessels.

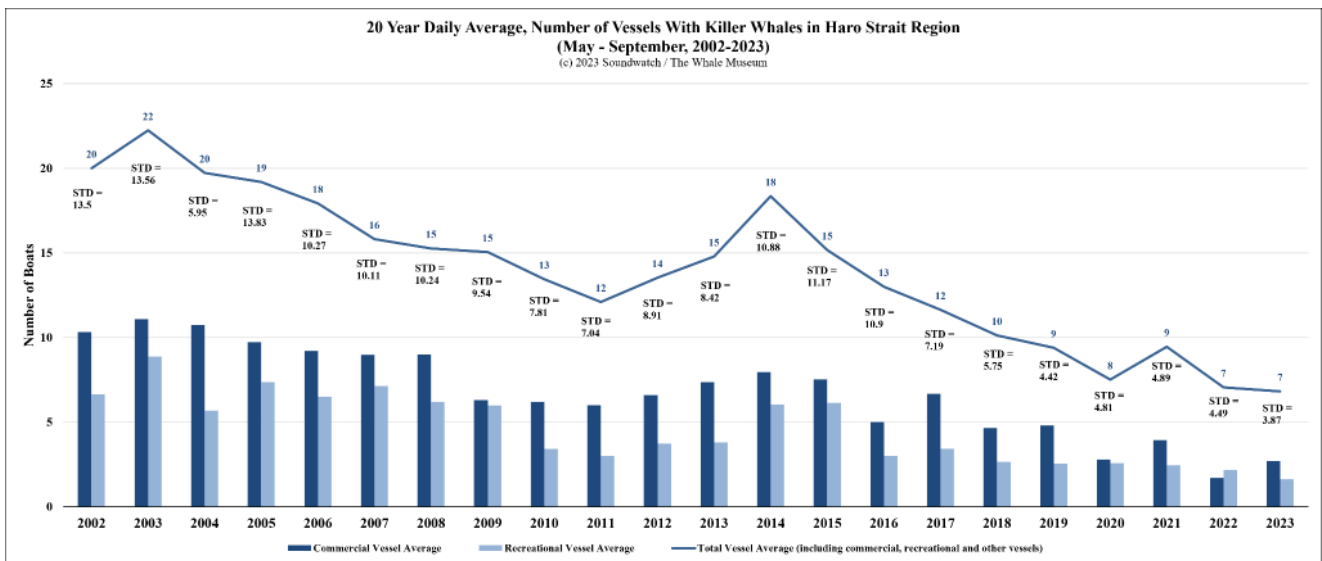


Figure 15: Average number (of recreational, EcoTour (commercial)) and total of all vessels with killer whales in the last twenty years in Haro Strait Region (May-September 1998-2016, 2018-2023 and *June-September 2017 and June-October 2020).

Number of Vessels Accompanying Whales

During May-September 2023, the total average number of vessels observed within one half-mile of whales was 7, a continued 20-year low for vessels around all killer whale EcoTypes. The average number of recreational vessels fell to the lowest recorded to date from 2.2 in 2022 to 1.6 in 2023 however commercial vessel average did see a slight increase (from 1.7 in 2022 to 2.7 in 2023) (Figure 15), which once again shows the increase in Canadian/US EcoTour vessels seen earlier.

In January 2021, WDFW’s Commercial Whale Watch Licensing Program (CWWLP) codified rules permitting a maximum of 3 EcoTour vessels within one-half nautical miles of a group of SRKWs. The 2023 season saw a similar trend of the decrease in the total average number of vessels accompanying killer whales (Figure 16a). During the 2023 field season, there was a notable decrease in the presence of SRKWs (142 counts) within the study area in comparison to 2022 (289 counts). However, there was a notable increase in the presence of Transients killer whales with 142 counts in 2022 compared to 263 counts in 2023 (fig 31a). This highlights the low presence of SRKWs in our study site this year compared to last year, which can be seen by the low number of vessels accompanying SRKWs as well (fig 16b). When compared by EcoType, the average number of EcoTour vessels accompanying SRKWs doesn’t exceed 3 during any summer month (Figure 16b). This may be a result of commercial vessels opting to view Transient killer whales and other species without CWWLP designation instead of SRKWs paired with the increase of commercial vessels in general in the 2023 season.

Vessel activity in the vicinity of whales was primarily characterized by EcoTour and recreational vessels (Figure 17). Whale-oriented activity was the most commonly observed activity within one-half mile of whales (Figure 18).

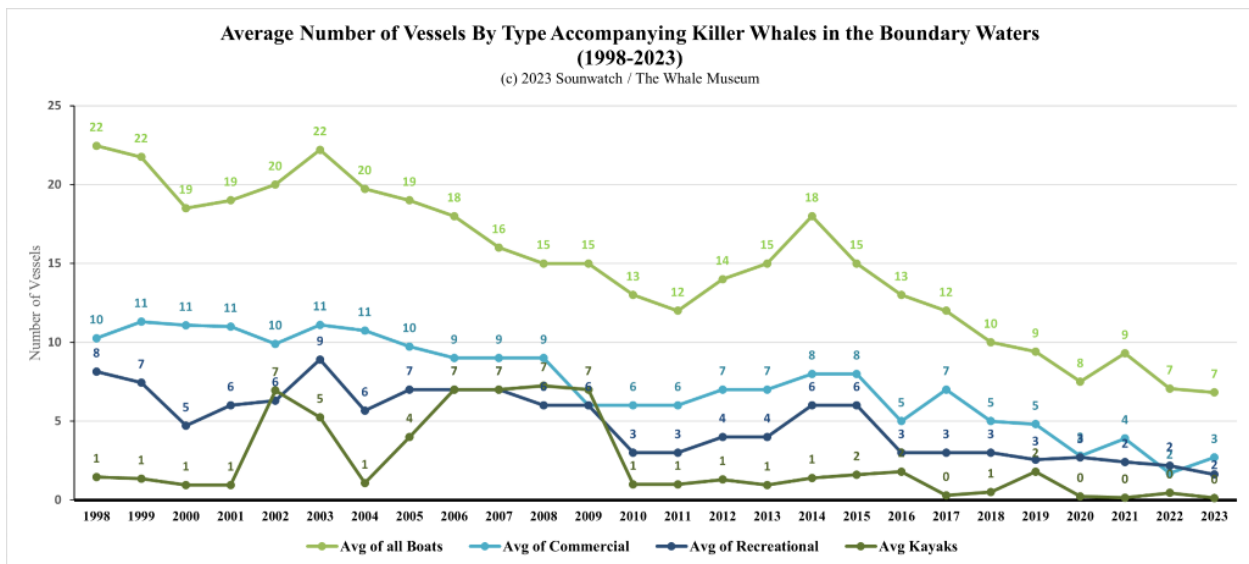


Figure 16a: Average number of vessels by vessel category within one half-mile of killer whales from 1998-2023 in the Salish Sea.

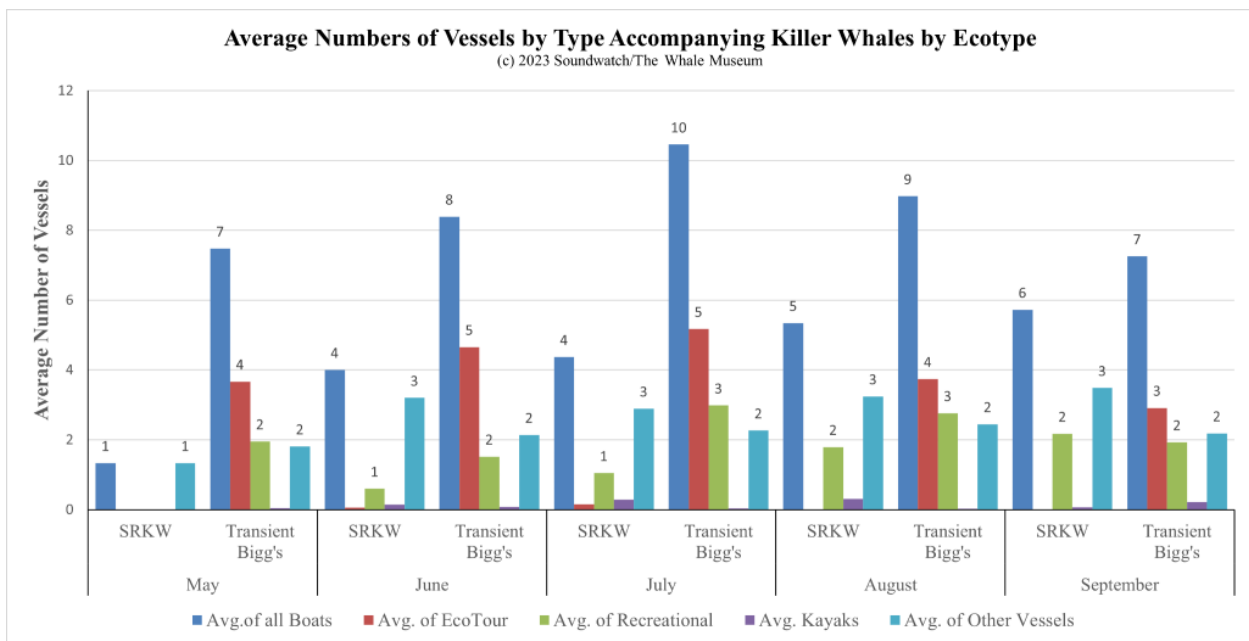


Figure 16b: Average number of vessels by type accompanying killer whales by EcoType. “Other Vessels” includes commercial fishing, ferries and cargo ships, research, monitoring and enforcement.

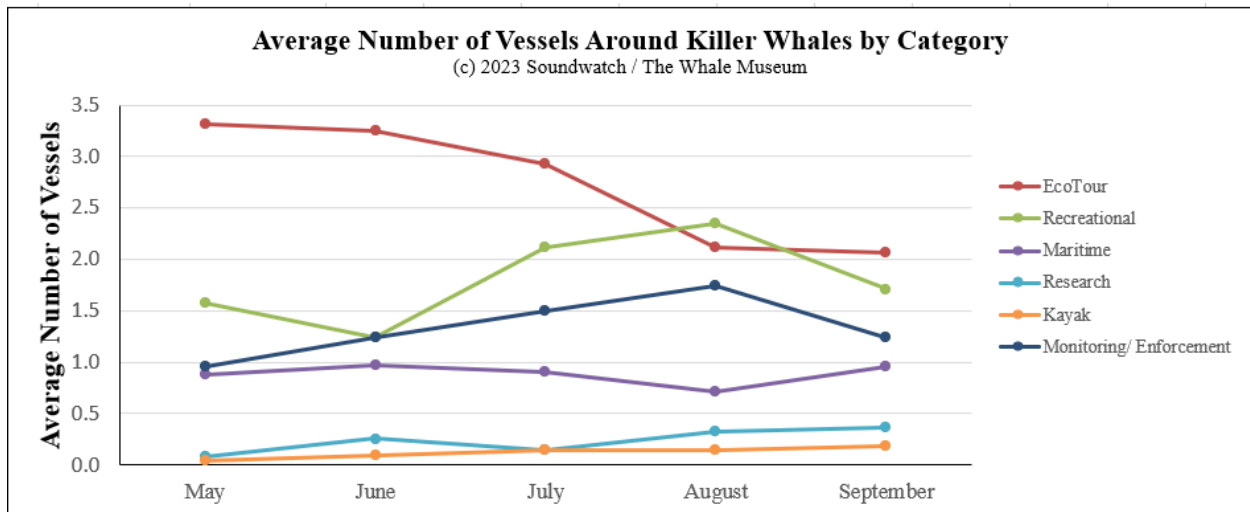


Figure 17: Average number of vessels within one half-mile radius of killer whales by vessel categories and month in 2023 Soundwatch vessel counts.

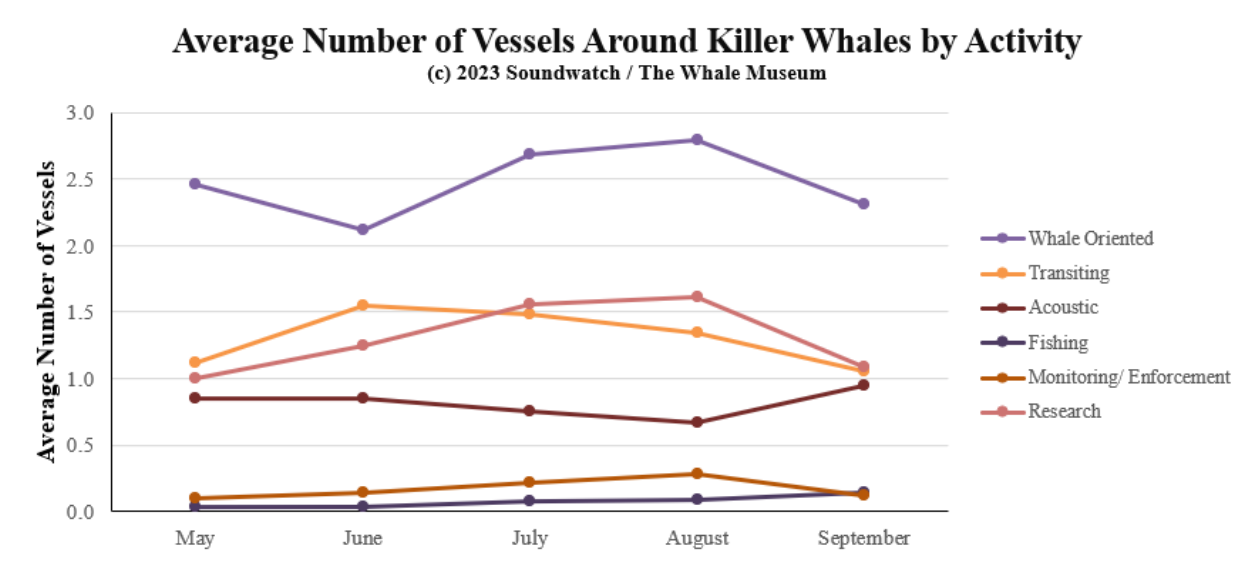


Figure 18: Average number of vessels within one half-mile radius of killer whales by vessel activity and month in Soundwatch 2023 vessel counts.

The 2023 annual maximum number of total vessels observed with whales was 25 (Figure 20). Maximum EcoTour vessel numbers remain fairly consistent throughout the summer months, with the peak in July before dropping in the later summer months (Figure 19). Recreational vessel numbers are fairly consistent but increase slightly in August before spiking in September (fig 19). Maximum kayak numbers decline swiftly after July, taking a dip in August before climbing back in September, which could be due to air quality concerns during the 2023 wildfire season in the regions (Figure 22b)

The 2023 average number of vessels by time of day peaked at 8.3 vessels during the hour of 1101-1200 and generally declined from there. This pattern continues to disagree with the historical trend of ‘peak times of day’ in the morning and mid-afternoon with a mid-day lull

during trip turn-around times, shown by the 21-year average (Figure 21). CWWLP rules dictate that viewing of SRKW by authorized vessels may only occur between the hours of 10:00am-12:00pm and 3:00pm-5:00pm. The 2023 average does not particularly align with these time restrictions, likely a result of minimal EcoTour vessel presence around SRKW (Figure 16b). Both whale presence and EcoTour whale watch schedules contribute to monthly variation. It is possible that daily whale watching tours have become more frequent and flexible to account for the unpredictable nature of whale presence as well as the demand of whale watch customers. It is also possible that as whale sightings reporting methods advance, vessels of any type seeking whales may be able to ascertain their location and engage in whale watching. Vessel averages by time of day also reflect Soundwatch’s operations effort (Figure 21).

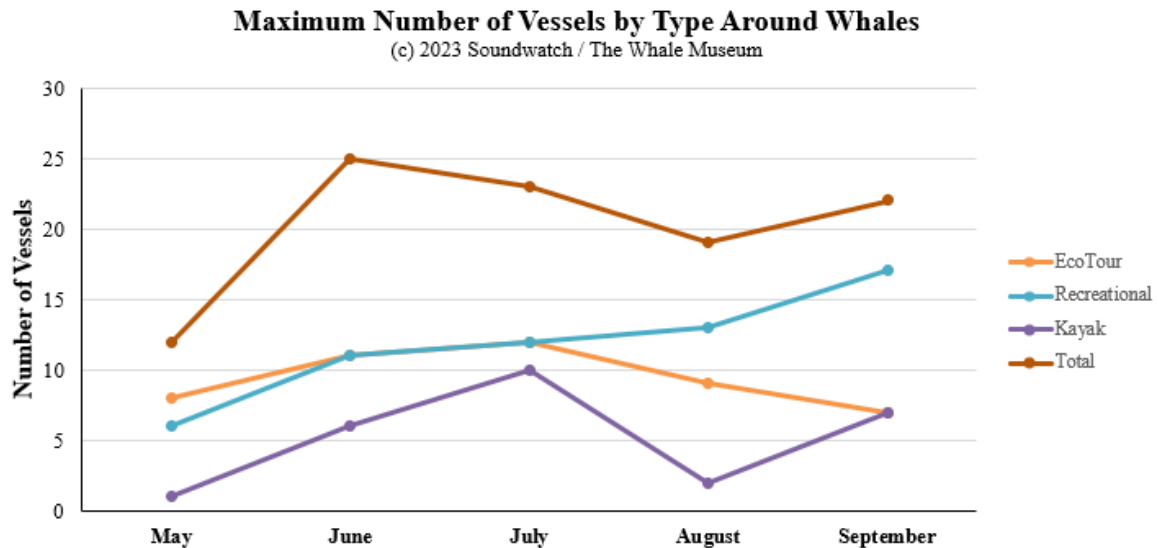


Figure 19: Maximum number of vessels by category and month around killer whales from May-September 2023.

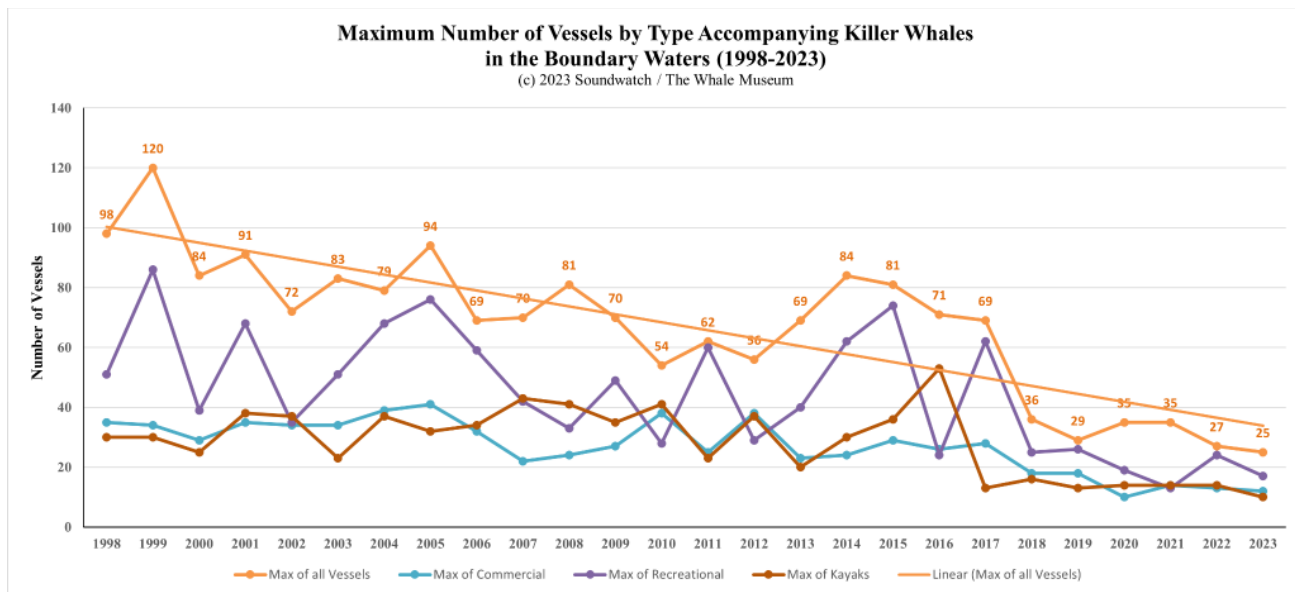


Figure 20: Maximum number of vessels within one half-mile of killer whales in the Salish Sea by vessel category from 1998-2023.

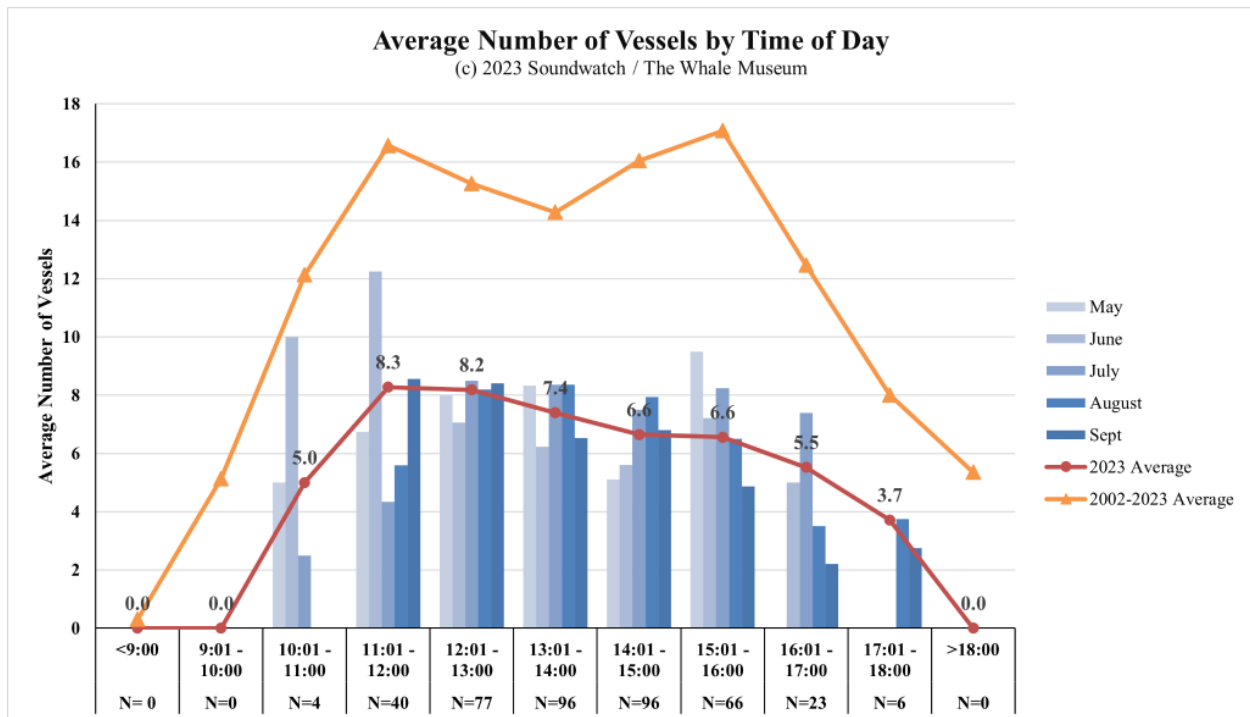


Figure 21: Average number of vessels by time of day includes all vessel categories, the average for 2023 and the 22-year average.

Outreach and Education

The Soundwatch Boater Education Program includes an outreach and education component that is primarily achieved by (1) on-water vessel contacts; (2) off-water via “Dock Talks” and The Whale Museum; (4) Kayak Education and Leadership Program (KELP); and, (5) an increasing presence on social media.

On-Water Education

Soundwatch regularly encounters recreational vessels in the vicinity of marine wildlife and/or wildlife habitats. Contact is made with these vessels either by VHF radio or alongside approach. It is Soundwatch’s intention to contact every vessel possible in the vicinity of whales, regardless of whether or not the vessel is violating regulations. Upon contact, Soundwatch vessel operators inform the boaters of *Be Whale Wise Marine Wildlife Guidelines for Boaters, Paddlers and Viewers* and the *U.S. federal/state vessel regulations* for killer whales, and distribute *Be Whale Wise* brochures if possible (Appendix A3). Due to COVID-19 precautions, Soundwatch continued to suspend on-water distribution of materials.

During the 2023 season, Soundwatch contacted 519 recreational vessels for a total of 1,309 boater contacts, averaging 2.52 boaters per vessel. The 2023 season saw a similar trend in comparison to 2022, with fewer contacts during June with a subsequent spike in July (Figure 22a). However, while in 2022 boater contact reached its peak in July and decreased from there,

there was a drop in contacts during August that then spiked in 2023. This could possibly be due to the peak in hazardous air quality conditions due to the 2023 wildfire season in the region (Figure 22b).

Outreach and education efforts during 2023 from Soundwatch and other Be Whale Wise partners and Salish Sea stakeholders were significant and included increased social media presence and information broadcasted throughout the Salish Sea on both sides of the international border. At the state level, WDFW increased outreach efforts through informational materials, educational videos, press releases, and CWWLP-provisioned protocol for notices of vulnerable whales including calves and potentially unhealthy individuals not only to license-holders but to the general public as well. When contacted by Soundwatch, boaters were asked if they were familiar with *Be Whale Wise* and *U.S. federal/state vessel regulations* for killer whales. Of the vessels contacted, 43% were deemed to be correctly aware of the guidelines and laws (Figure 23). The greatest discrepancy between aware and unaware boaters occurred in September 2023. September also saw the highest overall number of recreational contacts, suggesting that September may have been a surprising peak season for recreation on the water in the study area (Figure 24), possibly as an after-effect of the dip in recreational vessel activity seen in August could be linked to air quality conditions (Figure 22b). The season saw a dip in increased awareness, from 67% awareness in 2022 to 43% awareness in 2023 (Figure 25). It is important to note here that boaters may have self-identified as aware despite potentially being unaware of current regulations, although Soundwatch made efforts to determine actual awareness. Comparable data from Cetus Research and Conservation Society’s Straitwatch stewardship program reflected 57% awareness of vessels contacted during the 2023 season (Cetus 2023).

Number of Recreational Boaters Contacted on the water by Soundwatch per month (N=1,309)

(c) 2023 Soundwatch / The Whale Museum

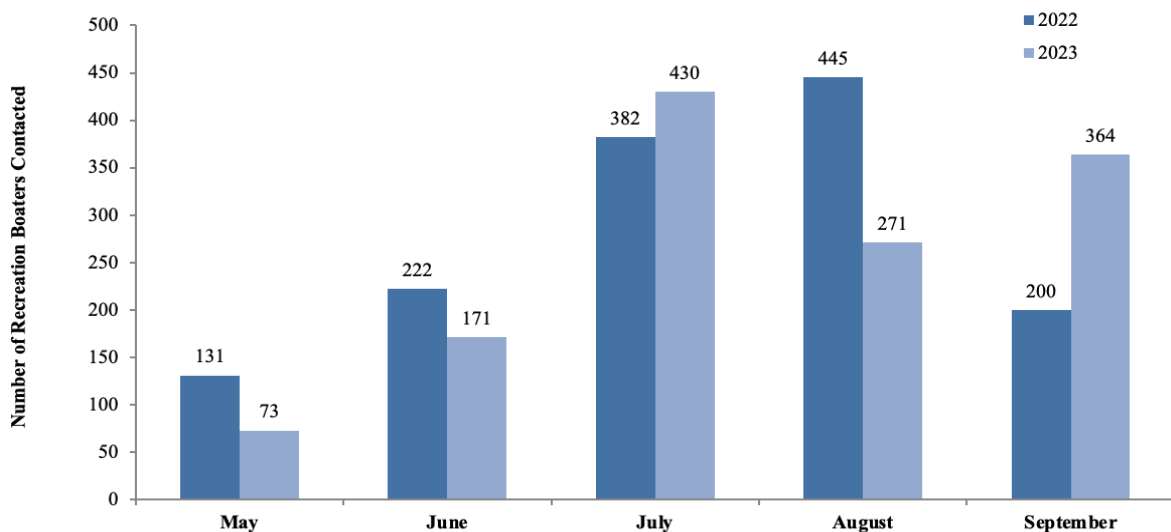


Figure 22a: Number of recreational boaters contacted by month on the water by Soundwatch for either prevention and/or education on vessel disturbance to killer whales in the region during the 2023 season (N=1,309) compared to the 2022 season (N=1,380).

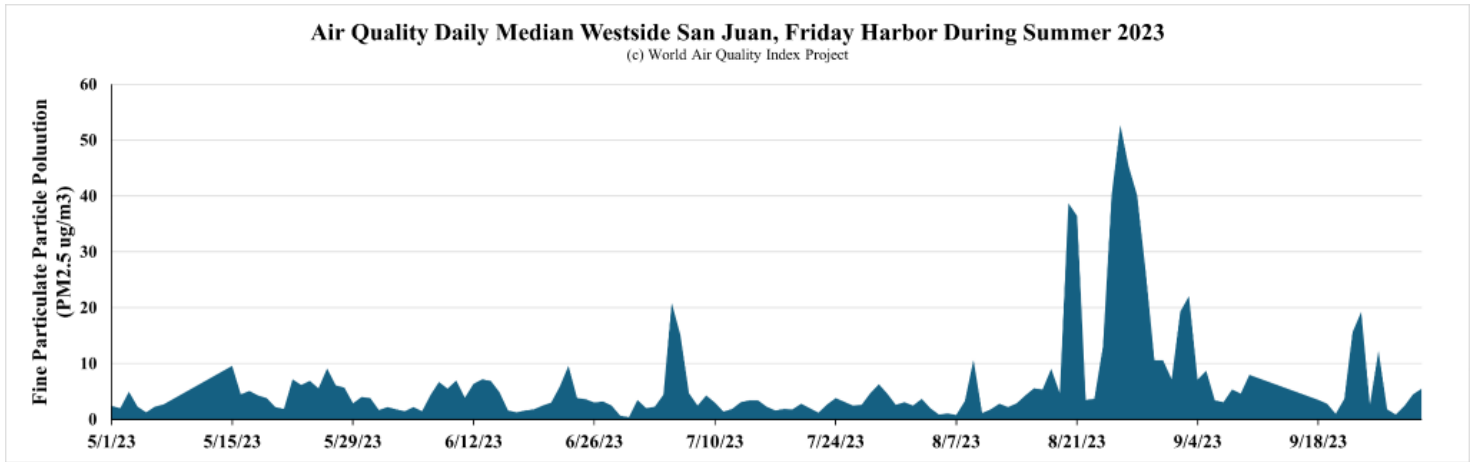


Figure 22b: Air Quality Daily Median from the West side of San Juan, Friday Harbor, Washington, USA in summer months (May 1-September 30) of 2023. All data presented in the figure were compiled from publicly available World Air Quality Index Project. Fuel prices peak during August and early September.

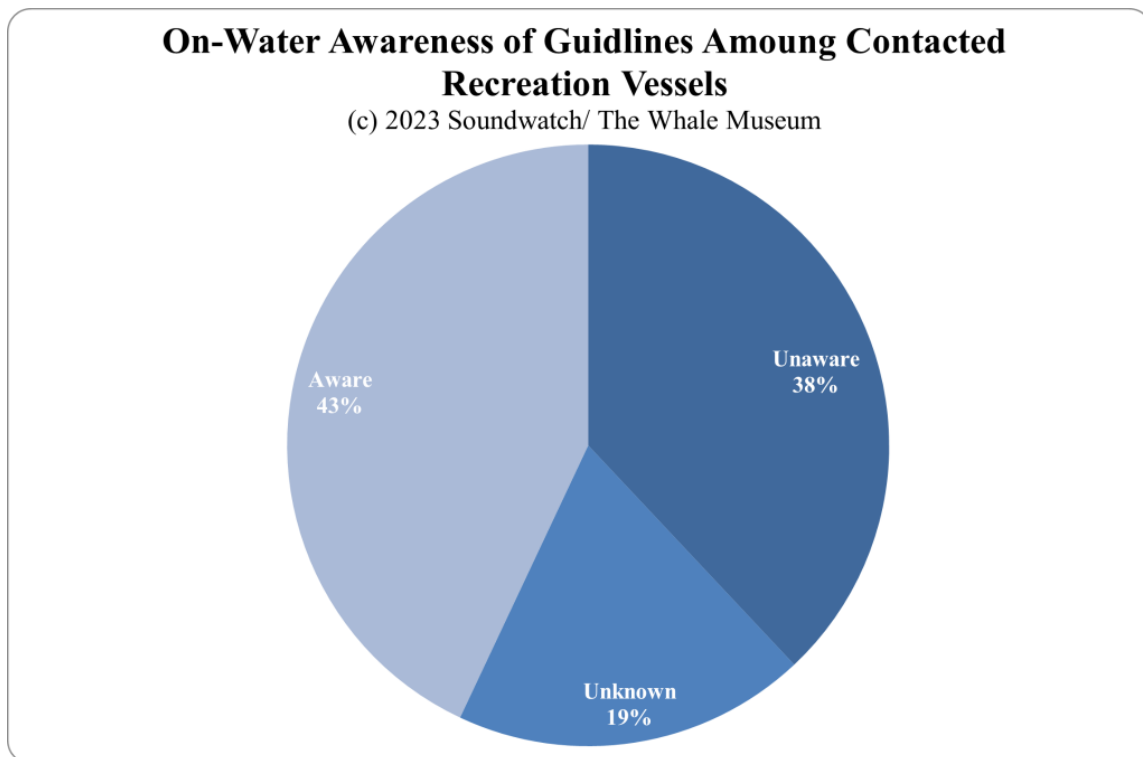


Figure 23: Awareness of Be Whale Wise Guidelines among contacted recreational vessels in 2023.

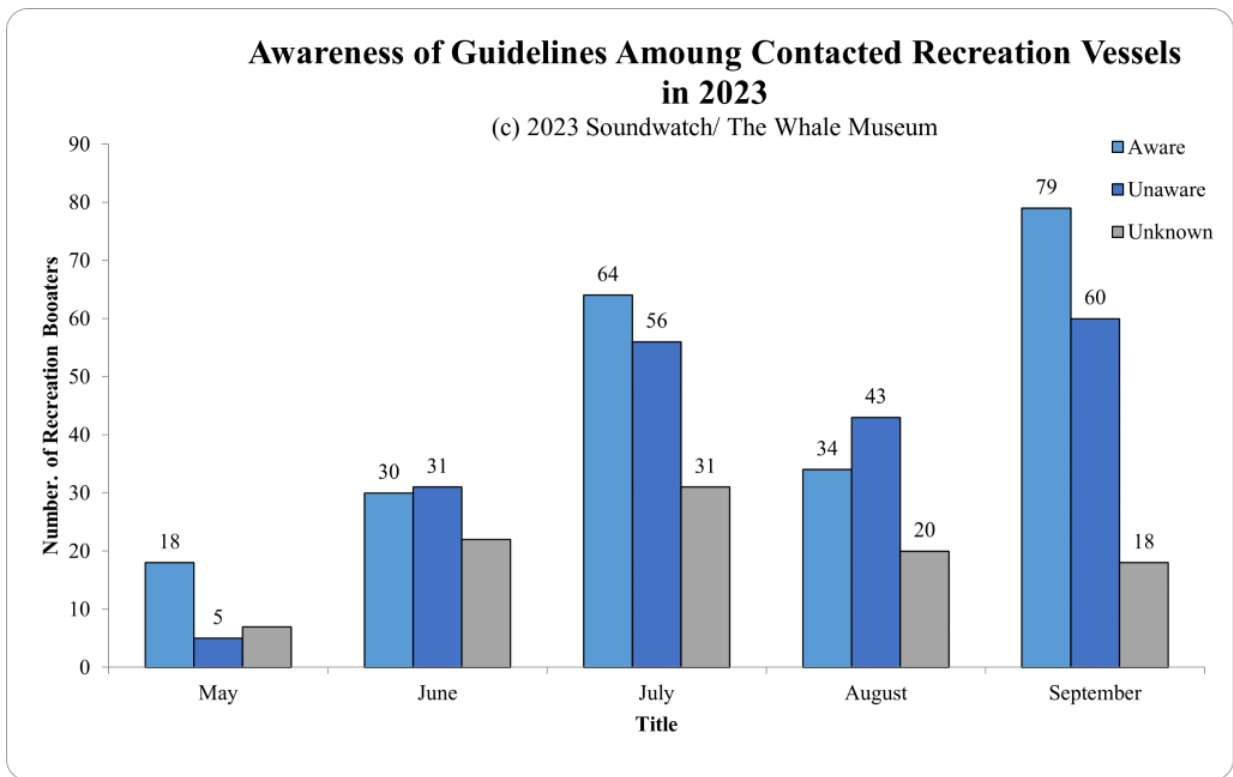


Figure 24: Number of recreational vessels contacted and the awareness of Be Whale Wise Guidelines by month in 2023.

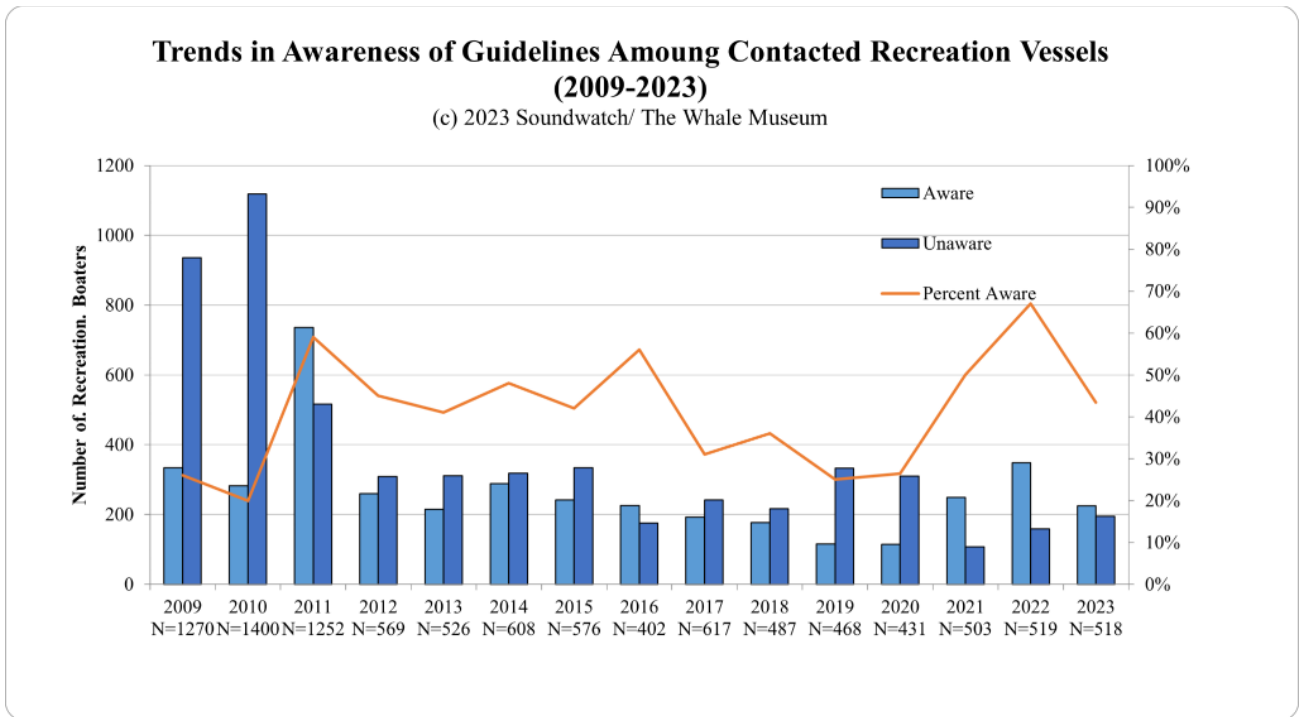


Figure 25: Trends in Recreational Vessels Awareness of Guidelines Contacted by Soundwatch from 2009 – 2023.

Soundwatch crew recorded the registered homeports of contacted vessels when available. Registered ports most commonly contacted in 2022 were Anacortes, Bellingham, Lopez Island, San Juan Island, and Seattle, Washington, as well as Vancouver, Victoria, and Sidney, British Columbia, Canada (Figure 26). Homeports outside of the Salish Sea region were also recorded, including as far as Newport, Rhode Island, St. Petersburg, Florida, and Peru (Figure 27).

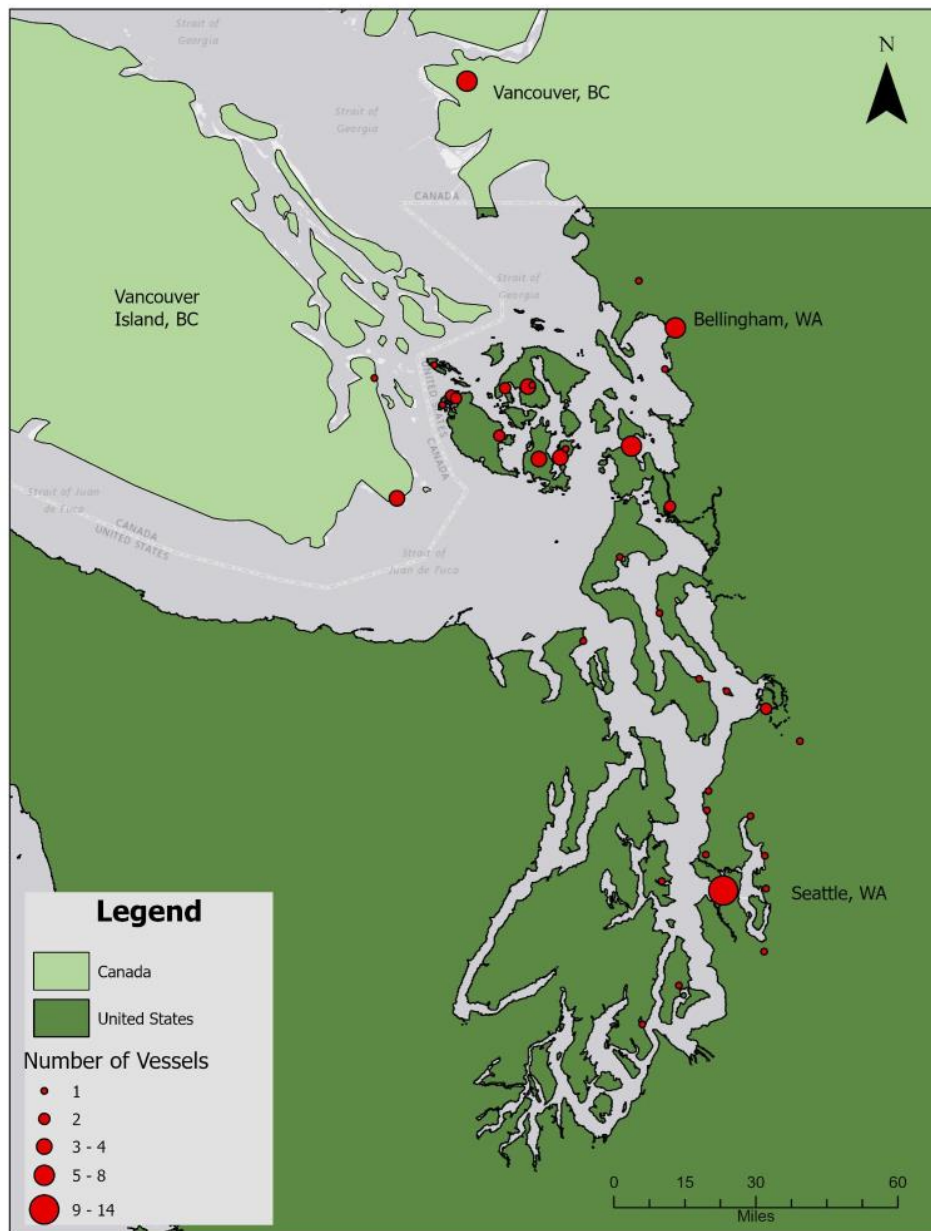


Figure 26: Recreational vessel home ports in the Salish Sea, as recorded by Soundwatch from May – September 2023.

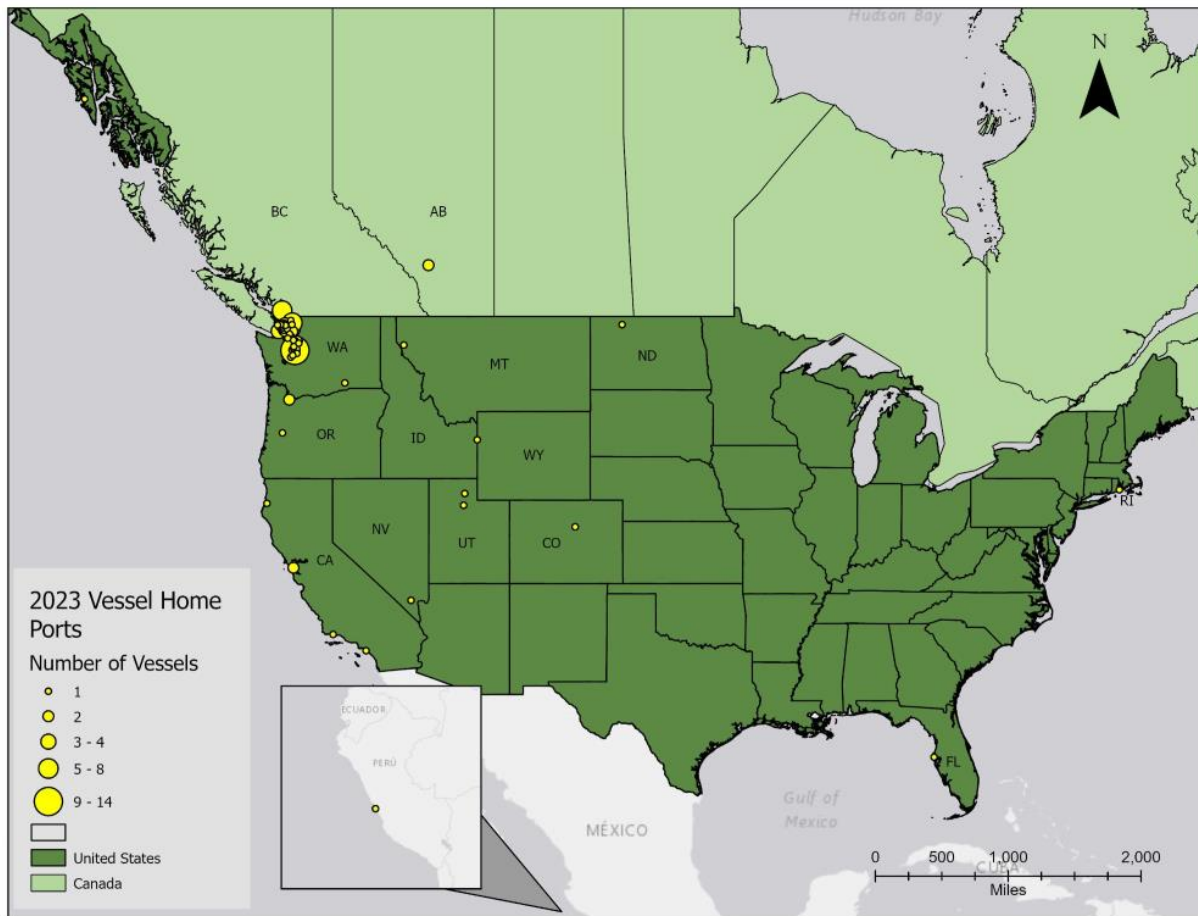


Figure 27: Recreational vessel home ports outside of the Salish Sea as recorded by Soundwatch from May – September 2023.

Of vessels contacted, 51% were transiting through the area and 44% were actively engaged or intended to engage in whale watching activities, and 5% of vessels were engaged in fishing in proximity to killer whales (Figure 28a). This breakdown of activity of vessels suggests a deviation from the increasing trend in transiting activity compared to whale-oriented seen in previous years (38%, 48%, 58%, 63% transiting in 2019, 2020, 2021, and 2022 respectively). When contacting recreational boaters, Soundwatch crews found that observed transiting activity was supported by the vessel’s stated purpose of activity. However, when Soundwatch approached vessels observed to be engaged in whale watching, the vessel’s stated purpose of activity did not match as closely (Figure 28b). This may be due to a lack of awareness or compliance of regulations, perception of Soundwatch as an enforcement entity, and consequent reluctance of the contacted vessel to share their intentions.

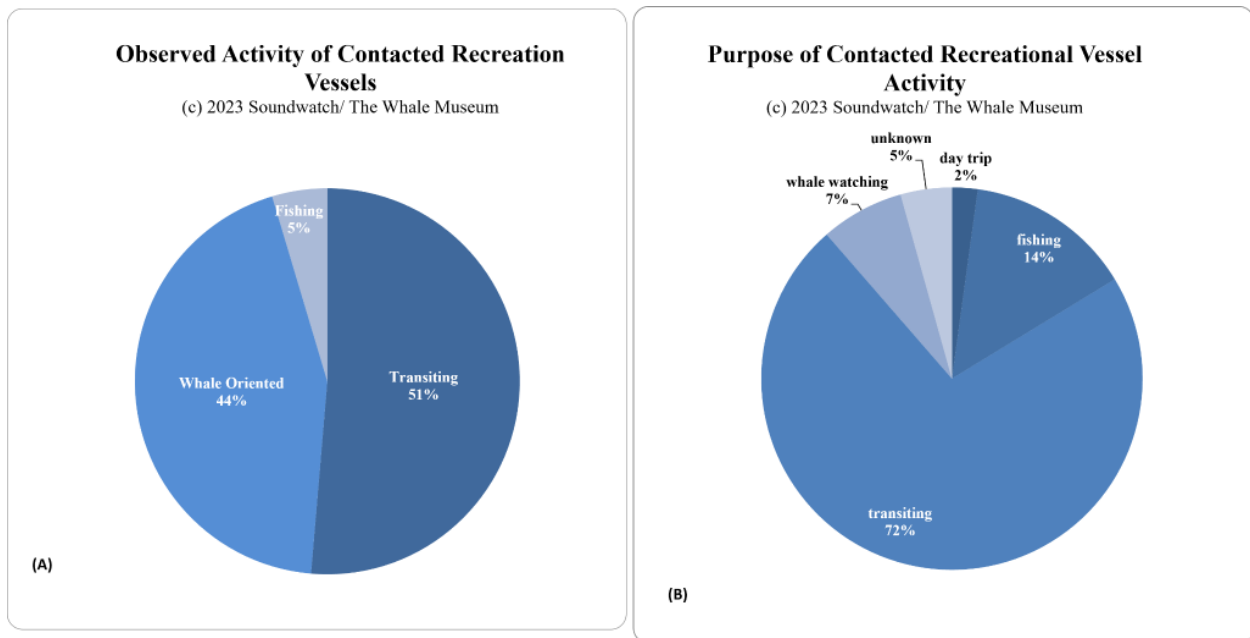


Figure 28a: Observed Activity of Recreational vessels contacted by Soundwatch in 2023.
 Figure 28b: Recreational vessel contact responses to “Reason/purpose for visiting the region?” in 2023.
 “Other/Unknown” responses include individual contacts who did not disclose their purpose of activity.

In order to characterize the whale-oriented recreational vessel audience, Soundwatch asked boaters how they had located the whales they were watching that day. Out of 519 contacts, Soundwatch received 102 responses. These responses were compiled into categories shown in Figure 29. “Observing Whale Watch Vessels” includes such responses as following whale watch vessels to the present location, monitoring whale watch vessels on Automatic Identification System (AIS), or spotting a group of whale watch vessels not making way. “Social Media” includes responses related to platforms such as Facebook or Instagram, while “Word of Mouth” includes such responses as direct contact with friends or individuals who may have sighted the whales. Most boaters stated that they found whales “By Chance”, distantly followed by “Commercial Whale Watch” vessels (Figure 29).

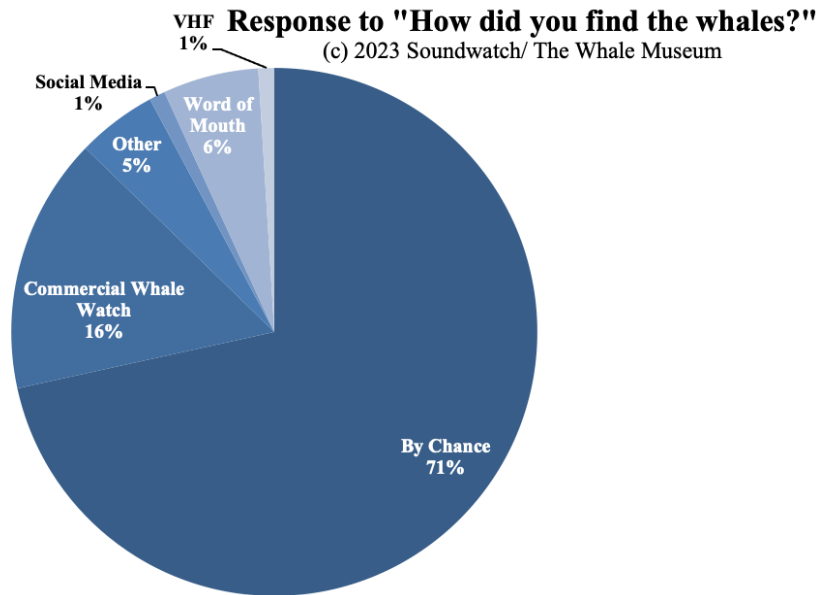


Figure 29: Recreational boater responses to “How did you find the whales?” during May-September 2023.

Off-Water Public Education

Soundwatch personnel conducted 19 “Dock Talks”, an off-water public education platform with visual aids and outreach materials for distribution. During Dock Talks, Soundwatch contacted 956 individuals: of these contacts, 25% were deemed to be correctly aware which shows a decrease from 59% of contacts in 2022 in this category of the guidelines and laws (Figure 30). This might be due to a larger number of people (956 in 2023 compared to 516 in 2022) contacted, meaning less time to address these questions at the dock talk. Dock Talks were typically held at the Port of Friday Harbor on a weekly basis.

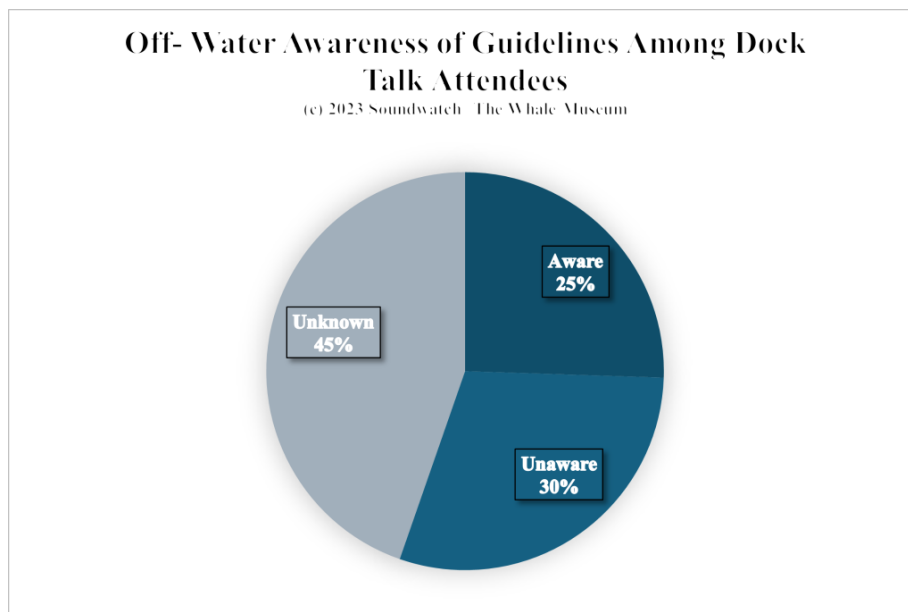


Figure 30: Off-water awareness of guidelines among Dock Talk attendees (n=956).

The Whale Museum

In July 2016, The Whale Museum installed a permanent exhibit featuring *Be Whale Wise*, Federal and State regulations for killer whales, and vessel effects on killer whales. Since 2016, the exhibit has been viewed by approximately 210,310 museum visitors and education program participants, with 27,895 visitors in 2023. Materials were also given to approximately 2,100 people through either The Whale Museum's Memberships and/or Orca Adoption Program.

Kayak Education and Leadership Program

The Soundwatch Kayak Education and Leadership Program (KELP) targets outreach to recreational and EcoTour kayakers and includes all other human-powered vessels such as paddle boards and canoes. Since 2010, Soundwatch has been contracted by San Juan County Parks to assist with the planning and implementation of a seasonal vessel launch permit, a Kayak Vessel Code of Conduct education program, and to collect data on kayaker use trends at the San Juan Island County Park (SJCP). However, during the 2020 season the San Juan County Park suspended requirements to participate in KELP due to initial concerns over COVID-19 and social distancing measures. Most commercial kayak companies suspended or delayed operations until later in the 2020 season, using returning kayak guides with previous KELP proficiency. Data collection on vessels launching from the park was done through a boater self-reporting system and was administered by the San Juan County Park staff (Appendix C and D).

When paddlers were approached on the water, Soundwatch driver/educators communicated the special concerns for kayakers paddling around marine wildlife. In January 2021, WDFW's CWWLP established training and rules for EcoTour kayak companies. This training was developed in collaboration with Soundwatch.

Social Media

During the 2023 season, the Soundwatch Instagram page @soundwatch_twm posted 23 posts and has 1,877 followers, continuing the increasing trend we saw in 2022 and reaching local and international audiences. Ongoing effort is necessary to continue vital growth and establish a social media presence that will support Soundwatch education and outreach objectives.

Be Whale Wise Website

Soundwatch maintained the Be Whale Wise Outreach Toolkit along with other partners and stakeholders. The objective of the toolkit is to provide education and outreach resources to the public while encouraging engagement and comprehension of the regulations and guidelines. The toolkit is available to the public and can be accessed at <https://www.bewhalewise.org/outreach-toolkit/>

Whale Behavior

Killer Whale Attribute Data

Soundwatch collected killer whale behavior on the hour and half hour, totaling 405 killer whale behavior counts for the 2023 season. Behavioral categories were Modified Rest, Traditional Rest, Milling, Socializing (surface active), Traveling, and Foraging (Appendix K1 & K2). Evidence of prey was necessary to classify ‘foraging’ behavior. In the event that both SRKWs and Transient killer whales were within range of Soundwatch on the same day, preference was given to monitoring SRKWs.

Travel was the predominant behavior in all months and across both EcoTypes (Figure 31a). SRKWs were present in Soundwatch’s study area with less frequency than in 2022 (Figures 31b, 31c). Soundwatch observed SRKWs during all months of the 2023 field season for a total of 20 days, approximately half than previous year’s count (Figure 31c).

As in previous seasons, SRKW continued to typically display wide spreading between individuals in foraging areas. However, Soundwatch observed and recorded more instances of flank grouping and traditional resting lines than in previous years. This behavior was primarily observed while traveling inbound in the Strait of Juan de Fuca and on the west side of San Juan Island near False Bay.

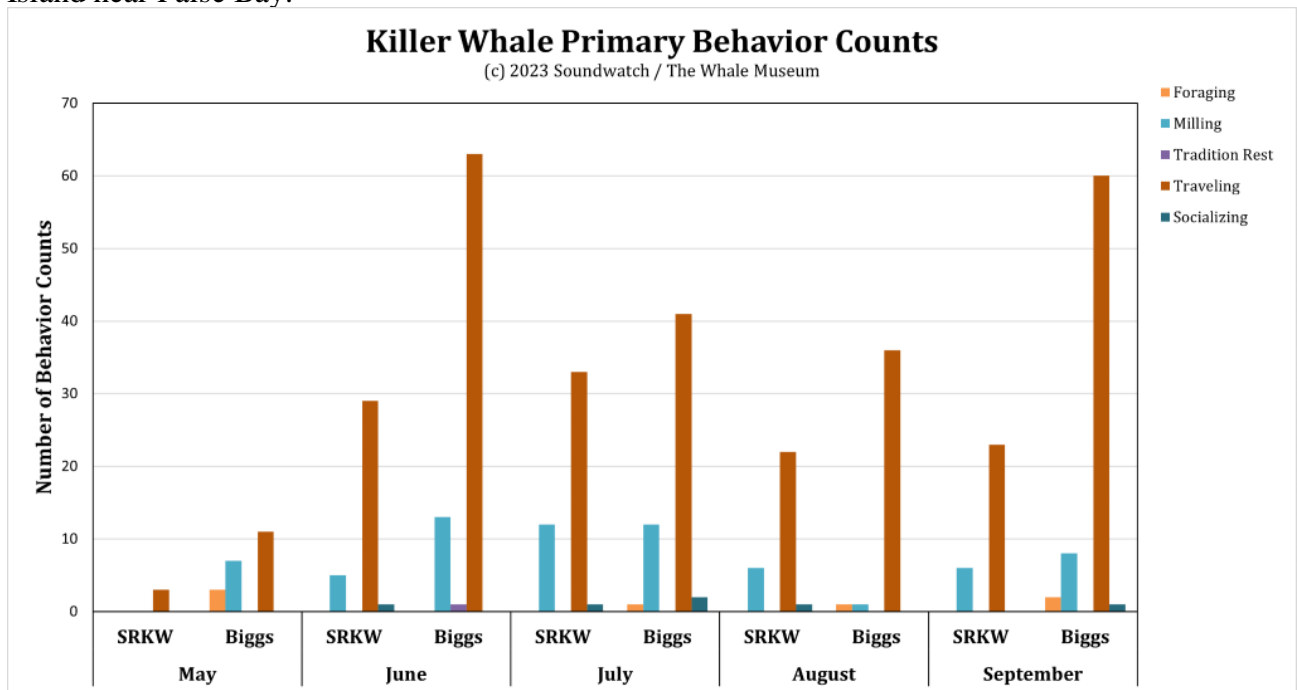


Figure 31a: Southern Resident and Transient killer whale behavior counts from May-September 2023 conducted near the hour and half hour by Soundwatch.

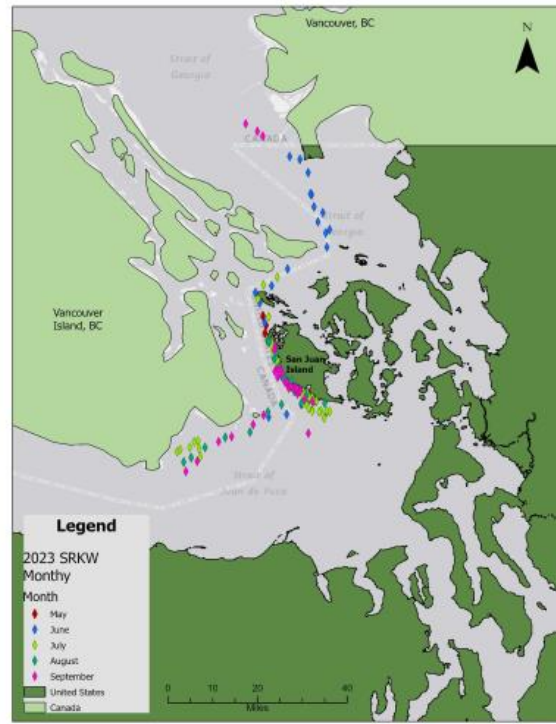
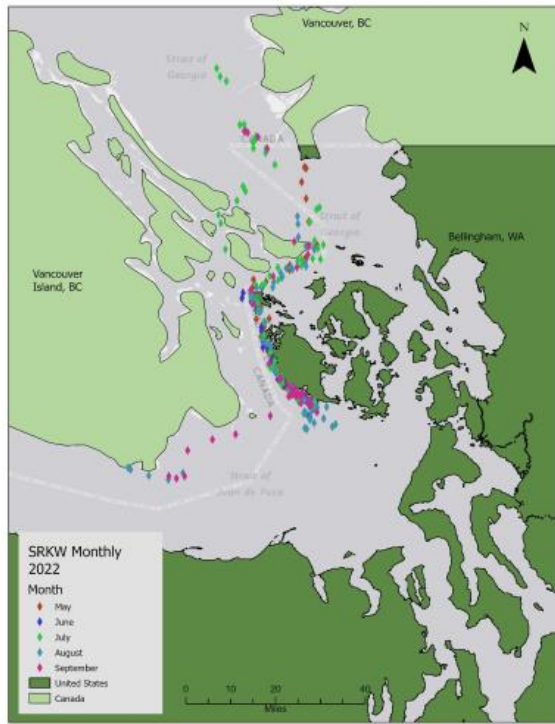


Figure 31b: SRKW presence by month in 2022.

Figure 31c: SRKW presence by month in 2023.

Other Large Cetacean Attribute Data

Soundwatch recorded whale behavior data for all large cetaceans encountered during the 2023 season; 20 days (57 data counts) opportunistically with Humpback whales and 5 days (9 data counts) opportunistically with Minke whales. Figure 32 shows Humpback whale primary behaviors recorded by Soundwatch from May-September 2023. The most common primary behavior across all months was traveling. Foraging behavior would only be recorded if there was evidence of prey or obvious foraging behavior. Minke whale and gray whale data have been excluded due to low/no sample size for whale behavior.

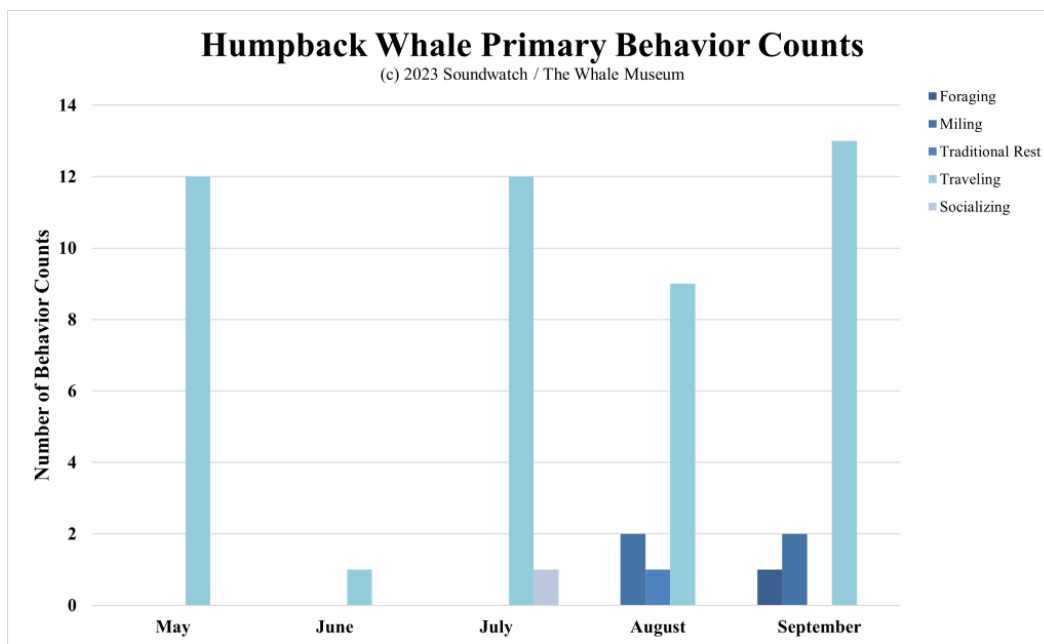


Figure 32: Humpback whale behavior counts from May-September 2023 conducted near the hours and half hour by Soundwatch.

Compliance and Incidents

Vessel Incident Data

Soundwatch *Vessel incident* data can be utilized to characterize types of vessels, types of vessel incidents, and geographic locations where vessel incidents are most commonly observed. A *vessel incident* is specifically defined as a driver of an EcoTour (commercial) vessel, recreational boat operator, kayaker or other vessel operating contrary to current voluntary *Be Whale Wise Guidelines*, the *Kayakers Code of Conduct*, the San Juan Marine Stewardship Area (including close proximity to National Wildlife Refuges, Voluntary No-Go Zones, etc.), the PWWA Commercial Whale Watch Guidelines and/or federal and state vessel regulations. Only trained Soundwatch staff driver/educators make the determination of an observation of a potential *vessel incident*. A set of standardized *incident descriptions* was established in 2007 and updated in 2011 to include the vessel regulations (Appendices J1 & J2). This standardized set of definitions is used by the U.S. and Canadian federal governments, Straitwatch of British Columbia, and Soundwatch of Washington State. Incidents are recorded opportunistically as they are observed using a *Vessel Incident datasheet* (Appendix H). Soundwatch staff are conservative in recording incidents.

Soundwatch uses summary statistics to analyze annual vessel incident data (Table 1); while useful, there are some obstacles when comparing historical data due to adaptive management of regulations and guidelines. For example, in 2016 a vessel between 200-300 yards distanced from SRKWs would not be considered in violation, but the same action in 2020 would be recorded as an incident. Beginning in 2017, vessel incidents were recorded for Transient and SRKWs, since both species are covered under the federal killer whale law. Similarly, in 2019 WDFW, San Juan

County, PWWA, and NOAA recognized and promoted a voluntary No-Go-Zone on the west side of San Juan Island from Mitchell Point to Cattle Point out a quarter of a mile and a half mile from the lighthouse at Lime Kiln State Park. This extended the previous voluntary No-Go-Zone from Eagle Point to Cattle Point, now including more of the popular fishing grounds near Eagle Point. As a result, there are more vessels operating within this expanded No-Go-Zone than in previous years and this may have driven the higher percent of incidents of vessels within the zone. To further complicate matters, it is difficult to measure the true effectiveness of guidelines and regulatory measures when they were not consistent on both sides of the U.S./Canadian border (trans-boundary) prior to July 2018 when Canada updated their federal guidelines to better coincide with the United States. However, today there are still discrepancies across the border in terms of cohesive regulations and guidelines and more discrepancies will be created once the 1,000 yard regulation is implemented starting at the beginning of 2025.

During the 2023 field season, Soundwatch recorded 498 incidents for a total of 557 violations (Table 2). Supplementary incident numbers for EcoTour vessels are provided by Soundwatch's Canadian sister program, Straitwatch, for a total of 61 Canadian EcoTour incidents and 34 US EcoTour incidents in their area of response during the 2023 season (Cetus 2023).

Recreational private motors were responsible for 68.2% of total recorded incidents, most frequently violating the 7kt speed limit when within one-half mile of whales (Figure 33).

Behavior Category	Yearly Incident Percentages																										
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
•Note Categories Not Used During All Years																											
Leapfrogging	37%	31%	23%	1%																							
Under power within 0-100 yards of whales	6%	4%	5%	4%	5%	12%	9%	10%	12%	15%	12%	13%	12%	8%	4%	10%	9%	7%	9%	9%	2%	5%	9%	6%	3%	5%	4%
Stopped within 0-100 yards of whales																											
Under power within 100-200 yards of whales																											
Stopped within 100-200 yards of whales																											
Within SII No-Go Zone	39%	26%	17%	17%	7%	13%	4%	8%	4%	5%	6%	8%	10%	6%	6%	2%	0%	2%	2%	<1%	15%	7%	2%	1%	7%	2%	
Within 880 yards of Line Kiln	2%	2%	2%	1%	2%	5%	1%	2%	1%	3%	1%	3%	4%	1%	2%	1%	1%	2%	<1%	<1%	<1%	1%	<1%	<1%	<1%	7%	2%
Crossing path of whales	4%	3%	5%	2%	4%	7%	6%	4%	5%	8%	4%	5%	5%	2%	7%	10%	8%	3%	0%	0%	4%	0%	<1%	<1%	7%	7%	6%
Chasing/pursuing whales	3%	1%	3%	2%	<1%	4%	3%	3%	2%	3%	3%	3%	3%	1%	<1%	<1%	0%	0%	0%	0%	4%	2%	4%	3%	4%	2%	6%
Inside of whales	5%	29%	24%	25%	19%	16%	22%	18%	17%	16%	21%	24%	17%	13%	10%	10%	9%	9%	4%	3%	<1%	7%	7%	8%	7%	6%	6%
Airplane within 1000 feet	4%	2%	4%	7%	14%	6%	6%	4%	6%	8%	8%	6%	4%	3%	<1%	8%	2%	2%	0%	0%	<1%	<1%	<1%	<1%	<1%	2%	2%
Within 200 yards of National Wildlife Refuge	0%	1%	3%	1%	2%	2%	1%	0%	1%	1%	1%	<1%	1%	0%	1%	<1%	0%	0%	0%	3%	1%	1%	0%	<1%	<1%	<1%	0%
Other		1%	3%	3%	14%	5%	15%	11%	10%	3%	2%	1%	1%	0%	1%	1%	0%	0%	0%	3%	13%	3%	0%	0%	2%	0%	0%
Within 220 yards of shore: whales present		4%	4%	4%	2%	<1%	4%	1%	2%	2%	<1%	<1%	1%	1%	2%	1%	0%	0%	0%	1%	<1%	0%	3%	0%	0%	0%	0%
Repositioning within 100 yards			7%																								
In the Path (formerly Parked in the path of whales)				26%	24%	17%	19%	27%	26%	17%	25%	19%	23%	11%	16%	18%	17%	26%	23%	23%	21%	12%	11%	8%	11%	0%	0%
Fast within 1/2 mile				3%	4%	4%	9%	10%	11%	16%	11%	13%	13%	6%	8%	9%	8%	11%	6%	5%	7%	35%	44%	44%	44%	42%	0%
1st Approach head on, behind, or on shore				4%	2%	1%	1%	<1%	1%	2%	3%	2%	3%	1%	4%	1%	3%	2%	7%	8%	8%	0%	0%	0%	0%	0%	0%
Keyaks spread out				<1%	3%	0%	0%	<1%	1%	1%	1%	1%	1%	<1%	2%	1%	1%	2%	<2%	<1%	2%	1%	0%	0%	<1%	0%	0%
Keyaks with whales outside 1/4 SII Zone				<1%																							
Keyaks paddling w/in 0-100 yds																											
Keyaks paddling w/in 100-200 yds																											
Keyaks parked on headland																											
Within 300 yards of SRKWs (Washington 2019)																											
Within 400 yards of killer whales (Canada interim order 2022)																											
Total %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total Observed Incidents	398	791	653	533	259	373	761	957	1,281	1,085	1,419	2,572	1,067	2,500	2,621	2,234	2,309	1,635	1,847	2,257	1,117	749	385	414	517	498	498
Estimated Annual Observation Hours	428hr	510hr	462hr	486hr	378hr	312hr	486hr	564hr	516hr	420hr	540hr	420hr	442hr	573hr	306hr	331hr	425hr	393hr	451hr	689hr	547hr	290hr	488hr	490hr	492hr	620hr	620hr

Table 1: Summary of vessel incidents as defined by *Be Whale Wise* Guidelines and federal/state vessel guidelines in the U.S. and Washington State from 1998-2023.

Incident Type	EC	EU	EK	PK	PM	PS	PA	CA	R	GC	GD	GN	GW	MF	MM	MW	MX	MY	O	Total	
100 yards under power	2	1			1	18	3													25	
200 yards under power	1	3			1	33	5													1	44
300 yards under power (SRKW WA)					1	24	6			1										1	33
400 yards under power (CAN)			2			28	5								1				1	2	41
400 yards in the path	2	2			4	14	4			2		1				2		1			32
traveling behind whales 100-400 yards					1	6													1		8
shutdown within 100 yards	4	2				11										1					18
shutdown within 200 yards	7	6				13										1					27
shutdown within 300 yards			2			10	1									1					14
shutdown within 400 yards						12	1									1					14
inshore of whales	2	4	2			22	2														32
within eighth mile of shore																					0
aircraft under 1000 feet								2	5											1	8
drone violation																					0
fast approach within 400 yards	1	1				8										1					11
fast departure within 400 yards						9						1	1								11
over 7kts within 1/2 nm (1km) of whales	7	10	2			156	1			5	2	2	1	2	1	7	1	3	3	6	209
fast within 1/4 nm of whales						3															3
high speed within 1/8 nm of whales																					0
fishing within 100 yards						1															1
fishing within 200 yards																					0
within SJI No-Go Zone (WA)		1			1	9															11
padding within 100 yards of whales					6																6
kayaks outside No-Go Zone (WA)																					0
spread out kayaks with whales																					0
within half mile of Lime Kiln Lighthouse																					0
within interim sanctuary zone (CAN)						1	1														2
within 200 yards NWR					1	2															3
ecotour within 1/2nm outside of license hours		4																			4
Total	26	38	6	16	380	29	2	5	8	2	4	2	2	2	1	15	1	5	4	11	557

Table 2: Summary of vessel incidents in 2023 by incident type and vessel involved in the incident. See Appendix L for Vessel Codes.

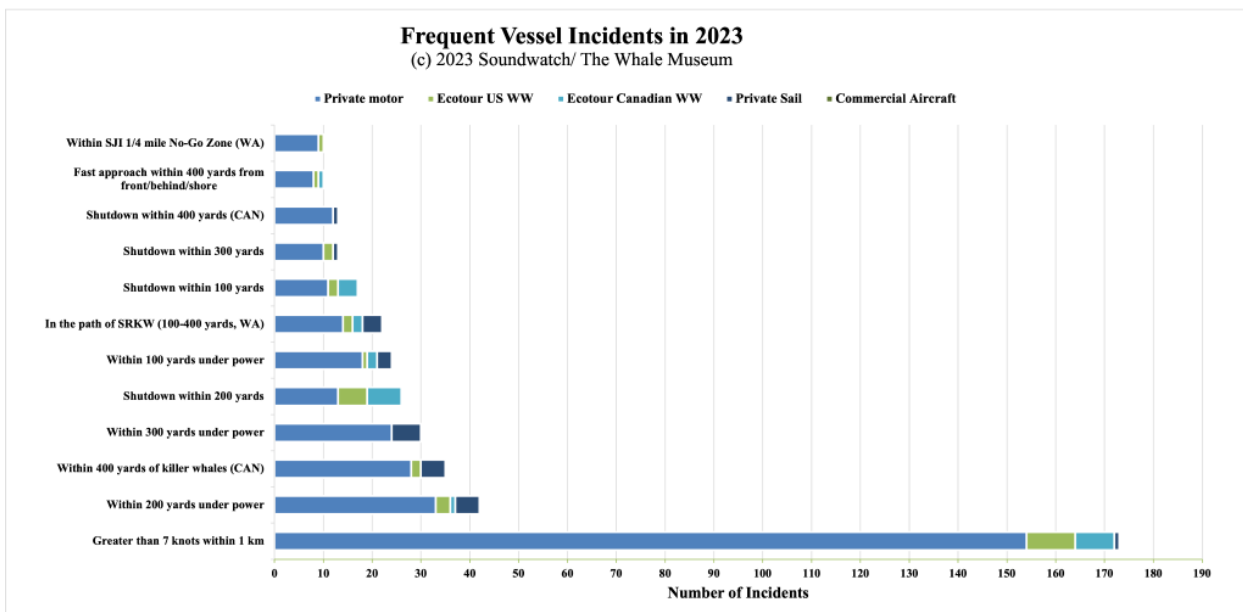


Figure 33: Most frequent vessel incidents observed by Soundwatch from May-September 2023 by incident and vessel categories.

Areas with high incidence density overlap with areas of whale habitat, boating activity, and Soundwatch presence to opportunistically record incidents while conducting research (Figure 34). Vessel activity during incidents was observed and categorized as transiting, whale oriented, or fishing. Of the 478 vessels, 61% were transiting, 36% whale oriented, and 3% actively fishing (Figure 35). The volume and activity of transiting vessels likely contributed to the number of

speed-related incidents reported, particularly the 7kt speed limit. Transiting vessels often appeared to be unaware of their vicinity to whales and either unequipped with a VHF radio or unwilling to respond to attempted contact.

The area with the most vessel incidents observed by Soundwatch in 2023 was along the west side of San Juan Island (Zones 1, 2, and 3)(Figure 36). This was likely a result of SRKW presence concentrated near False Bay, overlapping with an area of historically heavy vessel traffic (recreational and commercial) and high potential for incidents. The 2023 incident map depicts a pattern that is more northerly than previous seasons, suggesting a possible shift in foraging movement patterns.

Of the incidents recorded, 91% were U.S. Vessel Regulation violations; **Vessels Under Power Within 100-200 Yards of Whales** were 9% and **400 Yards In the Path of Whales** were 5.7%. The greatest number of incidents recorded was under the Washington State Law of **Under 7 knots within a half mile of SRKWs** at 37.5%.

In 2023, **Vessels within 200 Yards of Whales** incidents (22.1% of all incidents) were broken down by;

- Vessels Stopped within 0-100 yards (3.2%) Vessels Stopped 100-200 Yards (4.8%) were committed by 53.3% recreational vessels, 24.4% Canadian EcoTour commercial vessels, and 17.8% U.S. EcoTour commercial vessels.
- Vessels Under Power Within 100 Yards (4.5%) Vessels Under Power Within 200 Yards (7.9%) were made by 74% recreational vessels, 4.3% Canadian EcoTour commercial vessels, and 5.8% U.S. EcoTour commercial vessels.
- Fishing Within 100 Yards (<1%) and Fishing Within 200 Yards (0%) were committed by recreational vessels (100%).
- Under Power Following Whales Within 400 Yards (7.4%) was committed by recreational vessels (68%).

In 2023, **400 Yards In the Path of Whales** incidents (5.7% of all incidents) were 43.7% recreational vessels and 6.2% U.S. commercial vessels. **Over 7 knots within a half mile of whales** incidents (37.5% of all incidents) were committed by recreational vessels (74.6%), maritime cargo/ferries (3.8%), U.S. EcoTour vessels (4.8%), and Canadian EcoTour vessels (3.3%).

As in previous years, private recreational vessels committed the majority of incidents (68%), distantly followed by U.S. commercial vessels (6.8%), Canadian commercial vessels (4.7%), commercial aircraft (1%), commercial fishing vessels (<1%), maritime cargo/ferries (2%), enforcement (1.8%), private aircraft (<1%) and research vessels (1.4%) (Figure 33).

Whale watching activities ('whale oriented') accounted for 36% of vessel incidents when comparing vessel activities, while vessels transiting ('transiting') accounted for 61% of incidents around whales (Figure 35). Whale oriented vessels still committed both speed and distance violations (Figure 37). Variations in maximum vessel numbers and average vessels on scene are likely due to annual variation in whale presence, social cohesion, and awareness. These factors will reduce the number of incidents recorded by Soundwatch (Figure 38). Soundwatch operations are limited by time, resources, weather, and other research or education activities on-the-water. Therefore, incident numbers recorded by Soundwatch are not a full representation of

the whale watching scene on the water over the course of the season, and low incident counts do not necessarily mean improved boater behavior.

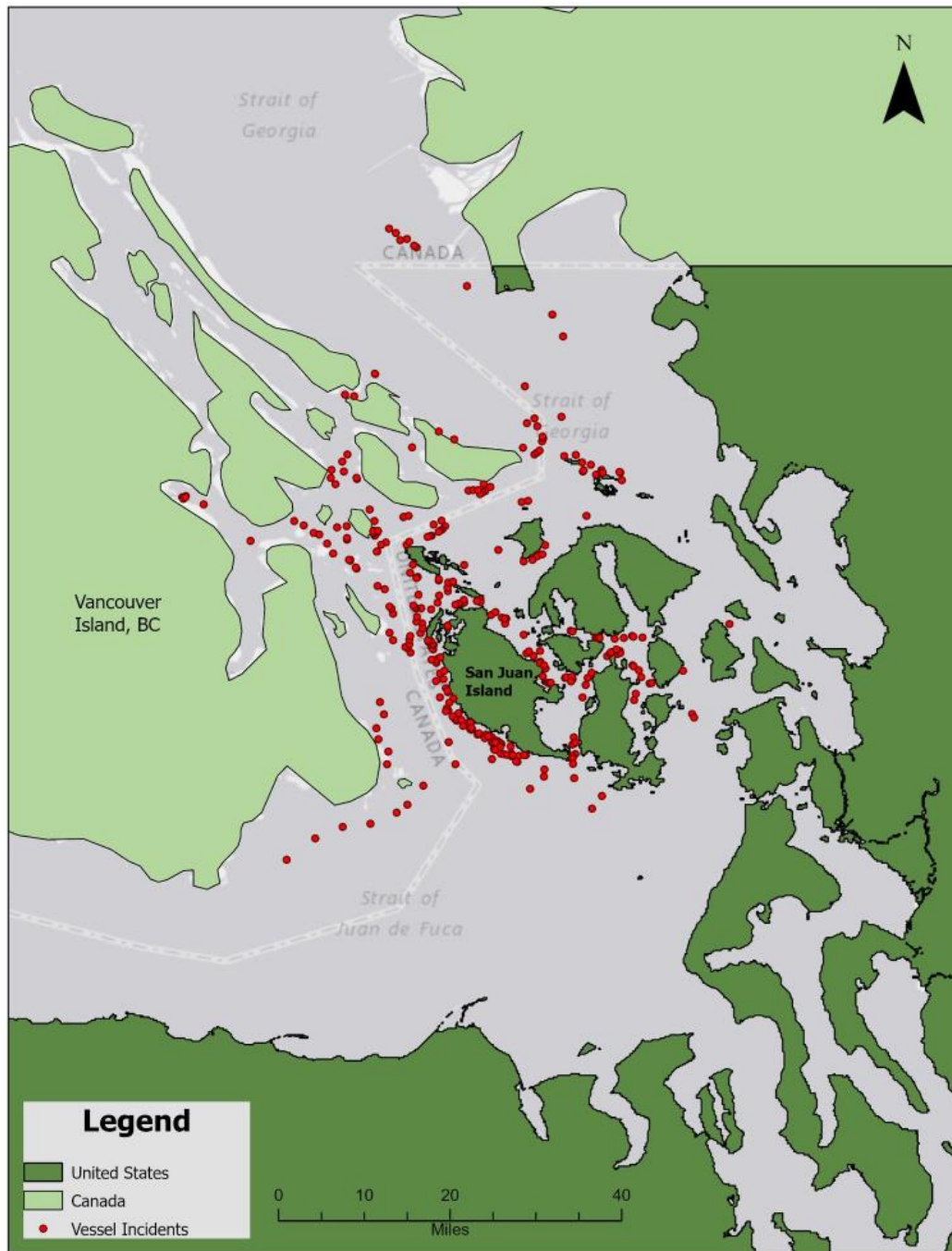


Figure 34: Total vessel incident locations observed by Soundwatch from May – September 2023. Single points can represent multiple violations, $N=498$.

Incidents by Vessel Activity (c) 2023 Soundwatch/ The Whale Museum

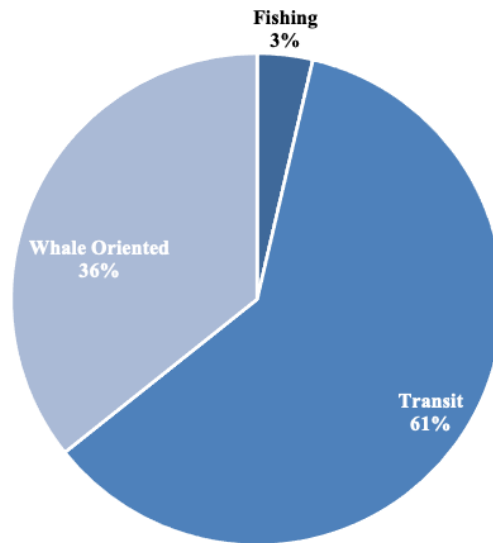


Figure 35: Percentage of all vessel incidents by vessel activity observed by Soundwatch May-September 2023.

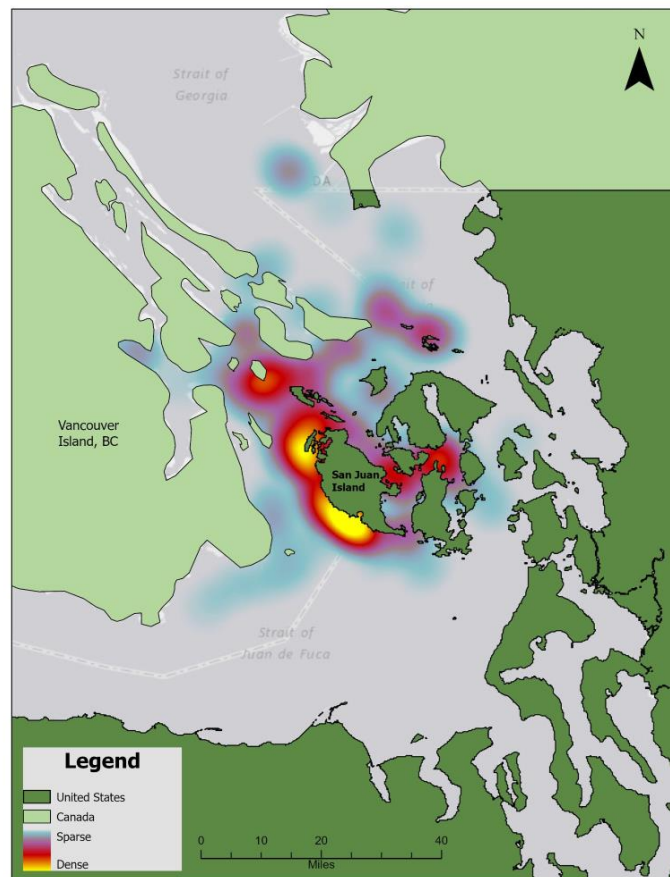


Figure 36: 2023 Vessel incident heat map, with blue colors having fewer total incidents than yellow colors. Locations can be multiple violations, $N=498$ incidents.

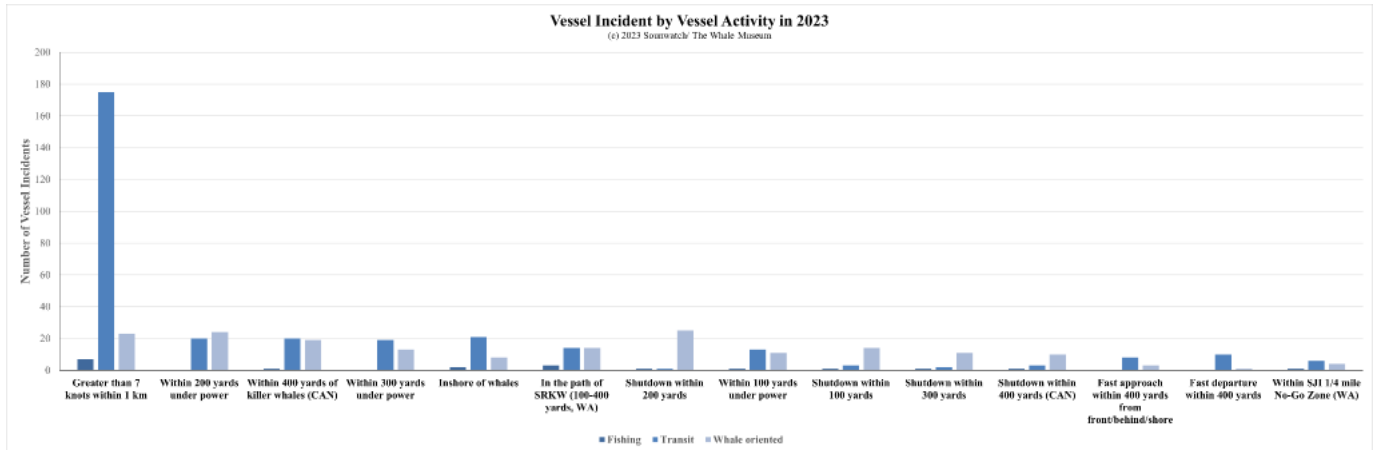


Figure 37: Most frequent vessel incidents observed by Soundwatch from May-September 2023 by incident type and vessel activity.

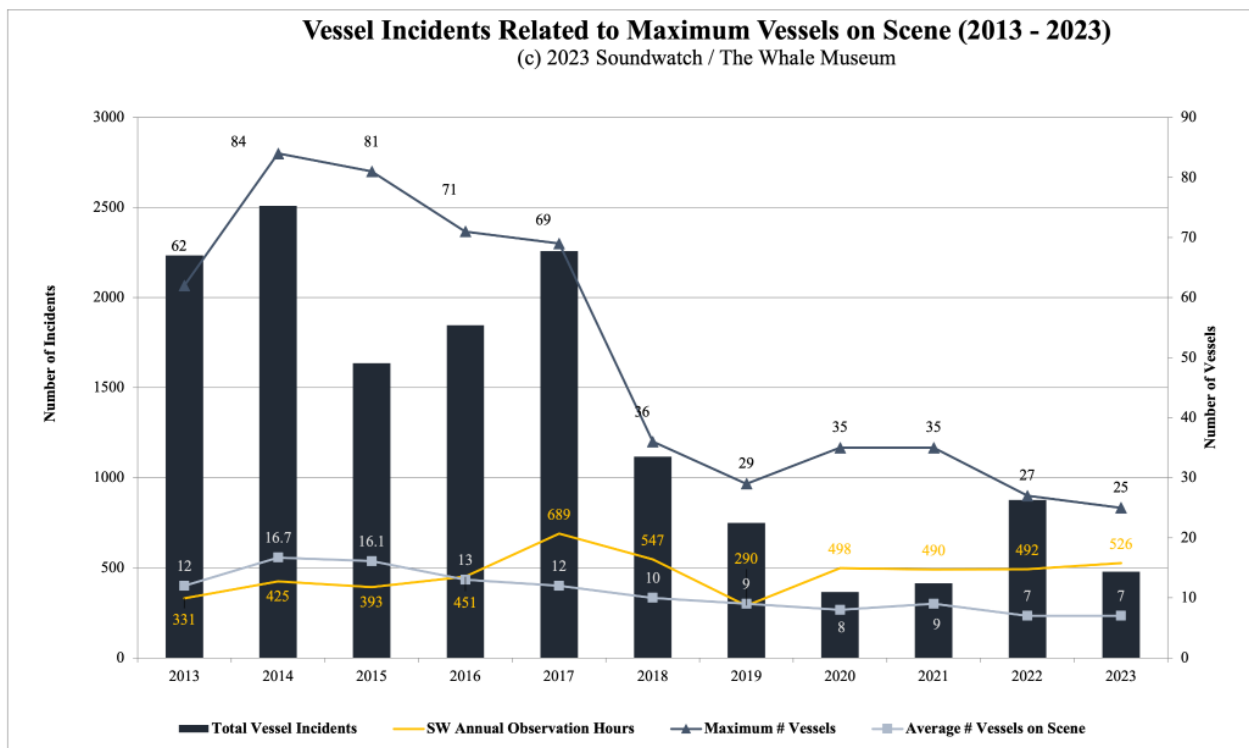


Figure 38: Average, Maximum, and Total number of vessels on scene with killer whales plotted with number of vessel incidents from May-September 2013-2023 observed in the Salish Sea by Soundwatch.

Vessel Incident Trends

Vessel Type Incident Rates

Incident data was recorded by Soundwatch for 498 vessel counts with 557 incidents. Therefore, the overall incident rate is: $2 \times 498/557$ resulting in 1.78 total incidents per hour for the 2023 season (Figure 39-43). To determine vessel incident rates per vessel type: $2 \times$ the annual number of incidents per vessel category were divided by the annual number of 30-minute vessel counts in which those vessel types were recorded. From 2009 to present, recreational vessels remain the most likely vessel type to commit all incidents (Figure 39). Recreational incident rates were also significantly higher than incident rates of any other vessel type (Figure 40).

Incident data specific to SRKWs was recorded by Soundwatch for 96 vessel counts with 195 incidents, yielding 4.06 SRKW-related incidents per hour during the 2023 season. SRKW-specific incident rates by type also differed from overall incident rates by type, although the speed violation remains the violation with highest rate of incident (Figure 41b).

Incident data specific to Transient killer whales was also analyzed, for 173 vessel counts with 262 incidents, yielding 3.02 Transient-related incidents per hour during the 2023 season. Speed-related violations remain the highest of incident rates for Transient killer whales as well, followed by distance violations specifically for 400 yards (Figure 41c). As of 2023, U.S. federal regulations for both Transient killer whales and SRKW require boaters to maintain a minimum distance of 200 yards, as compared to the Washington state requirement of 300/400 yards for SRKWs. Therefore, a recreational vessel within 400 yards of a Transient killer whale while in U.S. waters would not be considered a violation. However, if that same recreational vessel observed Transient killer whales within 400 meters in Canadian waters, they would be considered in violation of Canadian regulations. It is worth noting here that many boaters are not able to confidently identify different killer whale EcoTypes, and so it must be encouraged to treat any unknown killer whale as an endangered whale.

Cetus Research & Conservation Society's Straitwatch stewardship program recorded an overall incident rate of 6.30% in 2023, a notable decrease compared to 13.23% in 2022 (Cetus 2023). This decrease may have been due to a significant decrease in Transient incident rate, which in turn is likely contributed to the higher sample size monitoring Transients during this season compared to the 2022 season.

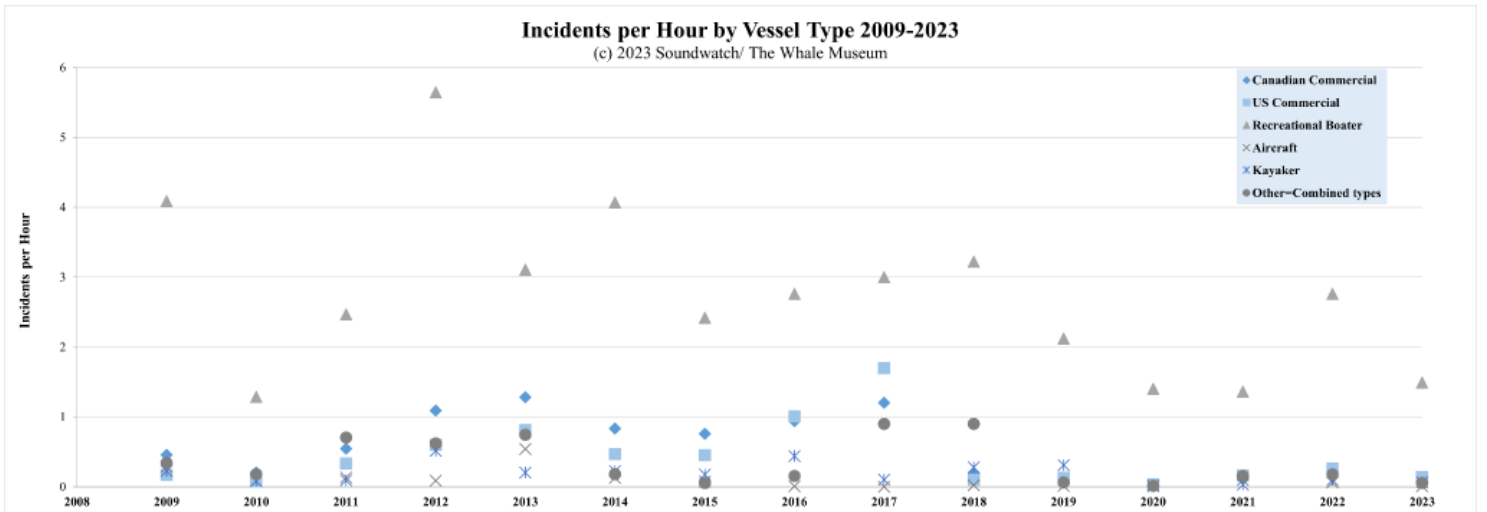


Figure 39: Trend from 2009 – 2023 Guideline and Regulation incidents per hour by vessel type.

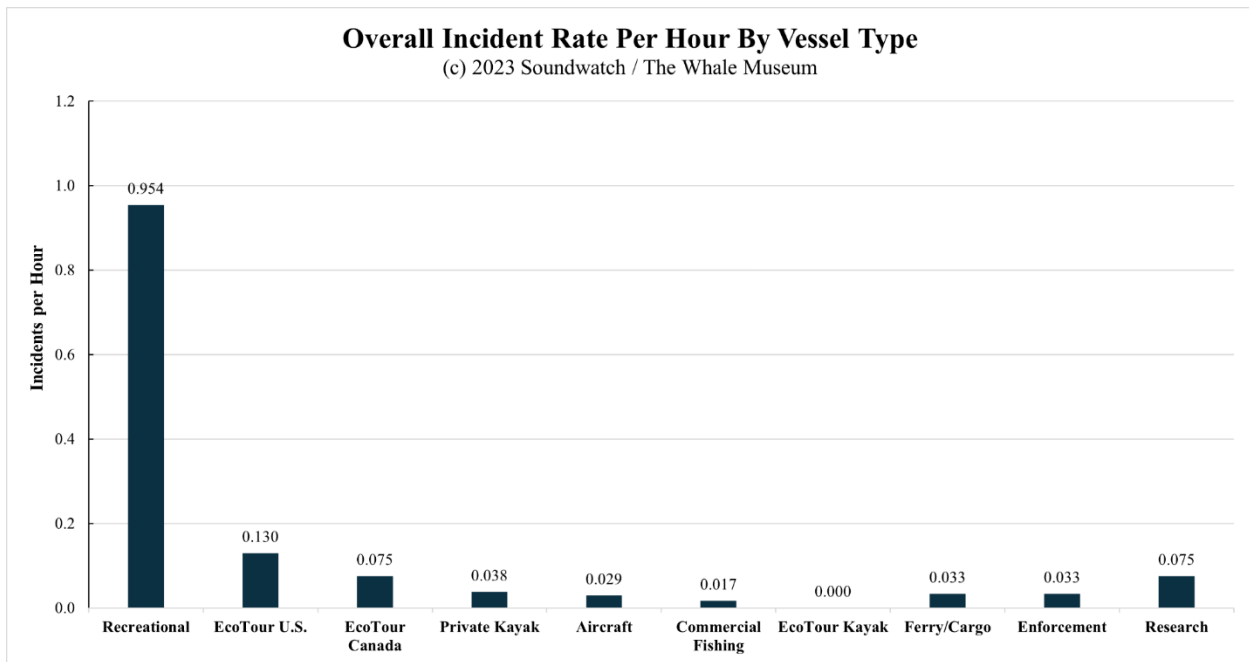


Figure 40: 2023 vessel incidents per hour by all vessel types.

Overall Incident Rates per Hour by Incident Types

(c) 2023 Soundwatch/ The Whale Museum

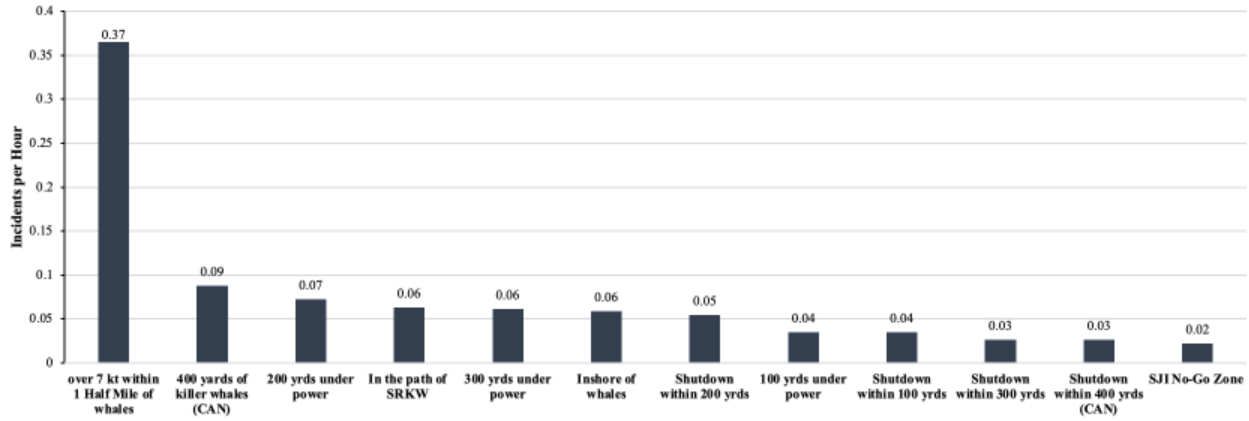
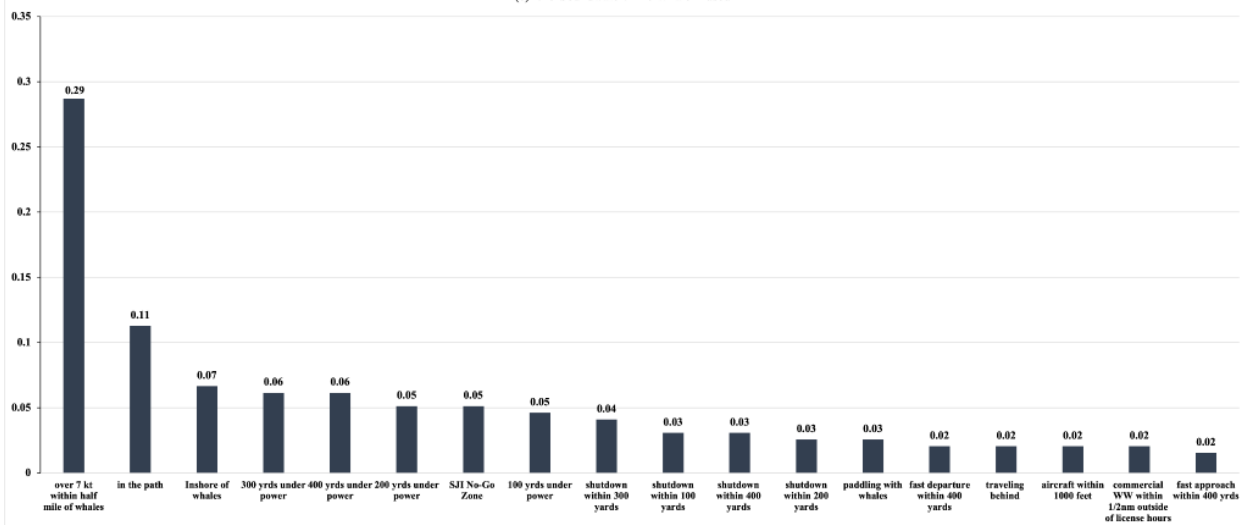


Figure 41a: 2023 vessel incident rates per hour by incident type.

SRKW Incident Rates by Incident Type

(c)2023 Soundwatch/The Whale Museum



41b: 2023 SRKW-specific vessel incident rates per hour by incident type.

Figure

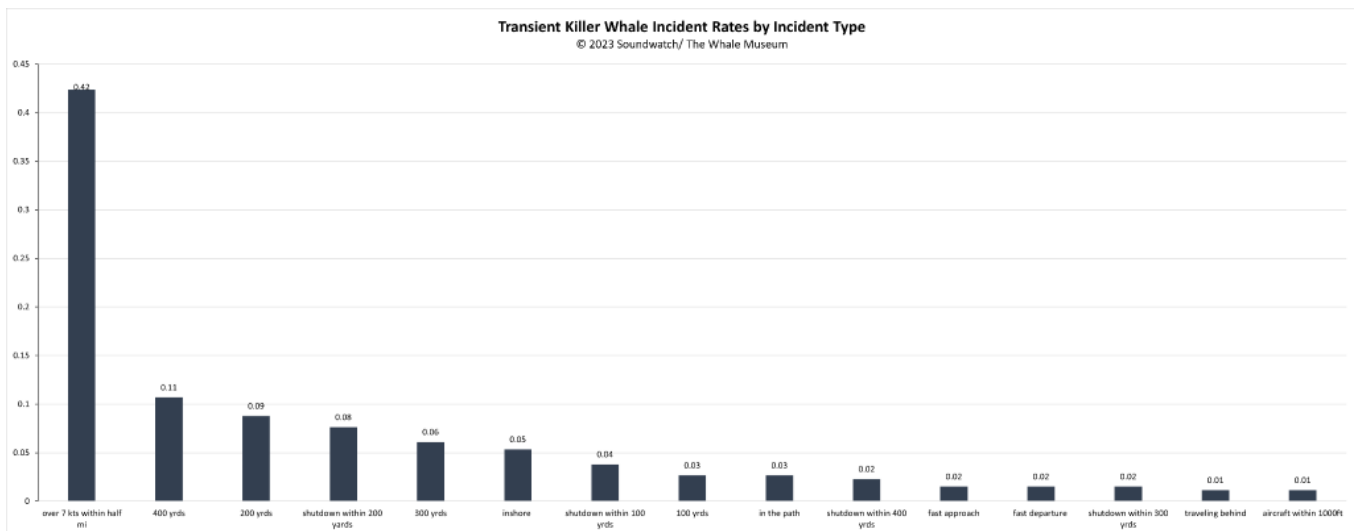


Figure 41c: 2023 Transient killer whale-specific incident rates per hour by incident type.

Enforcement

Soundwatch vessel count data recorded 30.5 hours over 23 days with maritime law enforcement agencies on scene, 2 days of which multiple agencies were present; 0 hours with Canadian Coast Guard, 0.5 hours with USCG, 0.5 hours with San Juan County Sheriff, 0.5 hours with Canadian Department of Fisheries and Oceans, 8 hours with NOAA Enforcement, and 21 hours with WDFW.

As in previous years, Figure 42 displays a greater level of compliance when law enforcement was monitoring the vicinity (half-mile) of whales. Figure 42 is a simple ratio of all incidents with enforcement agencies on scene or off scene. Since enforcement was only present for ~10% of vessel counts, this ratio is time-corrected for improved comparison (Figure 43). Across all vessel categories, vessel incidents increased with the presence of enforcement. This relationship is one of correlation, not causation. It is important to note the following factors influencing this data: Soundwatch data sampling, enforcement mission, and coordination of effort. Soundwatch usually encountered and recorded enforcement presence while monitoring whales in areas of high vessel traffic overlapping with core whale habitat, such as the west side of San Juan Island where incidents were most frequently observed. The role of enforcement in the context of SRKW recovery is typically to respond in areas and times of greatest need – generally regions with high potential for incident violations. Additionally, enforcement was present with whales more than is reflected by Soundwatch data. Due to increased coordination between Soundwatch and WDFW, multiple vessels were intentionally spread out to increase education and monitoring of vessels near multiple groups of whales. Soundwatch and WDFW frequently communicate to avoid being in the same place with the same whales in the interest of covering a wider range with limited resources.

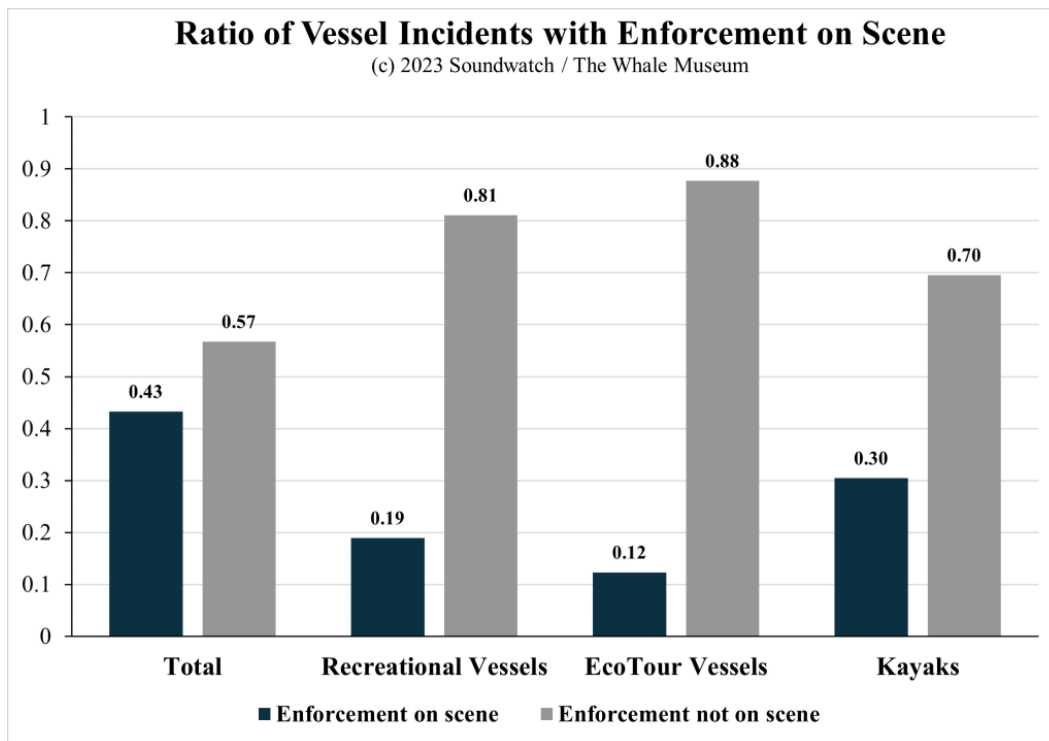


Figure 42: Ratio of incidents recorded with Enforcement on scene vs Enforcement not on scene.

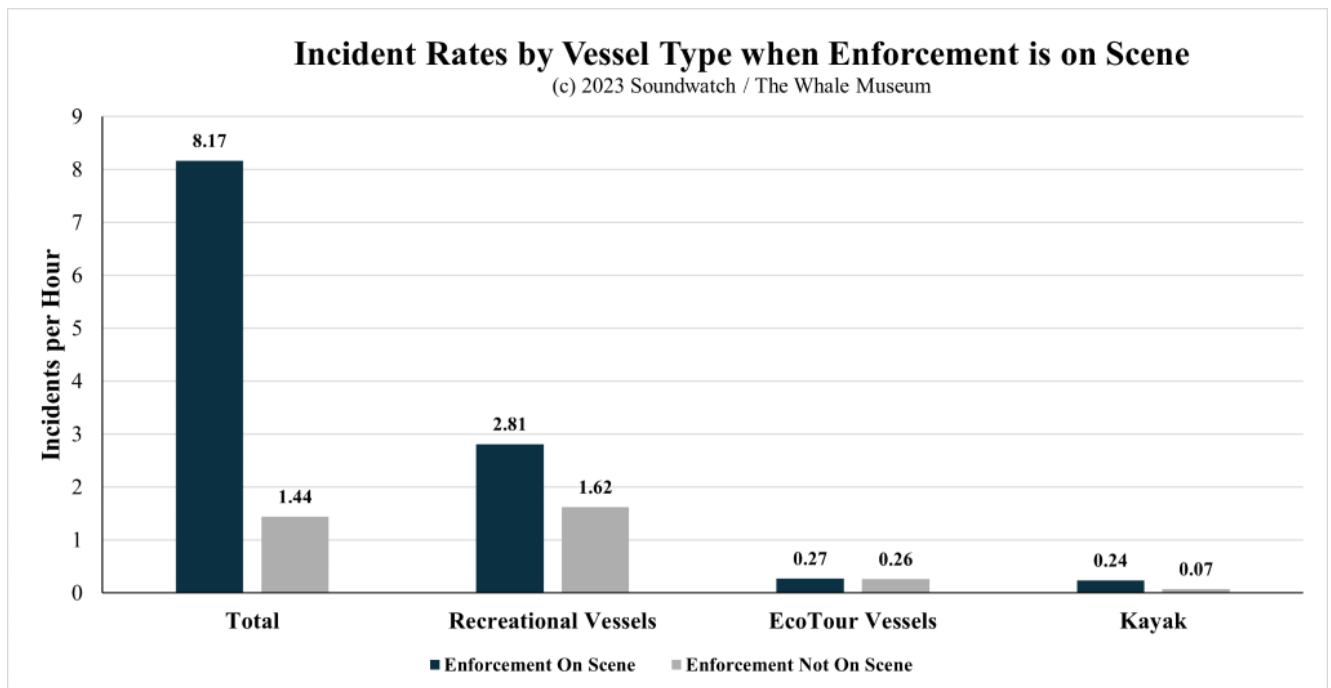


Figure 43: Incident rates by vessel types with Enforcement on scene and with Enforcement not on scene with whales when time-corrected for enforcement presence. Although it appears that incident rates increase in the presence of enforcement, this data is a result of enforcement response in the context of SRKW recovery; to focus presence in areas and times of greatest need – generally regions with high numbers of vessels and high potential for incident violations.

Whale Warning Flag

The Whale Warning Flag was introduced by the San Juan County Marine Resources Committee in 2018. Flags were distributed to research, monitoring, and private boaters early on in the boating season. Flags were provided to commercial whale watch vessels in 2018 in mid-June, after the start of the boating season, so use of flags was limited by these operators. This led to an inconsistent presence of Whale Warning Flags and inability to analyze their effectiveness during the 2018 season. Throughout winter 2018 and into the 2019 summer season, the commercial whale watch fleet, enforcement vessels, and more private boaters were outfitted with flags. Targeted education on the proper use and meaning of the flag was increased through the Be Whale Wise campaign during this time as well and continues to be in 2023.

One frequently expressed concern is that the whale warning flag would act as a means to attract vessels to the whales; however, data suggests that the Whale Warning Flag did not act as an attractant to recreational vessels to draw them to the presence of whales as there was not a significant increase in the average number of vessels with whales since the flag’s introduction (Figure 16a).

In 2023, the average number of whale warning flags within a half mile of all whale species was 2.36 flags with a max of 8 flags. EcoTour (Canadian and U.S. commercial wildlife vessels) had an average of 1.03 flags and a maximum of 6 flags within a half mile of all whale species, an increase from an average of 0.64 flags, but maintained the same max in 2022. Recreational vessels flew an average of 0.04 flags and a max of 2 flags, almost exactly the same as in 2022 except from a minor decrease of a max of 3 flags to 2 flags. Other vessels had the highest average of 1.29 flags and a max of 3 flags within half a mile of all whale species (Figure 44).

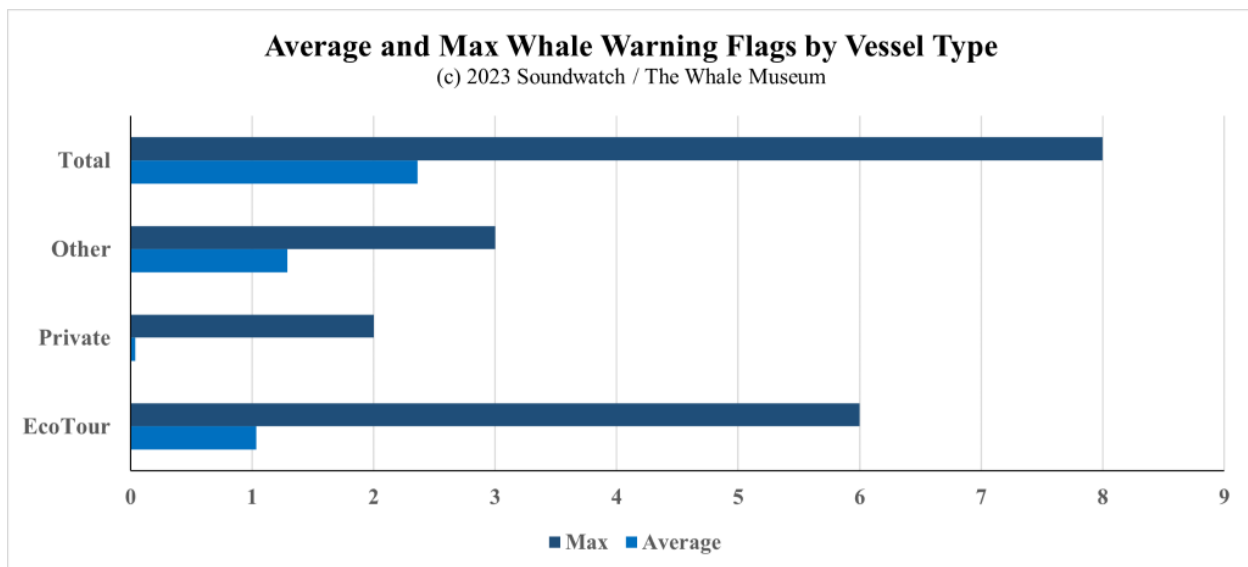


Figure 44: Average and max of Whale Warning Flags within a half mile of whales by vessel type in 2023.

Other vessels include Soundwatch, which always flew a whale warning flag and research permit flag when on scene with whales, and other monitoring and research vessels. In 12% of boat counts Soundwatch was the only vessel flying a whale warning flag, a noticeable decrease from 37% in 2022. (Figure 45).

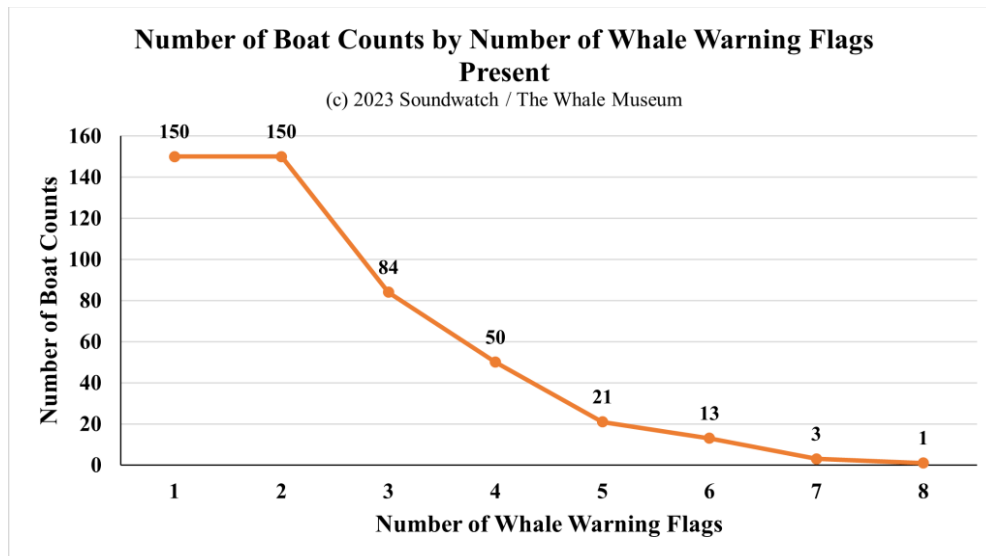


Figure 45: Number of Boat Count with number of Whale Warning Flags present in 2023.

As stated earlier, Soundwatch recorded 498 vessel incidents for a total of 557 violations during the 2023 season. Since Soundwatch always flew a whale warning flag when present with whales, all incidents recorded were with at least one flag present. There were 328 (66%) incidents recorded when there was at least one other flag besides Soundwatch’s flown. When vessel incidents are displayed graphically against the number of Whale Warning Flags present one might assume that fewer incidents would be observed in the presence of more flags. This may be true, but when compared to boat counts by number of flags present the trend is very similar in that there are fewer vessel incidents when there are more flags due to the fact there were fewer boat counts with higher numbers of flags (Figure 47). When plotted, the negative relationship between number of vessel counts and vessel incidents is comparable with negative slopes and strong trends ($R=0.88$ and $R=0.89$) (Figure 46). This further suggests that the reduction in vessel incidents as the number of Whale Warning Flags increase is due to the smaller sample size of boat counts with >7 Whale Warning Flags present. However, when there were greater than 7 flags present no incidents were recorded. This could be due to higher recognition and awareness of whales’ presence by boaters due to the sheer number of vessels present. It could also be due to the high proportion of EcoTour vessels present in these scenarios, which may also serve as an indication of whales in the vicinity (Figure 29).

Incident rates generally decreased from 2017-2020, but have increased in 2022 before dropping again in 2023 (Figure 49), but this could be due the low number of SRKWs which we are focused on while monitoring. These rates are calculated by vessel incidents recorded per hour, but are also impacted by factors including the number of hours on scene with killer whales, presence of Southern Residents, and location of killer whale sightings.

Commercial whale watch vessels are responsible for fewer incidents and are generally more likely to fly Whale Warning Flags than recreational vessels. Out of the 498 incidents recorded by Soundwatch, 55 were committed by EcoTour vessels, and of those, 22 were observed flying the

Whale Warning Flag. There were 10 cases in which a private vessel flying a Whale Warning Flag was observed in violation.

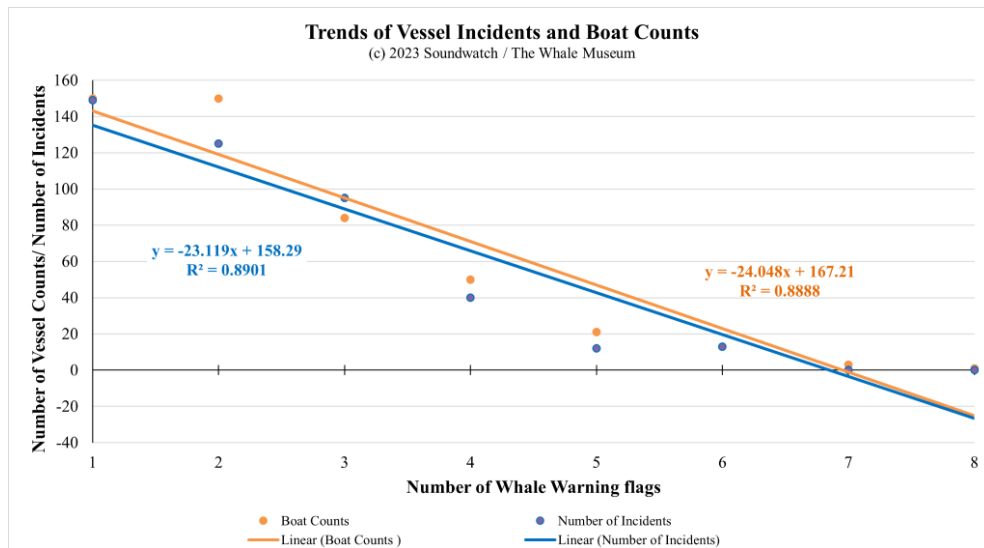


Figure 46: Displays the negative trends of vessel incidents and boat counts as related to the number of Whale Warning Flags present.

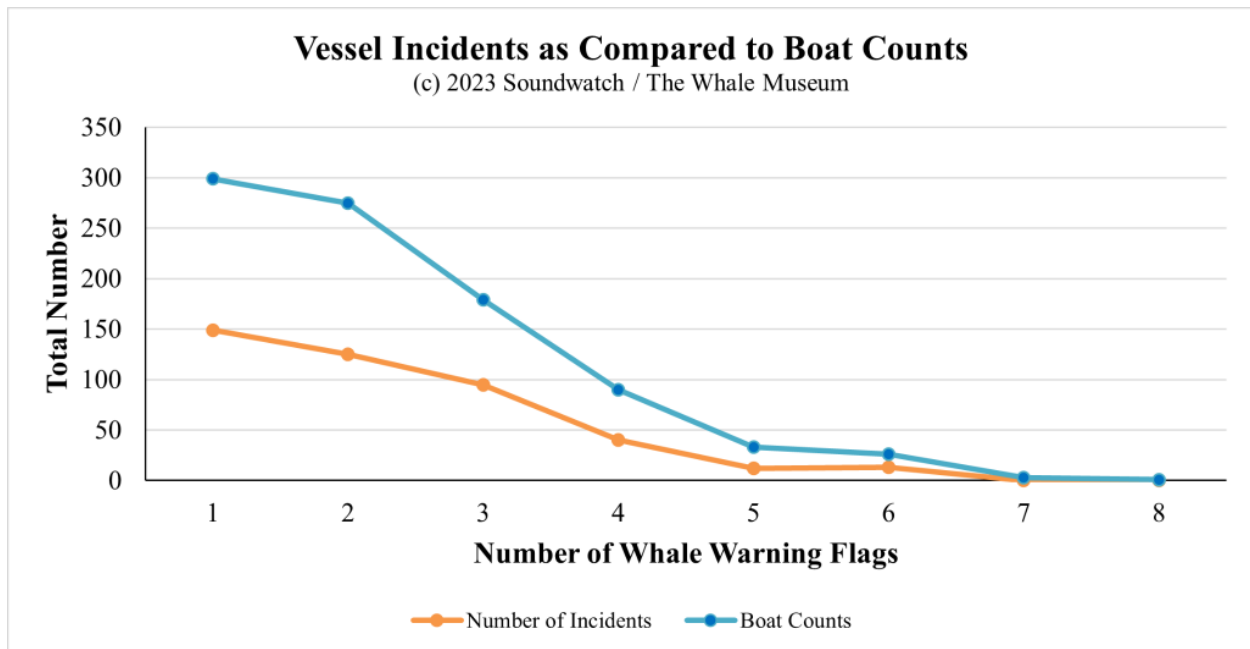


Figure 47: Number of Vessel Incidents and Boat Count by number of WWFs present.

In 2018 when the flag was first introduced, Soundwatch did not record any usable data due to the lack of presence of the flag out on the water. Deployment methods for the flag appeared to be one of the challenges faced by flag recipients at first. Many commercial operators were either slow to utilize their flags or did not utilize their flags due to logistical difficulties. While not required to fly a Whale Warning Flag, Pacific Whale Watch Association (PWWA) and Transport Canada Sustainable Whale Watch Agreement members are encouraged to use their flags when observing whales. This resulted in an increase in the use of whale warning flags since 2019; however, Soundwatch observed a decrease in use of whale warning flags by commercial

operators in 2022 (325 counts) before having a slight increase in 2023 (488 counts). This increase in flags aligns with the increase in total fleet numbers since this year (fig 6B). In a recent collaboration, Washington State Parks Boating Program partnered with San Juan County's Marine Resources Committee to provide whale warning flags to the boating public in an effort to raise awareness of the flag and its purpose.

Discussion

Recommendations for SRKW Protection and Recovery

Soundwatch data from 1998-2023 shows continued boating pressures and noncompliance with best practice guidelines and vessel regulations for killer whales throughout the Salish Sea, the inland waters of Washington State, and British Columbia. Ongoing noncompliance demonstrates the continued need for the continuation and expansion of shore and water-based boater education and outreach efforts. Increased efforts and funding for additional enforcement patrols and enforcement action are vital to the success of Southern Resident Killer Whale protection and recovery.

Continued lack of SRKW social cohesion within the Salish Sea can complicate monitoring activities; as the whales spread out, so do vessels engaged in whale watching activities. Thus, one Soundwatch vessel and/or one WDFW enforcement vessel were often left to monitor several groupings of vessels over a greater geographic area instead of just one group in a concentrated area. The long-term Soundwatch database is very effective in tracking vessel and whale behavior trends over many years. However, with changes to SRKW presence and distribution throughout the Salish Sea, Soundwatch's standardized data collection procedures and operations are limiting factors for the utilization of the dataset to answer specific questions, such as impacts of law enforcement presence and the sentinel role vs. magnet effect of EcoTour companies. In 2021, Soundwatch included an additional query ("How did you find the whales?") to the Recreational Contact survey, and an additional category of incidents (CWWLP violations) for EcoTour vessels. The continuation of ESA Section 6 funding, and/or the funding from Washington State's 2020 budget, and other sources, for these programs to conduct more cooperative outreach education, monitoring and enforcement is critically needed. Collaboration of these two programs along with NOAA, DFO, Straitwatch and all *Be Whale Wise* partners is essential for boater education, marine monitoring and enforcement around killer whales.

Interestingly, in 2023 Soundwatch did record fewer days with SRKW during the season compared to the 2022 season, with very few instances of once-typical grouped behavior including traditional rest, as compared to the 2022 monitoring season. However, this data is more in line with sightings and behavior that is more typical based on previous monitoring seasons. This report does not analyze the status of other threats to SRKW recovery including prey availability and pollutants, but total maximum and average numbers of vessels around killer whales continued to hit an all-time low during the 2022 season (Figure 16a, 20).

The issue of recreational boaters requires further assessment and effort. Recreational vessels commit the highest overall number of incidents as well as overall highest rate of incidents across the board. Recommendations to address recreational vessel activity and noncompliance include: increase federal distance buffer around all killer whales in order to lessen vessel disturbance;

increase monitoring and enforcement efforts on and off water; amend BWW guidelines to include recommendation for boaters to monitor VHF channel 16; and distribute BWW information with vessel registration and tabs.

2020 recommendations included the implementation of Local Notice to Mariners broadcasts to alert boats of whales in their vicinity, and the addition of regulations and guidelines to Washington State Boater Education course. During the 2021-2023 season, the United States Coast Guard broadcasted Local Notice to Mariners in order to alert boaters to the presence of killer whales as well as remind them of the federal regulations. Washington State and Puget Sound Partnership collaborated to include marine mammal regulations in the Boater Education course. Similar efforts to require education at the boater licensing level are underway in Canada through Marine Education & Research Society (MERS). The outcome of these efforts could explain the lower number of recreational incidents recorded this year, regardless of an increase in recreational vessels overall.

The trans-boundary nature of the Salish Sea highlights the need for consistent and simplified regulations and guidelines between the U.S. and Canada. Different regulations across the border poses a challenge to education efforts on both sides. Updated federal regulations are recommended in order to establish better protections for SRKW as well as improve education and outreach effectiveness.

Real-Time Sightings Reports and Education Context

The continued growth of real-time sightings reports through various social media platforms provides visitors with live updates to whale sightings from land as well as on the water. While a valuable resource, particularly for would-be viewers visiting whale watching locales for a limited duration of time, there is growing concern over considerations including sustainable land use and proper education. Lack of proper environmental education has been identified as a potential issue within the international ecotourism industry (Mondino & Beery, 2019). There are currently no requirements for local real-time reporting or live updating channels to include information such as applicable regulations and guidelines, which may lead to uneducated boaters approaching whales, or uninformed land-based viewers visiting sensitive natural sites. In order to mitigate these possible adverse effects, it is recommended that real-time sightings platforms (1) include education on regulations and guidelines pertaining to wildlife and the marine or terrestrial environment, (2) establish an educational query/disclaimer for new users joining the sightings group, and (3) provide their users with access to comprehensive regulatory alerts and reporting mechanisms with sightings updates.

Summary of 2023 Soundwatch Data

Vessels

- Soundwatch conducted 478 vessel counts within ½ mile (0.8 km) of whales; 20 days (143 data counts) directly monitoring Southern Residents, 44 days (254 data counts) with Transient (aka Bigg's) killer whales, 17 days (56 data counts) opportunistically with Humpback whales, and 5 days (9 data counts) opportunistically with Minke whales (Figure 2).
- The number of vessels observed within ½ mile of whales (May–September) varies widely by time, date and location with maximum number nearly four times larger than average number (2023 Max. 25, Avg. 7).
- The highest average vessel counts were recorded in July and max vessel counts recorded in June; May average 6.8 max 12, June average 7.0 max 25, July average 7.7 max 23, August average 7.4 max 19, September average 6.5 max 22.
- Recreational (private) vessels observed within ½ mile of whales had higher maximum numbers, but lower average numbers than commercial vessels within ½ of whales; Recreational vessels average 1.8 max 17, Commercial vessels average 2.7 max 12.
- Soundwatch contacted 519 vessels with 1,309 people on board, averaging 2.52 people per vessel, around whales for education and prevention purposes.
- An average of 43% of recreational vessels contacted for educational purposes were correctly aware of the guidelines and laws for boating around killer whales. Therefore, 57% of contacted boaters were unaware or misinformed about the guidelines and laws for boating around marine mammals in the Salish Sea. This is a decrease in awareness as compared to 2022 (67% awareness).

Commercial Whale Watch Industry

- The commercial whale watching season typically occurs April–October with many U.S. & Canadian commercial whale watch vessels going out year-round and/or starting earlier and going later into the season.
- 44 total EcoTour whale watch companies operated May–September, offering whale watching trips from 89 'active' whale watch vessels in the U.S. and Canadian Haro Strait region, with 4 'occasional' vessels and 13 'rare' vessels for a potential combined total of 106 whale watch vessels operating on-the-water at a given time.
- There were seven observed additions to the whale watch fleet during the 2023 season in terms of new vessels/companies; while EcoTour companies were more active in 2023 as in 2022, Soundwatch data likely reflects EcoTour effort in avoiding SRKWs as a result of CWWLP rules.
- 75% of U.S. companies and 93% of Canadian companies are listed members of the Pacific Whale Watch Association (PWWA).
<https://www.pacificwhalewatchassociation.com/>
- Canadian commercial whale watch vessels continue to be mostly smaller rigid hull inflatable (RHIB) style vessels while the U.S. fleet is made up of mostly larger passenger style vessels.

Vessel Incidents

- Soundwatch totaled 87 vessel/whale days and 478 vessel counts. Recreational 69 days and 320 counts, U.S. EcoTour vessels were observed 60 days and in 300 vessel counts, Monitoring/Enforcement (excluding Soundwatch, including Straitwatch presence) 37 days and 145 counts, Canadian EcoTour 49 days and 184 counts, Research 19 days and 78 counts, and kayaks (EcoTour and recreational) 17 days and 25 counts.
- A total of 498 incidents were recorded by Soundwatch in 2023, committing a total of 557 violations.
- Vessel activity during incidents was observed and categorized as transiting, whale oriented, or fishing. Of the 478 vessels, 61% were transiting, 36% whale oriented, and 3% actively fishing (Figure 35).
- Of the incidents recorded, 91% were U.S. Vessel Regulation violations; **Vessels Within 200 Yards of Whales** were 9% and **400 Yards In the Path of Whales** were 5.7%. The greatest number of incidents recorded was under the Washington State Law of **Under 7 knots within a half mile of SRKWs** at 37.5%.
- **Vessels within 200 Yards of Whales** incidents (22.1% of all incidents) were broken down by;
 - Vessels Stopped within 0-100 yards (3.2%) Vessels Stopped 100-200 Yards (4.8%) were committed by 53.3% recreational vessels, 24.4% Canadian EcoTour commercial vessels, and 17.8% U.S. EcoTour commercial vessels.
 - Vessels Under Power Within 100 Yards (4.5%) Vessels Under Power Within 200 Yards (7.9%) were made by 74% recreational vessels, 4.3% Canadian EcoTour commercial vessels, and 5.8% U.S. EcoTour commercial vessels.
 - Fishing Within 100 Yards (<1%) and Fishing Within 200 Yards (0%) were committed by recreational vessels (100%).
 - Under Power Following Whales Within 400 Yards (7.4%) was committed by recreational vessels (68%).
- **400 Yards In the Path of Whales** incidents (5.7% of all incidents) were 43.7% recreational vessels and 6.2% U.S. commercial vessels. **Over 7 knots within a half mile of whales** incidents (37.5% of all incidents) were committed by recreational vessels (74.6%), maritime cargo/ferries (3.8%), U.S. EcoTour vessels (4.8%), and Canadian EcoTour vessels (3.3%).
- Private recreational vessels committed the majority of incidents (68%), followed by U.S. commercial vessels (6.8%), Canadian commercial vessels (4.7%), commercial aircraft (1%), commercial fishing vessels (<1%), maritime cargo/ferries (2%), enforcement (1.8%), private aircraft (<1%) and research vessels (1.4%) (Figure 33).
- Whale watching activities ('whale oriented') accounted for 36% of vessel incidents when comparing vessel activities, while vessels transiting ('transiting') accounted for 61% of incidents around whales (Figure 35). Whale oriented and transiting vessels still committed both speed as well as distance violations (Figure 38).

Direct Takes by Soundwatch under NOAA/NMFS Permit #26285

- In 2023, Soundwatch made 3 close approaches (closer than regulations and guidelines) as authorized under National Marine Fisheries Service Research Permit #26285. Two of the close approaches resulted in change in behavior of the animal, while one of the approaches' effect on the whale behavior is unknown.
- Any takes are directed for prevention and educational purposes due to a vessel breaking U.S. Vessel Regulations and not responding to other means of communication. Any takes are conducted under discretion of professional vessel drivers to mitigate risk away from whales and maintain safety of vessels, crew, and whales.

Spatial Trends

- While SRKWs display continued trend of dispersal/lack of social cohesion throughout the 2023 season, there were far fewer records of presence in 2023 compared to 2022.
- SRKWs were sighted in Soundwatch's area of response for 20 days during all months of the field season (May, June, July, August, and September).
- SRKWs continue to utilize their core habitat, although time and duration of use has varied throughout previous years.
- A variety of vessel types, engaged in a variety of activities, routinely commit a multitude and variety of incident types, with the majority of incident types being contrary to U.S. federal vessel laws throughout the ESA designated SRKW Core Summer Critical Habitat Areas, especially in the vicinity of the west side of San Juan Island.

Education Materials/Onshore Education

- In 2023, Soundwatch Dock Talks reached 956 guests visiting Port of Friday Harbor and Roche Harbor on San Juan Island, Washington. 30% were aware of guidelines and regulations, 42% were unknown meaning there was not enough time to confirm if the guests.
- Soundwatch aided in the development of the Be Whale Wise Outreach Toolkit, which continues to be updated as of 2023.
- Soundwatch has published 163 posts and gained 1,877 followers on the social media platform Instagram (@soundwatch_twm) since the account was created in 2019.
- The BWW exhibit at TWM, installed in 2016, has reached over 210,000 people.

Individuals and/or Organizations that Collaborated with the Grantee and Performed the Work:

The Whale Museum staff (Executive Director Jenny L. Atkinson, Finance & Operations Manager Jennifer Smith and 2023 Soundwatch Coordinator Alanna Frayne) administered grant funds, including accounting and disbursement. The Soundwatch Coordinator (Alanna Frayne), part-time Program Assistant (Clare Ogle) along with seasonal Soundwatch driver/educator staff (Erin Casellas, Jessica Newley), academic interns (Jamie Hoy, Greta Weise, and Sofia Denkovski) were responsible for the outreach, monitoring and data collection activities as well as data entry. Thank you to The Sighting Network Coordinator: Alexis Haifley Morrigan, for the data analysis support. Thank you to The San Juan County Marine Mammal Stranding Network Program Coordinator Jessica Farrer for operations support. We could not conduct such a successful program without the Board of Directors and staff of The Whale Museum, the vision of the former Soundwatch Program Directors, Rich Osborne and Kari Koski, the help of Lynne

Barre and Grace Ferrara from NOAA Fisheries West Coast Region, the help of Alan Myers, Taylor Kimball and Washington Department of Fish and Wildlife Law Enforcement Officers, the help of Dr. Julie Watson and Jessica Stocking of Washington Department of Fish and Wildlife, and the assistance and the dedication of the more than 849 past and present interns and volunteers who have collectively contributed more than 70,000 volunteer hours to Soundwatch activities since 1996. Special thanks also go to the numerous supporters along with the following organizations that help support and collaborate with our efforts: NOAA Fisheries West Coast Region, Northwest Fisheries Science Center, Fisheries and Oceans Canada, Transport Canada, Washington Department of Fish and Wildlife, San Juan County's Marine Resource Committee, San Juan County Parks, Straitwatch & Cetus Society, U.C. Davis, the Center for Whale Research, Orca Network, Wild Orca, Sea Doc Society, Snug Harbor, Port of Friday Harbor, Roche Harbor Marine and Marina, and the numerous, generous contributions from regional foundations, businesses and individuals over the years. To all our partners and supporters, thank you!

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Appendices

Be Whale Wise
Marine Wildlife Laws & Guidelines for Boaters, Paddlers and Viewers
(Revised 2016)
www.bewhalewise.org

Seeing killer whales and other marine wildlife in their natural environment can be a thrilling experience. In our excitement, we sometimes forget that our presence has an effect on wildlife and their habitat. Just like us, marine mammals need space to find food, choose mates, raise young, socialize and rest. When we get too close, approach too fast, or make too much noise, we may be disrupting these activities and causing the animals unnecessary stress. In some cases, we may be threatening their lives. Set an example for others, and help protect our spectacular marine resources.

Be Whale Wise – Follow these guidelines and local laws in the presence of marine wildlife.

Why do we need guidelines?
The diversity and complexity of marine life in the inland and coastal waters of British Columbia and Washington is truly extraordinary. It is a fragile world. Pollution, global climate change and other impacts are taking their toll at all levels of the coastal food web. Many species of marine wildlife, such as the endangered Southern Resident killer whales, are showing signs of vulnerability. Meanwhile, vessel traffic in our waters is steadily increasing, placing added pressures on marine animals and their habitats.

We need to minimize our impact.
These guidelines are designed to help you enjoy your wildlife encounter, and reduce the risk of disturbing marine wildlife.

BE WHALE WISE!
DO YOUR PART TO PROTECT MARINE WILDLIFE FROM HARASSMENT AND DISTURBANCE.
FOLLOW THESE GUIDELINES AND ALL LOCAL LAWS.

The laws:
Regulations in Canada and the U.S. prohibit the harassment and disturbance of marine mammals. Many species are threatened or endangered and subject to additional protections under the Endangered Species Act (U.S.) and the Species at Risk Act (Canada).

What is a disturbance?
Disturbance is when we interfere with an animal's ability to hunt, feed, communicate, socialize, rest, breed, or care for its young. These are critical life processes, necessary for healthy marine wildlife populations.

NEED MORE INFORMATION?
Fisheries & Oceans Canada: www.canada.ca/en/fisheries-occeans.html
Robson Blight (Michael Biggs) Ecological Reserve: www.enr.gov.bc.ca/bcparcs/eco_reserve/robsonblight.html
Straitwatch: www.straitwatch.org or 1-250-590-7723
North Island Marine Mammal Stewardship Association: www.nimmsa.org
US/INLAND WA WATERS: To report a marine mammal harassment, entanglement or stranding: NOAA Fisheries, Office for Law Enforcement: 1-800-853-1964
Entanglements: 1-877-707-9425
Strandings: 1-866-767-6114
Download the dolphin and whale 911 app
TO REPORT MARINE MAMMAL SIGHTINGS: The Whale Museum Hotline (WA State): hotline@whalemuseum.org or 1-800-562-8832
Orca Network (WA State): orca-network.org or 1-866-672-2638
NEED MORE INFORMATION? Soundwatch Boater Education Program www.whalemuseum.org or 1-360-378-4710 ext. 33
NOAA Fisheries, West Coast Region: <http://www.westcoast.fisheries.noaa.gov>
NOAA Fisheries, Office of Protected Resources: www.nmfs.noaa.gov/opr/

U.S. STRANDING NETWORK
1-866-767-6114
U.S. ENTANGLEMENT NETWORK
1-877-767-9425
CANADIAN MARINE MAMMAL Reporting Hotline
1-800-465-4336

REGULATIONS FOR KILLER WHALES IN U.S. WATERS
WHERE do federal regulations to protect killer whales apply? In inland waters of Washington State, east of the entrance to the Strait of Juan de Fuca and south of the U.S./Canada boundary.
WHAT do the regulations require? Except for specific exemptions, it is unlawful for any person to:
• Cause a vessel to approach, in any manner, within 200 yards (182.9 metres) of any killer whale.
• Position a vessel to be in the path of any killer whale at any point located within 400 yards (365.8 metres) of the whale.
WHO do the regulations apply to? All motorized and non-motorized vessels (including kayaks and paddleboards), with exceptions to maintain safe navigation and for certain types of vessels—government vessels in the course of official duties, ships in the shipping lanes, research vessels under permit, and vessels lawfully engaged in commercial or treaty Indian fishing that are actively setting, retrieving, or closely tending fishing gear.
WHY did NOAA adopt regulations? Southern Resident killer whales were listed as endangered in 2005. Vessel impacts were identified as one of the threats. These regulations implement an action in the recovery plan and are designed to protect all killer whales by reducing impacts from vessels. Southern Residents are also listed as endangered under the Species at Risk Act in Canada.

TRANS-BOUNDARY GUIDELINES FOR THE UNITED STATES AND CANADA. APPLY TO ALL MARINE MAMMALS AND BIRDS
1. **DO NOT APPROACH** or position your vessel closer than 200 metres/yards to any killer whale in the U.S. **DO NOT APPROACH** or get closer than 100 metres/yards to any other marine mammals or birds, whether on the water or on land.
2. **BE CAUTIOUS, COURTEOUS and QUIET** when around areas of known or suspected marine wildlife activity, in the water or at haul-outs and bird colonies on land; especially from May to September during breeding, nesting and seal pupping seasons.
3. **LOOK** in all directions before planning your approach or departure from viewing wildlife.
4. **SLOW DOWN:** reduce speed to less than 7 knots when within 400 metres/yards of the nearest marine mammal to reduce your engine's noise and vessel's wake.
5. **ALWAYS** approach and depart from the side, moving parallel to the animal's direction of travel. If the animal(s) are approaching you, cautiously move out of the way and avoid abrupt course changes. **DO NOT** approach from the front or from behind.
6. **PLACE ENGINE IN NEUTRAL** and allow animals to pass if your vessel is not in compliance with the approach regulation or guideline (#1).
7. **PAY ATTENTION** and move away slowly and cautiously, at the first sign of disturbance or agitation.
8. **STAY** on the **OFFSHORE** side of whales when they are traveling close to shore.
9. **ALWAYS** avoid going through groups of porpoises or dolphins and hold course and reduce speed gradually to discourage bow or stern-riding.
10. **LIMIT** your viewing time to 30 minutes or less. This will reduce the cumulative impact of all vessels and give consideration to other viewers.
11. **DO NOT** disturb, swim with, move, feed or touch any marine wildlife. If you are concerned about a potentially sick, stranded or entangled animal, contact your local stranding network.
Drones/Unmanned Aircraft Vehicle or System (UAV/USV) Guidance
It is illegal to harm or disturb wildlife. To prevent disturbance from an unmanned aerial vehicle (UAV/ drone) operators must use extreme caution. UAV/ drones may interfere with an animal's ability to hunt, feed, communicate, socialize, rest, breed, or care for its young. Fly during daylight hours, keep your drone in sight and limit your viewing time to reduce the cumulative impact. This is rapidly evolving technology. Know and follow all local regulations.
Marine Protected Areas, Wildlife Refuges, Ecological Reserves and Parks:
1. **CHECK** your nautical charts for the location of various protected areas.
2. **ABIDE** by posted restrictions or contact a local authority for further information.


U.S. LAW: STAY 200 M/YD FROM ORCAS
GUIDELINE
100 M/YD NO APPROACH ZONE FOR ALL MARINE MAMMALS IN US & CANADA
U.S. LAW: KEEP PATH CLEAR TO 400 M/YD
NO GO ZONE

400 M/YD SLOW ZONE
800 M/YD SLOW APPROACH ZONE
100 METRES/YARDS = 1 FOOTBALL FIELD

Appendix A1: Be Whale Wise Guidelines and Federal/State Regulations for Boaters, Paddlers and Viewers; Revised 2016.

Be Whale Wise

MARINE WILDLIFE GUIDELINES FOR BOATERS, PADDLERS AND VIEWERS



TRANS-BOUNDARY GUIDELINES FOR THE UNITED STATES AND CANADA APPLIES TO ALL MARINE MAMMALS AND BIRDS.

- DO NOT APPROACH** or position your vessel closer than 200 metres/ yards to any killer whale in the U.S. **DO NOT APPROACH** or get closer than 103 metres/yards to any other marine mammals or birds, whether on the water or on land.
- BE CAUTIOUS, COURTEOUS AND QUIET** when around areas of known or suspected marine wildlife activity, in the water or at haul-out and bird colonies on land. Especially from May to September during breeding, nesting and seal pupping seasons.
- LOOK** in all directions before planning your approach or departure from viewing wildlife.
- SLOW DOWN** reduce speed to less than 7 knots when within 400 metres/yards of the nearest marine mammal to reduce your engine's noise and vessel's wake.
- ALWAYS** approach and depart from the side, moving parallel to the animal's direction of travel. If the animal(s) are approaching you, cautiously move out of the way and avoid abrupt course changes. **DO NOT** approach from the front or from behind.
- If your vessel is not in compliance with the 100 metres/yards approach guideline (9.1), place engine in neutral and allow animals to pass.
- PAY ATTENTION** and move away, slowly and cautiously, at the first sign of disturbance or agitation.
- STAY ON THE OFFSHORE** side of the whales when they are traveling close to shore.
- ALWAYS** avoid going through groups of porpoises or dolphins and hold course and reduce speed gradually to discourage bow or stern riding.
- LIMIT** your viewing time to 30 minutes or less. This will reduce the cumulative impact of all vessels and give consideration to other viewers.
- DO NOT** disturb, swim with, move, feed or touch any marine wildlife. If you are concerned about a potentially sick, stranded animal, or entangled animal, contact your local stranding network.

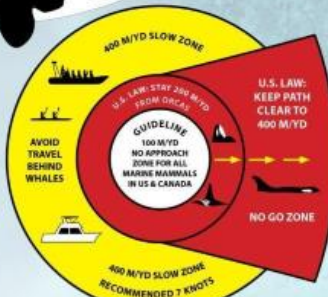
DRONES/UNMANNED AIRCRAFT VEHICLE OR SYSTEM (UAV/UAS) GUIDANCE

It is illegal to harm or disturb wildlife. To prevent disturbances from an unmanned aerial vehicle (UAV/drone) over the marine environment operators must use extreme caution. UAVs/drones may cause a disturbance to the animal. Fly during daylight hours, keep your drone in sight and limit your viewing time to reduce the cumulative impact. This is rapidly evolving technology...know and follow all local regulations.

MARINE PROTECTED AREAS, WILDLIFE REFUGES, ECOLOGICAL RESERVES AND PARKS

- CHECK** your nautical charts for the location of various protected areas.
- ABIDE** by posted restrictions or contact a local authority for further information.

www.bewhalewise.org



IN INLAND WATERS OF WASHINGTON IT IS UNLAWFUL FOR ANY PERSON TO:

- Cause a vessel to approach, in any manner, within 200 yards/meters of any killer whale.
- Position a vessel to be in the path of any killer whale at any point located within 400 yards/meters of the whale.

The regulation applies to all motorized and non-motorized vessels (including kayaks and paddleboards) with exemptions for government vessels conducting official duties, ships in the shipping lanes, permitted research vessels, and vessels lawfully engaged in commercial or treaty Indian fishing that are actively setting, retrieving, or tending fishing gear.

LAW: Regulations in Canada and the U.S. prohibit the harassment and disturbance of marine mammals. Many species are threatened or endangered and subject to additional protections under the Endangered Species Act (U.S.) and the Species at Risk Act (CANADA).

TO REPORT A MARINE MAMMAL DISTURBANCE OR HARASSMENT

CANADA/B.C. GULF ISLANDS: To report injured, distressed, dead, stranded or entangled marine mammals or sea turtles:
Fisheries & Oceans Canada/B.C. Marine Mammal Incident 24/7 Hotline: 1-800-665-4338

US/INLAND WA WATERS: To report a marine mammal harassment, entanglement or stranding:
NOAA Fisheries, Office for Law Enforcement: 1-800-853-1964
Entanglements: 1-877-707-9425 / Strandings: 1-866-767-6714
Download the dolphin and whale #11 app


DID YOU SEE A WHALE?

TO REPORT A MARINE MAMMAL & SEA TURTLE SIGHTING:


CANADA/B.C. GULF ISLANDS: B.C. Cetacean Sighting Network: 1-866-472-9463 or sightings@bcsempaq.org / www.bewhales.org
WhaleReport app available on iTunes and Google Play

US/INLAND WA WATERS: The Whale Museum Hotline (WA): hotline@whalemuseum.org or 1-800-562-8832

Orca Network (WA): info@orcaneetwork.org or 1-866-672-2638



Appendix A2: Be Whale Wise Guidelines and Federal/State Regulations Poster for Boaters, Paddlers and Viewers; Revised 2016.



Be Whale Wise

Marine Wildlife Laws & Guidelines for Boaters, Paddlers and Viewers

(Revised 2020)
www.bewhalewise.org

BE WHALE WISE!

DO YOUR PART TO PROTECT MARINE WILDLIFE FROM HARASSMENT AND DISTURBANCE. FOLLOW GUIDELINES AND ALL LAWS.

Why do we need guidelines?

The diversity and complexity of marine life in the inland and coastal waters of British Columbia and Washington is truly extraordinary. It is a fragile world. Pollution, global climate change and other impacts are taking their toll at all levels of the coastal food web. Many species of marine wildlife, such as the endangered Southern Resident killer whales or orcas, are impacted by human activities. Meanwhile, vessel traffic in our waters is steadily increasing, placing added pressures on marine animals and their habitats.

We need to minimize our impact. Guidelines and laws are designed to help you employ best practices, while reducing risks of disturbing marine wildlife.

What are the laws?


Regulations in Canada and the U.S. prohibit the harassment and disturbance of marine mammals. Many species are threatened or endangered and subject to additional protections under the Endangered Species Act (U.S.) and the Species at Risk Act (Canada).

Southern Resident killer whales are listed as endangered in both Canada and the United States. Vessel impacts have been identified as one of the threats. Regulations are in place to protect killer whales by reducing noise, disturbance and other impacts from vessels. Canadian and Washington State regulations were updated in 2018.

U.S. STRANDING NETWORK
1-866-767-6114

U.S. ENTANGLEMENT NETWORK
1-877-767-9425

CANADIAN MARINE MAMMAL RESPONSE
1-800-465-4336



THE WHALE WARNING FLAG INDICATES THAT WHALES ARE IN THE AREA. VESSELS SHOULD SLOW DOWN AND INCREASE VIGILANCE.

REGULATIONS FOR KILLER WHALES IN US AND CANADIAN WATERS

In the US, it is unlawful to:


- Cause a vessel to approach, in any manner, within 300 yards (274.3 metres) of Southern Resident killer whales (SRKW) and 200 yards from transients.
- Position a vessel to be in the path of or behind any killer whale at any point located within 400 yards (365.8 metres) of the whale.
- Travel faster than 7 knots within 1/2 mile of any killer whale or fail to deactivate engine within 300 yards.

In Canada (British Columbia):

- Vessels are required to maintain a minimum approach distance of 400 metres from all killer whales in all southern BC coastal waters between Campbell River and just north of Ucluelet, 200 metres from all killer whales in B.C. waters year-round.
- Avoid boating or fishing in Interim Sanctuary Zones.

Who do the regulations apply to? All motorized and non-motorized vessels (including kayaks and paddleboards), with exceptions to maintain safe navigation and for certain types of vessels.

Additional information, specific details on exceptions and more can be found on the website:
<http://bewhalewise.org>



TRANS-BOUNDARY LAWS AND GUIDELINES FOR THE U.S. AND CANADA APPLY TO ALL MARINE MAMMALS AND BIRDS

LAWS:

- **DO NOT** disturb, swim with, move, feed or touch any marine wildlife. If you are concerned about a potentially sick, stranded or entangled animal, contact your local stranding or response network.
- In Canada, **keep 100 metres away** from all whales, dolphins and porpoises or **200 metres away** if they are resting or with a calf and abide by specific approach distances for killer whales.

GUIDELINES:

- 1. DO NOT APPROACH** or get closer than 100 metres/yards to any other marine mammals or birds.
- 2. BE CAUTIOUS, COURTEOUS and QUIET** around areas of known or suspected marine wildlife activity, in the water or at haul-outs and bird colonies. When safe to do so, turn off fish finders and echo sounders.
- 3. LOOK** in all directions before planning your approach or departure from viewing wildlife. Be vigilant for signs of marine mammal presence. Whales may change direction or surface unpredictably.
- 4. SLOW DOWN.** Reduce speed to less than 7 knots when within a half mile or 1000 metres of the nearest marine mammal to reduce your engine's noise and vessel's wake.
- 5. ALWAYS** approach and depart from the side, moving parallel to the animal's direction of travel. If the animal(s) are approaching you, cautiously move out of the way and avoid abrupt course changes. DO NOT approach from the front or from behind.
- 6. PLACE ENGINE IN NEUTRAL OR SHUTDOWN** and allow animals to pass if your vessel is not in compliance with regulations.

- 7. PAY ATTENTION** and move away, slowly and cautiously, at the first sign of disturbance or agitation.
- 8. STAY on the OFFSHORE** side of whales when they are traveling close to shore.
- 9. ALWAYS** avoid going through groups of porpoises or dolphins. Hold course and reduce speed gradually to discourage bow or stern-riding.
- 10. LIMIT** your viewing time to 30 minutes or less. Consider number of vessels present to reduce the cumulative impact of all vessels and give consideration to other viewers.

Drones/Unmanned Aircraft Vehicle or System (UAV/USAS) Guidance

The noise and close proximity of drones can disturb wildlife. When viewing marine mammals from the air using a drone: (1) Maintain a 1,000-foot minimum horizontal distance and do not fly directly over marine mammals; and (2) avoid vehicle maneuvers around marine mammals (on land or in the water), as these actions may alter animal behavior. Know and follow all local regulations.

Marine Protected Areas, Wildlife Refuges, Ecological Reserves, Parks, and Sanctuaries:

- 1. CHECK** your nautical charts for the location of various protected areas.
- 2. ABIDE** by posted restrictions or contact a local authority for further information. Avoid voluntary No-Go Zones on the westside of San Juan Island. Be aware of critical habitat areas and Canadian Interim Sanctuary Zones (www.tc.gc.ca).

REGULATIONS FOR KILLER WHALES IN US AND CANADIAN WATERS

Guideline in Canada: under 7 knots within 1,000 metres of orcas

Law in U.S.: under 7 knots within 1/2 mile of orcas

Law in Canada: stay 400 metres away from orcas in all southern BC coastal waters between Campbell River and just north of Ucluelet

Law in U.S.: stay 400 yards behind orcas

Law in U.S.: stay 400 yards out of orcas' path

Law in U.S.: stay 300 yards from either side of orcas

100 METRES/YARDS = 1 CONTAINER SHIP
and keep 200 metres away from whales, dolphins or porpoises if they are resting or with their calf.

www.bewhalewise.org

Appendix A3: Be Whale Wise Be Whale Wise Guidelines and Federal/State Regulations for Boaters, Paddlers and Viewers; Revised 2020, Double-sided Brochure Version.

Be Whale Wise

Marine Wildlife Laws & Guidelines for Boaters, Paddlers and Viewers
(Revised 2021)
www.bewhalewise.org

Seeing killer whales and other marine wildlife in their natural environment is a thrilling experience.

In our excitement, we sometimes forget that our presence has an effect on wildlife and their habitat. Just like us, marine mammals need space to find food, choose mates, raise young, socialize, and rest.

When we get too close, approach too fast, or make too much noise, we may disrupt these activities and cause the animals unnecessary stress. In some cases, we may be threatening their lives.

Be Whale Wise! Follow the laws and guidelines, set an example for others, and help protect our spectacular marine wildlife.

Why do we need guidelines?

The diversity and complexity of marine life in the inland and coastal waters of British Columbia and Washington is truly extraordinary. It is a fragile world. Pollution, global climate change and other impacts are taking their toll at all levels of the coastal food web. Many species of marine wildlife, such as the endangered Southern Resident killer whales or orcas, are impacted by human activities. Meanwhile, vessel traffic in our waters is steadily increasing, placing added pressures on marine animals and their habitats.

We need to minimize our impact. Guidelines and laws are designed to help you enjoy best practices, while reducing risks of disturbing marine wildlife.

What are the laws?

Regulations in Canada and the U.S. prohibit the harassment and disturbance of marine mammals. Many species are threatened or endangered and subject to additional protections under the Endangered Species Act (U.S.) and the Species at Risk Act (Canada).

Southern Resident killer whales are listed as endangered in both Canada and the United States. Vessel impacts have been identified as one of the threats. Regulations are in place to protect killer whales by reducing noise, disturbance and other impacts from vessels.

CANADA

To report marine mammal disturbance or injured, distressed, dead, stranded or entangled marine mammals or sea turtles:
Fisheries & Oceans Canada/BC, Marine Mammal Incident Reporting 24/7 Hot-line:
1-800-465-4336 or DFO-ORP-APPO-DN300-mpss.gc.ca

REPORT SIGHTINGS (MARINE MAMMAL & SEA TURTLE):
B.C. Cetacean Sightings Network www.whalewhales.org
1-866-472-9663
WhaleReport app available on iTunes and Google Play

NEED MORE INFORMATION?
Fisheries & Oceans Canada:
www.canada.ca/en/fisheries-oceans.html
Transport Canada TC-580W-ERS-TC.gc.ca
Robson Bight (Michael Bigg) Ecological Reserve:
www.wm.gov.bc.ca/tc/parks/eco_reserve/robson_b_e.html
Straitwatch: www.straitwatch.org or 1-250-590-7723
North Island Marine Mammal Stewardship Association
www.nimmsa.org
MERS www.seeblogswallow.org

UNITED STATES

To report a marine mammal harassment, entanglement or stranding:
NOAA Fisheries, Office for Law Enforcement:
1-800-853-1964
Entanglements: 1-877-307-9425
Strandings: 1-866-762-6114
Download the Dolphin and Whale 911 app

REPORT MARINE MAMMAL SIGHTINGS:
The Whale Museum (U.S. and Canada):
hotline@whalemuseum.org or 1-800-562-8822
Orca Network (WA State):
info@orcaneck.org or 1-866-672-2638

NEED MORE INFORMATION?
Soundwatch Boater Education Program
www.whalemuseum.org or 1-360-378-4710 ext. 33
NOAA Fisheries, West Coast Region:
<http://www.westcoast.fisheries.noaa.gov>

U.S. STRANDING NETWORK
1-866-767-6114

U.S. ENTANGLEMENT NETWORK
1-877-767-9425

CANADIAN MARINE MAMMAL RESPONSE
1-800-465-4336

THE WHALE STRANDING FLAG INDICATES THAT WHALES ARE IN THE AREA. VESSELS SHOULD SLOW DOWN AND INCREASE VIGILANCE.

TRANS-BOUNDARY LAWS AND GUIDELINES FOR THE U.S. AND CANADA APPLY TO ALL MARINE MAMMALS AND BIRDS

REGULATIONS FOR KILLER WHALES IN US AND CANADIAN WATERS

In the U.S. it is unlawful to:

- Cause a vessel to approach, in any manner, within 300 yards (274.3 metres) of Southern Resident killer whales (SRKW) and 200 yards from transients. Position a vessel to be in the path of or behind any killer whale at any point located within 400 yards (365.8 metres) of the whale.
- Travel faster than 7 knots within 1/2 mile of any killer whale or fail to disengage engine within 300 yards.

In Canada (British Columbia):

- Vessels are required to maintain a minimum approach distance of 400 metres from all killer whales in all southern BC coastal waters between Campbell River and just north of Ucluelet; 200 metres (218.7 yards) from all killer whales in B.C. waters year-round.
- Avoid boating or fishing in Interim Sanctuary Zones.

Who do the regulations apply to? All motorized and non-motorized vessels including kayaks and paddleboards, with exceptions to maintain safe navigation and for certain types of vessels.

LAW:

- **DO NOT** disturb, swim with, move, feed or touch any marine wildlife. If you are concerned about a potentially sick, stranded or entangled animal, contact your local stranding or response network.
- In Canada, **keep 100 metres away** from all whales, dolphins and porpoises or **200 metres away** if they are resting or with a calf and abide by specific approach distances for killer whales.

GUIDELINES:

1. **DO NOT APPROACH** or get closer than 100 metres/yards to any other marine mammals or birds.
2. **BE CAUTIOUS, COURTEOUS and QUIET** around areas of known or suspected marine wildlife activity, in the water or at haul-outs and bird colonies. When safe to do so, turn off fish finders and echo sounders.
3. **LOOK** in all directions before planning your approach or departure from viewing wildlife. Be vigilant for signs of marine mammal presence. Whales may change direction or surface unpredictably.
4. **SLOW DOWN**. Reduce speed to less than 7 knots when within a half mile or 1,000 metres of the nearest marine mammal to reduce your engine's noise and vessel's wake.
5. **ALWAYS** approach and depart from the side, moving parallel to the animal's direction of travel. If the animal(s) are approaching you, cautiously move out of the way and avoid abrupt course changes.
6. **DO NOT** approach from the front or from behind.
6. **PLACE ENGINE IN NEUTRAL OR SHUTDOWN** and allow animals to pass if your vessel is not in compliance with regulations.

7. **PRAY ATTENTION** and move away, slowly and cautiously, at the first sign of disturbance or agitation.
8. **STAY on the OFFSHORE** side of whales when they are traveling close to shore.
9. **ALWAYS** avoid going through groups of porpoises or dolphins. Hold course and reduce speed gradually to discourage bow or stern riding.
10. **LIMIT** your viewing time to 30 minutes or less. Consider number of vessels present to reduce the cumulative impact of all vessels and give consideration to other viewers.

Drones/Unmanned Aircraft Vehicle or System (UAV/UAS) Guidance

The noise and close proximity of drones can disturb wildlife. When viewing marine mammals from the air using a drone: (1) maintain a 1,000-foot minimum altitude within a 0.5 nautical mile (approx. 3,000 ft radius) of a marine mammal; and (2) avoid flight maneuvers around marine mammals (on land or in the water), as these actions may cause stress or alter animal behavior. Know and follow all local regulations – in Canada it's the law.

www.bewhalewise.org

100 METRES/YARDS = 1 CONTAINER SHIP

Keep 200 metres away from whales, dolphins or porpoises if they are resting or with their calf and 100 metres/yards no approach zone for all other marine mammals in U.S. & Canada.

Information presented is current as of this printing June 2021. Please check the website for updates.

<http://www.bewhalewise.org>

Scan me


Appendix A4: Be Whale Wise Be Whale Wise Guidelines and Federal/State Regulations for Boaters, Paddlers and Viewers; Revised 2021, Double-sided Brochure Version (Available at <http://www.bewhalewise.org>).

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Be Whale Wise

Marine Wildlife Laws & Guidelines for Boaters, Paddlers and Viewers

(Revised 2021)
www.bewhalewise.org



REGULATIONS FOR KILLER WHALES
IN THE U.S. AND CANADIAN WATERS

What do the regulations require (except for specific exemptions)?

In the U.S., it is a violation to:


- Cause a vessel to approach, in any manner, within 300 yards (274.3 meters) of Southern Resident killer whale (SRKW) and 200 yards from transient.
- Position a vessel to be in the path of or behind any killer whale or any pod located within 400 yards (365.8 meters) of the whale.
- Travel faster than 7 knots within 1/2 mile of any killer whale or fail to shut down engine within 100 yards.

In Canada (British Columbia):

- Vessels are required to maintain a minimum approach distance of 400 metres from all killer whales in all southern B.C. coastal waters between Campbell Head and just north of Hecetae, 200 metres (218.7 yards) from all killer whales in B.C. waters year-round.
- Avoid boating or fishing in Interim Sanctuary Zones.

Who do the regulations apply to? All recreational and non-recreational vessels (including kayaks and paddleboards), with exceptions to maintain safe navigation and for certain types of vessels.

Additional information, specific details on exceptions and more can be found on the website: <http://www.bewhalewise.org>



Guidelines in Canada: under 7 knots within 1,000 metres of orcas
Law in U.S.: under 7 knots within 1/2 mile of orcas

Law in Canada: stay 200 metres from orcas
Law in U.S.: stay 300 yards from orcas

Law in U.S.: stop 100 yards behind orcas
Law in U.S.: stay 100 yards out of orcas' path

100 METRES = 109.36 YARDS

www.bewhalewise.org

Keep 300 metres away from whales, dolphins or porpoises if they are resting or with their calf and 100 metres from approach zones for all other marine mammals in US-Canada.

TRANS-BOUNDARY LAWS AND GUIDELINES FOR THE U.S. AND CANADA APPLY TO ALL MARINE MAMMALS AND BIRDS

LAWS:

1. **DO NOT** disturb, swim with, touch, land or touch any marine wildlife. If you are concerned about a potentially sick, stranded or entangled animal, contact your local or regional network.
2. **In Canada, keep 100 metres away from all whales, dolphins and porpoises or 200 metres away if they are resting or with a calf and abide by specific approach distances for killer whales.**

GUIDELINES:

1. **DO NOT APPROACH** or get closer than 100 metres/yards to any other marine mammal or birds.
2. **BE CAUTIOUS, DOWN TIPS and QUIET** around areas of known or suspected marine wildlife activity. In the water or at boat ends and outboard motors. When safe to do so, turn off fish finders and echo sounders.
3. **LOOK** in all directions before planning your approach or departing from viewing wildlife. Be vigilant for signs of marine mammal presence. Wildlife may change direction or surface unexpectedly.
4. **SLOW DOWN.** Reduce speed to less than 7 knots when within a half mile or 1,000 metres of the nearest marine mammal to reduce your engine's noise and vessel wake.
5. **ALWAYS** approach and depart from the side, moving parallel to the animal's direction of travel. If the animal is now approaching you, continue to move out of the way and avoid abrupt course changes. **DO NOT** approach from the front or from behind.
6. **PLACE ENGINE IN NEUTRAL OR SHUTDOWN** and allow animals to pass if your vessel isn't in compliance with regulations.
7. **PAY ATTENTION** and move away slowly and carefully, at the first sign of disturbance or agitation.
8. **STAY OFFSHORE** side of whale as they are traveling close to shore.
9. **ALWAYS** avoid going through groups of porpoises by doubling. Hold course and reduce speed gradually to discourage bow or sterning.
10. **LIMIT** your viewing time to 30 minutes or less. Consider number of vessels present to reduce the cumulative impact of all vessels and give consideration to other viewers.

Drones/Unmanned Aircraft Vehicle or System (UAV/UAS) Guidance

The noise and close proximity of drones can disturb wildlife. When viewing marine mammals from the air using a drone: (1) maintain a 1,000-foot minimum altitude within a 5 nautical mile (9,000 ft) radius of a marine mammal; and (2) avoid flight manoeuvres around marine mammals (on land or in the water), as these actions may cause stress or other animal behavior. Know and follow all local regulations in Canada. It's the law.

Marine Protected Area, Wildlife Refuges, Ecological Reserves, Parks, and Sanctuaries:

1. **CHECK** your nautical charts for the location of various protected areas.
2. **ABIDE** by posted restrictions or contact a local authority for further information. Avoid voluntary 100-200 Zone on the westside of San Juan Island. Be aware of coastal habitat areas and Canadian Marine Sanctuary Zones (MWSZ/GSC).

CANADA

To report marine mammal disturbance, entanglement, death, stranded or entangled marine mammals or sea turtles:
Fisheries & Oceans Canada/B.C. Marine Mammal Incident Reporting 24/7 Hot Line: 1-800-405-0339

REPORT SIGHTINGS please use our online form at:
B.C. Cetacean Sighting Network www.bccetaneanetwork.org
1-800-472-0067
WhatsApp app available on iTunes and Google Play

NEED MORE INFORMATION?
Fisheries & Oceans Canada
www.canada.ca/en/fisheries-oceans.html
Telephone Canada: 1-877-975-3736
Robson Bight (Michael Bigg) Ecological Reserve:
www.gov.bc.ca/dsp/ebc/ebc.html
Stratford: www.stratford.ca or 1-226-260-7723
North Island Marine Mammal Stewardship Association:
www.nimmsa.org

NRRI www.zooandaquarium.org

UNITED STATES


To report a marine mammal harassment, entanglement or stranding:
NOAA Fisheries, Office for Law Enforcement:
200K-873-1904
Bringing Home: 1-877-307-0425
Stranding: 1-800-761-4114
Download the Dolphin and Whale #1 app

REPORT MARINE MAMMAL SIGHTINGS:
The Whale Museum Helpline (U.S. and Canada):
helpline.whalemuseum.org or 1-800-502-0832
Orca Network (WA State):
orcaobservatory.org or 1-800-472-2859

NEED MORE INFORMATION?
Soundwatch Boater Education Program:
www.whalemuseum.org or 1-800-574-5141 ext. 22
NOAA Fisheries, West Coast Region:
<http://www.westcoastfisheries.noaa.gov>

Appendix A5: Be Whale Wise Guidelines and Federal/State Regulations Poster for Boaters, Paddlers and Viewers; Revised 2021 (Available at <http://www.bewhalewise.org>).

In 2011, NOAA Fisheries Service adopted new regulations under the Marine Mammal Protection Act and Endangered Species Act to protect **all killer whales**.



WHO do the new rules apply to? All motorized and non-motorized vessels (including kayaks), with exceptions to maintain safe navigation and for certain types of vessels- government vessels in the course of official duties, ships in the shipping lanes, research vessels under permit, and vessels lawfully engaged in commercial or treaty Indian fishing that are actively setting, retrieving, or closely tending fishing gear.

WHAT do the new rules say? Except for specific exceptions, it is unlawful for any person subject to the jurisdiction of the United States to:

- I. Cause a vessel to approach, in any manner, within 200 yards (182.9 m) of any killer whale.
- II. Position a vessel to be in the path of any killer whale at any point located within 400 yards (365.8 m) of the whale.

WHEN do the new rules go into effect? May 16, 2011

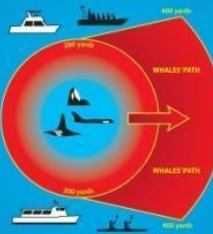
WHERE do the new rules apply? In inland waters of Washington State- east of the entrance to the Strait of Juan de Fuca and south of the U.S./Canada international boundary.

WHY did NOAA adopt new regulations? Southern Resident killer whales were listed as endangered in 2005. Vessel impacts were identified as one of the threats. These new regulations implement an action in the recovery plan and are designed to protect all killer whales by reducing impacts from vessels. Additional background information on the rationale and analyses to support the regulations is available at www.nwr.noaa.gov.


Be Whale Wise

and Follow the Law
It's as easy as 1, 2, 3...

1. The **ONE** place not to be is in the path of whales. Don't position your vessel in the path of approaching whales within 400 yards of a whale.
2. Stay at least **TWO** hundred yards away from any killer whale (200 yards = the distance of two football fields or about 200 meters).
3. Remember these **THREE** ways to Be Whale Wise: follow the guidelines for viewing all wildlife, check for local protected areas and restrictions, and always be safe.



Visit www.be-whalewise.org to learn more, download the laws, regulations, and guidelines, and to report violations.



Appendix B: Federal and State Vessel Regulations for Killer Whales Double-sided Rack Card used by WDFW in 2016 and 2017.

Be Whale Wise

Follow boating and kayaking regulations to help protect endangered Southern Resident killer whales.











Appendix B2: Federal and State Vessel Regulations for Killer Whales used by WDFW in 2023.

KAYAK SIGN IN SHEET 2015								
For commercial kayak companies only								
DATE	COMPANY	# GUESTS	# GUIDES	# BOATS	TIME OUT	TIME IN	GUIDE	PARKING
3/4	DSK	2	1	2	12:30	1	KMY	NO
3/5	DSK	2	1	2	12:30	3	KMY	NO
3/7	DSK	3	1	2	12	4:15	KMY	No
3/7	SQ	2	2	2	12:15	4:20	MCS	Yes
3/7	DSK	2	1	2	12:30	2:45	CH	No
3/21	DSK	2	2	3	2:30	4:45	KMY	NO
3/22	DSK	8	1	5	4:45	11:45	CH	NO
3/23	SQ	10	1	6	11:00	5:00	MCS	Yes
3/22	DSK	2	1	2	2	1:45	CH	NO
3/21	DSK	2	1	2	2	4:45	Kelly	No
3/24	SQ	7	3	3	11:00	5:10	MCS	Yes
3/26	DSK	5	3	5	12:30	2	CH	NO
3/27	DSK	2	1	2	12:30	3	CH	NO
3/28	SQ	5	1	3	12:45	4:45	MCS	Yes
3/26	DSK	4	1	3	2:15	5	CH	NO
3/29	DSK	2	1	2	9:00	11:45	MCS	N
3/29	SQ	5	1	4	2	5:00	JP	Y
3/30	DSK	0	2	2	2	3:30	CH	NO TR
4/1	DSK	0	2	1	10	2:00	MCS	N
4/2	DSK	4	1	3	12	4:10	Kelly	No
4/2	SQ	6	1	3	12-1	5	JP	Y
4/4	DSK	4	1	3	1	4:30	CH	NO

All Kayak Companies Must Obtain Valid Permit
Prior to Launching
Launch and Camping Fees Must Be Paid At Time of Park Use

Appendix C: 2015 San Juan County Commercial Kayaker Launch Form.

**San Juan County
Parks & Recreation**

Complete & deposit with payment

Date permit issued _____
 Permit issued by _____
 Primary vessel operator _____
 City/ST/Zip _____
 Number of people __* (list to right →)
 Vessel type: kayak power boat
 Other _____
 Single use Multi Seasonal
 Date/s valid _____ campsite # _____
EXACT PAYMENT - NO CHANGE GIVEN
\$ PAID _____ NO REFUNDS.
 Cash Check # _____
 Fee waived-San Juan County resident

•Affix colored TAG
to bow of vessel in clear view
•Keep Vessel Launch Permit
with you on the water.

Primary vessel operator signature

***Permit issued to (list all names):**

Date permit issued _____
Date/s valid _____
Permit issued by _____
\$ Paid _____

NO REFUNDS

•Affix colored TAG
to bow of vessel in clear view.
•Keep Vessel Launch Permit
with you on the water.

THANK YOU!

**San Juan County
Parks & Recreation**
 350 Court Street #8
 Friday Harbor WA 98250
 Admin. Office 360-378-8420
 360-378-8420 parks@sanjuanco.com

Appendix D: 2013 - 2018 San Juan County Park Recreational Boat Launch Permit Form.

ADDITIONAL K.E.L.P. GUIDELINES
All paddlers are asked to follow these advisory guidelines to help preserve & protect our marine environment.

- Human-powered vessels may launch if they can safely maintain 200 yards from the whales.
- Paddle on the leeward side of whales. If paddling in a group, all paddlers will stay close together.
- To avoid being in the path of the whales, paddlers should pass leeward and out of the path of oncoming whales well before the whales are within 400 yards. In some cases, paddlers may need to stop where they are, or move further offshore, to avoid being within 200 yards of whales & to avoid being in the path of the whales.
- If whales are approaching within 200 yards of shore, paddlers must move out of the way as soon as possible (leeward or up-bay), cut no, whose trail, and stop paddling until the whales have passed by. Paddlers will avoid headlands.
- If paddlers have taken all measures and still find themselves in immediate risk of compliance with the law, they will:
 - Paddle out of the path of oncoming whales 400 yards from the whales.
 - Immediately stop paddling & raft up within 200 yards until the whales have passed by.
- Paddlers shall avoid disturbing haul-out areas for marine life and/or their nesting sites by paddling in at least a 100 yard air whenever possible. Avoid reaching noise, direct eye contact, and unethical observations. May through October is the best window to see the pups for breeding pairs, sealions, and nesting birds.
- Paddlers will maintain a 200 yard distance from any National Wildlife Refuge. No landings are permitted except at designated areas.

ALL MARINE MAMMALS ARE PROTECTED FROM HARASSMENT OR DISTURBANCE UNDER THE U.S. MARINE MAMMAL PROTECTION ACT AND THE CANADIAN FISHERIES ACT.

Marine's 100 yard distance from all marine mammals (i.e., harp seals, humpback whales, humpback seals, harbor seals, sea otters, Steller sea lions, orca, black, humpback, and humpback whales, including seal pups). If you are concerned about a potentially sick or stranded animal, please contact the local stranding network hotline.

Southern Resident Killer Whales have additional protection as an Endangered Species under the U.S. Endangered Species Act and as a Species at Risk under the Canadian Species at Risk Act.

In Washington State waters, all killer whales are protected under RCW 77.15.740.

NEED BROSE INFORMATION?
The Whale Museum's Soundwatch Program
www.whalemuseum.org/pages/soundwatch-boater-education-program

NOAA Fisheries, West Coast Region
www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/killer_whale
Washington's orca regulations: Protecting Southern Resident Killer Whales
www.wdfw.wa.gov/conservation/orca

TO REPORT MARINE MAMMAL STRANDINGS/ SIGHTINGS: 1-800-362-8222 OR hotline@whalemuseum.org

TO REPORT A MARINE MAMMAL DISTURBANCE OR HARASSMENT:
U.S. NOAA Fisheries, Office for Law Enforcement
1-800-853-3166 or www.fishbase.gov
Washington Dept. of Fish and Wildlife Enforcement
1-509-862-2306

The K.E.L.P. Code of Conduct (Additional Guidelines) was created collaboratively by The Whale Museum & the San Juan Island Kayaker Association with input from WDFW & NOAA Fisheries.

The Kayaker Education & Leadership Program (K.E.L.P.) informs kayakers and other paddlers about marine wildlife regulations and guidelines in the San Juan Islands with the aim of reducing human-powered craft disturbance to all marine wildlife, including Southern Resident Killer Whales.

Human-powered vessels have the unique challenge of limited maneuverability and a variety of safety concerns that require special consideration in order to remain in compliance with federal laws and to reduce the overall risks of disturbing marine wildlife.

FEDERAL VESSEL REGULATIONS IN THE INLAND WATERS OF WASHINGTON DECLARE THAT IT IS UNLAWFUL TO:

- Cause a vessel to approach, in any manner, any killer whale within 200 yards.
- Pursue a vessel to be in the path of any killer whale at any point located within 400 yards.

The law applies to all types of boats, including motor boats, sailboats, kayaks, and paddle boards.

*Some exceptions apply, including vessel safety, vessel activity fishing commercially, crop or forest breaking in controlled riparian areas, and environmental/pollution research.

SAN JUAN ISLAND

MAP INDEX:
 NATIONAL WILDLIFE REFUGE
 SENSITIVE AREA
 PUBLIC LANDS
 BOTTOMFISH RECOVERY AREA
 MARINE PRESERVE
 VOLUNTARY MOTOR BOAT EXCLUSION ZONE

ALL RESPONSIBLE PADDLERS OF ANY HUMAN-POWERED VESSELS:

- Are aware of and strive to follow all local, state, and federal laws, and the Be Whale Wise Guidelines governing boating behavior around killer whales, other marine wildlife, and in Marine Protected Areas (see map).
- Have a trip plan before leaving shore. This includes knowing the area's boating laws, accessible public landing areas, safety issues, and environmental conditions.

Map Index Description

Marine Reserves
Regulation: Closed to all shellfish & bottomfish harvest. See WDFW Marine Area 7 for exact locations. **Salmon Fishing Closure:** No salmon fishing within 300 yards of Yellow and Low Islands to reduce rockfish mortality.

National Wildlife Refuges
Boaters are advised to stay 300 yards away to avoid disturbing marine mammals & birds.

Bottomfish Recovery Zones
Guideline: No bottom fishing within 1/4 mile offshore to protect and restore regional fishing.

Voluntary Motor Boat Exclusion Zone
Regulation: Remain 1/2 mile no go zone at Lime Kiln Point State Park when whales are present.

Sensitive Areas
Areas marked are for seal haul-outs & seabird nesting sites. Eelgrass beds provide critical habitat for juvenile fish. Please avoid disturbing sediments and vegetation.

Appendix E: 2018 Kayaker Code of Conduct Brochure, Folded, Double-sided (Available at <http://www.whalemuseum.org>)

The Kayaker Education & Leadership Program (K.E.L.P.) is a program that informs kayakers on marine wildlife regulations and guidelines with the aim to reduce human-powered vessel disturbance to Southern Resident orcas and all marine wildlife within the San Juan Islands.

Human powered vessels have the unique challenge of limited maneuverability and a variety of safety concerns that require special consideration to remain in compliance with federal laws and to reduce the overall risks of disturbing marine wildlife.

GUIDELINES FOR KAYAKERS WHEN ORCAS ARE PRESENT

The Kayakers' Code of Conduct is a set of San Juan Island area specific guidelines meant to be used along with regional Be Whale Wise Marine Wildlife guidelines and current Federal Vessel Laws.

- Do not launch from shore if you are unable to maintain 200 yards from the whales.
- Paddle to shore of further offshore to maintain 200 yards to the side and 400 yards out of their path.
- If within 400 yards of whales, kayakers should paddle toward shore, raft up in kelp beds, stop paddling, secure themselves and wait until the whales are 400 yards away.
- If offshore of whales and within 400 yards, raft up for safety in boat traffic (preferable kayakers will always be in shore of boat traffic.)
- Always adjust your plan of action according to the whales' direction of travel and the state and federal laws.

AREA IN DETAIL

MAP INDEX:
 NATIONAL WILDLIFE REFUGE
 SENSITIVE AREAS
 PUBLIC LANDS
 BOTTOMFISH RECOVERY AREA
 MARINE PRESERVE
 VOLUNTARY MOTOR BOAT EXCLUSION ZONE

Marine Preserves
Regulation: Closed to all shellfish & bottomfish activities. (See WDFW Marine Rules 7 for exact locations.) **Salmon Fishing Closure:** No salmon fishing within 300 yards of Yellow & Low Islands to reduce rockfish mortality.

National Wildlife Refuges
Boaters are advised to stay 300 yards away to avoid disturbing marine mammals & birds.

Bottomfish Recovery Zone
Guideline: No bottomfishing within 1/4 mile of shore to protect & restore regional fishing.

Voluntary Motor Boat Exclusion Zone
Guideline: Remain 1/4 mile offshore when orcas are present. Guideline: 1/2 mile no go zone at Lime Kiln Point State Park when orcas are present.

Sensitive Areas
Areas marked are for seal haul-outs & seabird nesting sites. Eelgrass beds provide critical habitat for juvenile fish. Please avoid disturbing sediments & vegetation.

Appendix F: 2016 - 2018 Kayaker Code of Conduct Rack Card, Double-sided (Available at <http://www.whalemuseum.org>)

VESSEL CONTACT								
Time	Location	Latitude	Longitude	why contacted?	Took BWW? Why Not?	Prev Cntct?	Redo?	Incident Recorded?
					Y N	Y N	Y N	Time:
Vessel Type	Vessel Activity	Vessel Name	Vessel ID	Reaction	Port	# pass	Photo?	Comments:

Appendix G: Soundwatch Data Sheet Vessel Contact.

Vessel Incident Log										
Time 24hour	General Location Name/Dir/Distance	Lat Decimal Minutes	Long Decimal Minutes	Quad Pick one!	Vessel Codes NOVESSEL ID'S NEEDED		Incident Code #'s	Previous Contact: Yes/No?	Photos? Yes/No?	Comments on Situation:
					TYPE	ACT				

Appendix H: Soundwatch Data Sheet Vessel Incidents.

DATE:	Time	Lat	Location Name: Dir: Distance:		Total Count:	Total Eco:	Total Priv:	Total: Kayak	Count: A B														
	Weekend <input type="checkbox"/>	Sea St:	Long	Quad:	Weather:	Visibility:	EU	EC	PM	PS	EK	PK	CA	PA	MM	RP	GW	GN	GD	MM	MX	MY	OTHER
Weekday <input type="checkbox"/>	Prog: J Jp K Kp L Lp T	Vessel Activity?		Whale Cmt/Mnt																			
Holiday <input type="checkbox"/>	Soc: DIBNON DIR: N S E W		Fish																				
	Cnic: CTC THT LOO SPRD SPRD Gps: dc tht loo		Transit																				
	Rmt: FLNK LIN NONLIN		Specific Rvrs:		Rsrch NonWhale																		
	Soc: Mnt S lo Med Fst Porp		Enforce Active																				
Boating	Rvrs: Tvl Rst Mill Soc		Acoustic > 1/2mi																				
	Cmnts:		Other Dscp:																				

Appendix I: Soundwatch Data Sheet Vessel Count/Whale Survey.

FAST/SPEED		
2.0	speed	vessel traveling over 7 knots w/in 400y/366m of whales, fast w/in 1/4 mile (440y/402m)
2.1	speed - approaching scene	vessel traveling over 7 knots w/in 400y/366m of whales, fast w/in 1/4 mile (440y/402m)
2.2	speed - departing scene	vessel traveling over 7 knots w/in 400y/366m of whales, fast w/in 1/4 mile (440y/402m)
IN PATH		
NEW 2011 LAWS		
3.1A	In path 200-400 yds	w/in 200y/183m corridor path in front of whales between 200-400y/183-366m ahead of whales
3.3	In path - cross	crossing path of whales, vessel traveling across expected path (200-400yds)whales predictable
APPROACH		
4.1	approach - head on	vessel approaching a whale/group head on w/in 200-400y/181-366m when whales are traveling in a relatively predictable pattern
4.2	approach - behind	vessel approaching/traveling behind a whale/group w/in 200-400y/181-366m when whales are traveling in a relatively predictable pattern
W/in 100 YARDS/M		
5.1	100y/91m - stopped	vessel stopped w/in 100y/91m of whales
5.2	100y/91m - under power	vessel under power w/in 100y/91m of whales
5.4	100y/91m - fishing	vessel fishing w/in 100y/91m of whales (did not attempt to move out of path of whales)
W/in 200 YARDS/M		
NEW 2011 LAWS		
6.1	200y/183m - stopped	vessel stopped w/in 200y/183m of whales
6.2	200y/183m - under power	vessel under power w/in 200y/183m of whales
6.4	200y/183m - fishing	vessel fishing w/in 200y/183m of whales (did not attempt to move out of path of whales)
7.0	INSHORE	vessel on the inshore side of whales, when whales are traveling close to shore (within 1/2 mile)
AREA RESTRICTION		
** Placeholder for WDFW Proposed New SLOW ZONE Guideline: NOT IN EFFECT as of June 2011**		
40.1	area restriction - SJV/NBZ 1	vessel w/in 1/4mile (440y/402m) of the SJL shoreline in the determined zone with whales present
40.2	area restriction - Lime Kiln	vessel w/in 1/2mile (880y/808m) of shoreline 1 mile radius of Lime Kiln Light with whales present
40.3	area restriction - NWR	vessel w/in 200y/183m of U.S. National Wildlife Refuge (NWR) site
40.4	area restriction - RRER	vessel w/in 100y/91m of any Race Rocks Ecological Reserve shoreline
40.6	area restriction - SJV/NBZ 2	vessel w/in 1/8mile (220y/201m) of ANY shoreline with whales present
40.7	area restriction -SJL Slow Zone	vessel > 7 knots w/in 1/2mile (880y/808m)SJV/NBZ with whales present. **WDFW PROPOSED New Guideline**
AIRCRAFT		
50.1	aircraft - low flying	aircraft flying lower than 1000feet (333y/305m)
50.2	aircraft - low circling	aircraft circling lower than 1000 feet (333y/305m)

Appendix J1: Soundwatch Marine Wildlife Guideline and Law Incident Codes for Vessel Incident Observations (Page 1).

60.1	kayaks - spread out	kayaks not rafted up (spread loosely) when whales are present
60.2	kayaks - 100y/91m	kayaks paddling w/in 100y/91m of whales
60.3	kayaks - launching	kayaks launching into area when whales are present
60.4	kayaks - offshore 1/4m	kayaks paddling farther than 1/4 mile (440y/402m) offshore when whales are present
60.5	kayaks- parked on headland	kayaks parked on headland with whales present
60.6	kayak - 200y/183m	kayaks paddling w/in 200y/183m of whales NEW 2011 LAW
BOWRIDING		
20.1	bowriding - erratic	vessel operating in erratic fashion while engaged in bowriding
20.2	bowriding - deliberate	vessel deliberately attempting to have animal(s) bow/stern ride i.e. REPEATED CIRCLING
HAULOUT		
30.0	haulout - speed	vessel over 7 knots w/in 200y/183m of active haulout
31.2	haulout - no navigation restriction	vessel w/in 100y/91m of an active haulout - no navigation restriction
32.0	haulout - disturbance	vessel w/in 400y/366m of active haulout causing disturbance
32.1	haulout - disturb deliberate	any deliberate disturbance of active haulout
32.2	haulout - disturb maintain	disturbance with no attempt to move away from haulout
32.3	haulout - disturb but moved	disturbance but moved away
9.0	INTERACTION	swimming, feeding, touching wildlife DEFINE INTERACTIONS
10	Other: Define	something out of the ordinary or site specific DEFINE OTHER
8.0	TIME LIMIT	vessel is staying longer than 30 minutes w/in 1/4 Mi (440y/402m) of whales- record if only a few whales

Appendix J2: Soundwatch Marine Wildlife Guideline and Law Incident Codes for Vessel Incident Observations (Page 2).

Species code	Species Name	Latin Name
oror (SR)	killer whale - southern resident	Orcinus orca
oror (T)	killer whale - transients	Orcinus orca
oror (NR)	killer whale - northern resident	Orcinus orca
esro	gray whale	Eschrichtius robustus
meno	humpback whale	Megaptera novaeangliae
baac	minke whale	Balaenoptera acutorostrata
bamu	fin whale	Balaenoptera musculus
phph	harbour porpoise	Phocoena phocoena
phda	Dall's porpoise	Phocoena dalli
taob	Pacific white-sided dolphin	Lagenorhynchus obliquidens
phvi	harbour seal	Phoca vitulina richardsi
euiu	Stellar's sea lion	Eumatopius jubatus
enlu	sea otter	Enhydra lutris
brma	marbled murrelet	Brachyramphus marmoratus
svan	ancient murrelet	Synthliboramphus antiquus
arhe	Pacific great blue heron	Ardea herodias fannini

Common Behaviors		
Spy Hop	Aerial scan	Breach
Half breach	Bellyflop	Pec slap
Pec wave	Inverted pec slap	Tail wave
Tail Slap	Inverted tail slap	Tail lift-headstand
Dorsal fin slap	Cartwheel	Chasing
Lunging/surging	Rolling at surface	High arch dives
Reverse	Push/lift/carry whale	Playing with log / object
Kelping	Fish seen	Vocalization heard
Bubble blowing	Synchronous surfacing	Mating
Penis seen-whale w/another	Penis seen-whale alone	Other-describe

Configuration	
Contact:	physical contact
Tight:	0 to 10m from another animal
Loose:	10 to 100m
Spread:	Greater than 100m

Orientation/Formation	
Flank:	side-to-side-to-side
Linear:	head-to-tail
Non-linear:	no particular orientation within group

Speed	
Motionless:	0 knots, "hanging", "logging"
Slow:	less than 2 knots, less smooth or "jerky" surfacing
Medium:	2-6 knots, slow roll, "normal"
Fast:	6-10 knots, fast roll
Porpoising:	greater than 10 knots, large portion of body out of water

Direction of travel	
N	North
NW	SouthWest
NE	NorthEast
E	East
S	South
SW	SouthWest
SE	SouthEast
W	West

Directionality	
Directional:	less than or equal to 90deg from previous direction of travel
Non-directional:	deviation of greater than 90deg from previous direction of travel

Appendix K1: Soundwatch Whale Survey & Behaviors Codes for Whale Scans (Page 1).

Species code	Species Name	Latin Name
oror (SR)	killer whale - southern resident	Orcinus orca
COOSE ALL THAT APPLY: J Jpartial K Kpartial L Lpartial List ID's if possible		
oror (T)	killer whale - transients	Orcinus orca
oror (NR)	killer whale - northern residents	Orcinus orca
esro	gray whale	Eschrichtius robustus
meno	humpback whale	Megaptera novaeangliae
baac	minke whale	Balaenoptera acutorostrata
phvi	harbour seal	Phoca vitulina richardsi

Common Behaviors/Overall Behavior State		
Spy Hop	Aerial scan	Breach
Half breach	Bellyflop	Pec slap
Pec wave	Inverted pec slap	Tail wave
Tail Slap	Inverted tail slap	Tail lift-headstand
Dorsal fin slap	Cartwheel	Chasing
Lunging/surging	Rolling at surface	High arch dives
Reverse	Push/lift/carry whale	Playing with log / object
Kelping	Fish seen	Vocalization heard
Bubble blowing	Synchronous surfacing	Mating
Penis seen-whale w/another	Penis seen-whale alone	Mating
Tail-Lob	Sharking	Other-describe:
Fast Non-Directional	Long-dives	

Sea State	Effect of Combined Wind And Currents on Sea State
0	Sea is mirror (flat)
1	ripples form with the appearance of scales, but without foam crests
2	small sea white crests appear glassy, no breaking
3	larger wavelets begin to break, glassy foam, scattered white caps
4	small waves predominant but fairly frequent white caps
5	moderate waves, distinctly elongated, many white horses, chance of spray
6	long waves with extensive white foam breaking crests begin to form, spray likely
7	sea heaves up, white foam breaking waves start to be blown in streaks
8+	WHY THE HELL ARE BOATS STILL OUT THERE?

Configuration (Overall Group)	
Contact:	physical contact
Tight:	0 to 10m from another animal
Loose:	10 to 100m
Spread:	Greater than 100m
Spread in Groups:	Distinct sprd groups

Formation (Overall Group)	
Flank:	side-to-side-to-side
Linear:	head-to-tail
Non-linear:	no particular orientation within group

Speed	
Motionless:	0 knots, "hanging", "logging"
Slow:	less than 2 knots, less smooth or "jerky" surfacing
Medium:	2-6 knots, slow roll, "normal"
Fast:	6-10 knots, fast roll
Porpoising:	greater than 10 knots, large portion of body out of water

Direction of travel	
Directionality	
Directional:	less than or equal to 90deg from previous direction of travel
Non-directional:	deviation of greater than 90deg from previous direction of travel
N, NW, NE, E, S, SW, SE, W	

Weather & Abbrev.	
sunny	S
sunny w/ partial clouds	SPC
overcast - high	OCH
overcast	OC
foggy	FOG
rain - light	RL
rain - heavy	RH

Appendix K2: Soundwatch Whale Survey & Behaviors Codes for Whale Scans (Page 2).

Beaufort Scale	Mariner's Description	Wind Speed	Effect of Wind at Sea
0	calm	0-1	like a mirror (flat)
1	light air	1-3	ripples form with the appearance of scales, but w/out foam crests
2	light breeze	4-6	small wavelets, crests appear glassy, no breaking
3	gentle breeze	7-10	larger wavelets begin to break, glassy foam, scattered white caps
4	moderate breeze	11-16	small waves predominant but fairly frequent white caps
5	fresh breeze	17-21	moderate waves, distinctly elongated, many white horses, chance of spray
6	strong breeze	22-27	long waves with extensive white foam breaking crests begin to form, spray likely
7	moderate gale	28-33	sea heaps up, white foam breaking waves start to be blown in streaks, beginning of spindrift
8	fresh gale	34-40	
9	strong gale	41-47	
10	white gale	48-55	
11	storm	56-66	
12	hurricane	above 66	

Vessel Code	Description	Visibility	Weather
CA	Commercial Aircraft	none	sunny
EA	Ecotour aircraft	poor	sunny w/ partial clouds
EC	Ecotour Canadian	fair	overcast - high
EK	Ecotour Kayak	good	overcast
EU	Ecotour US	excel	foggy
PA	Private Aircraft		rain - light
PK	Private Kayak/Paddle		rain - heavy
PM	Private Motor		
PS	Private Sail		
MC	Marine Charter		
MF	Marine Fishing		
ML	Marine Tug with log barge		
MM	Marine Monitoring		
MQ	Marine Cruiseship		
MW	Marine Tug with tow		
MX	Marine Shipping		
MY	Marine Ferry		
GA	Government aircraft		
GB	Government BC Parks		
GC	Government Coast Guard		
GD	Government DFO		
GL	Government military		
GN	Government NOAA		
GO	Government		
GW	Government WDFW		
RP	Permitted Research		

Location	
Prominent Place Name	
Direction:	
N, NE, NW, E, S, SE, SW, W	
Distance:	
1/4 Mi, 1/2 Mi, 1 Mi, 2mi, 2+Mi	

Vessel activity	
W	Whale Oriented
F	Fishing
T	Transiting
R	Research (whale oriented)
E	Enforcement
A	Acoustic Range
O	Other with description

Appendix L: Soundwatch Marine Conditions & Vessel Codes for Vessel Counts.

Watching Whales in the Wild

Watching whales in the wild is a thrilling experience. The Salish Sea has some of the best whale watching from shore! Remember that our presence has an effect on all wildlife and their habitat.

Southern Resident orcas were listed as an Endangered Species in 2005

The three main threats to Southern Resident orcas are:

- 1. Prey availability:** Chinook salmon in this region are listed as endangered or threatened. They make up 80% of the Southern Resident orcas' diet. Limited prey availability is a result of the decline in salmon populations.
- 2. Contaminants:** Toxins in the ecosystem such as flame retardants (PBOEs), industrial products (PCBs) and pesticides (DDT) negatively affect their health and reproduction.
- 3. Vessel disturbance:** Includes human-made noise and acoustic signatures of all types of vessels (motorized vessels, including recreational boats, commercial whale watching, commercial fishing, tug boats, cargo ships, and military vessels; and non-motorized vessels, including kayaks, sail boats and paddle boards).





Vessel Disturbance Research

Did you know approximately 500,000 people visit San Juan Island every year and many of them by boat? Researchers have been working hard to determine the effect vessels have on killer whales.

Here are a few things you can do on the water while boating to reduce your impact:

- Reduce your speed to less than 7 knots within 1/2 mile of wildlife to minimize wake and underwater acoustic disturbance, pass slowly without stopping and avoid abrupt course changes.
- Maintain a distance greater than the State and Federal laws and turn your engine off when possible.


Research has shown that with an increase in ambient noise, killer whales increase the volume of their echolocation clicks and their communication calls to one another. All types of vessels (including non-motorized) have the potential to affect the whales' health, change their behavior, and increase their stress levels.

Watching Whales on San Juan Island

Lime Kiln Point State Park, San Juan County Land Bank West Side Preserve and Cattle Point Lighthouse & Interpretive Area are the best places to see orcas from land on San Juan Island. The Whale Museum has a research station in the Lime Kiln Lighthouse which is open to visitors in the summer months. There is also a year-round listening station connected to a hydrophone that streams underwater sounds live. If orcas are in the area, you just might hear them! To listen to the hydrophone live from anywhere in the world, visit www.seasound.org.

Stellar Wildlife Spots!



Stewardship Practices:

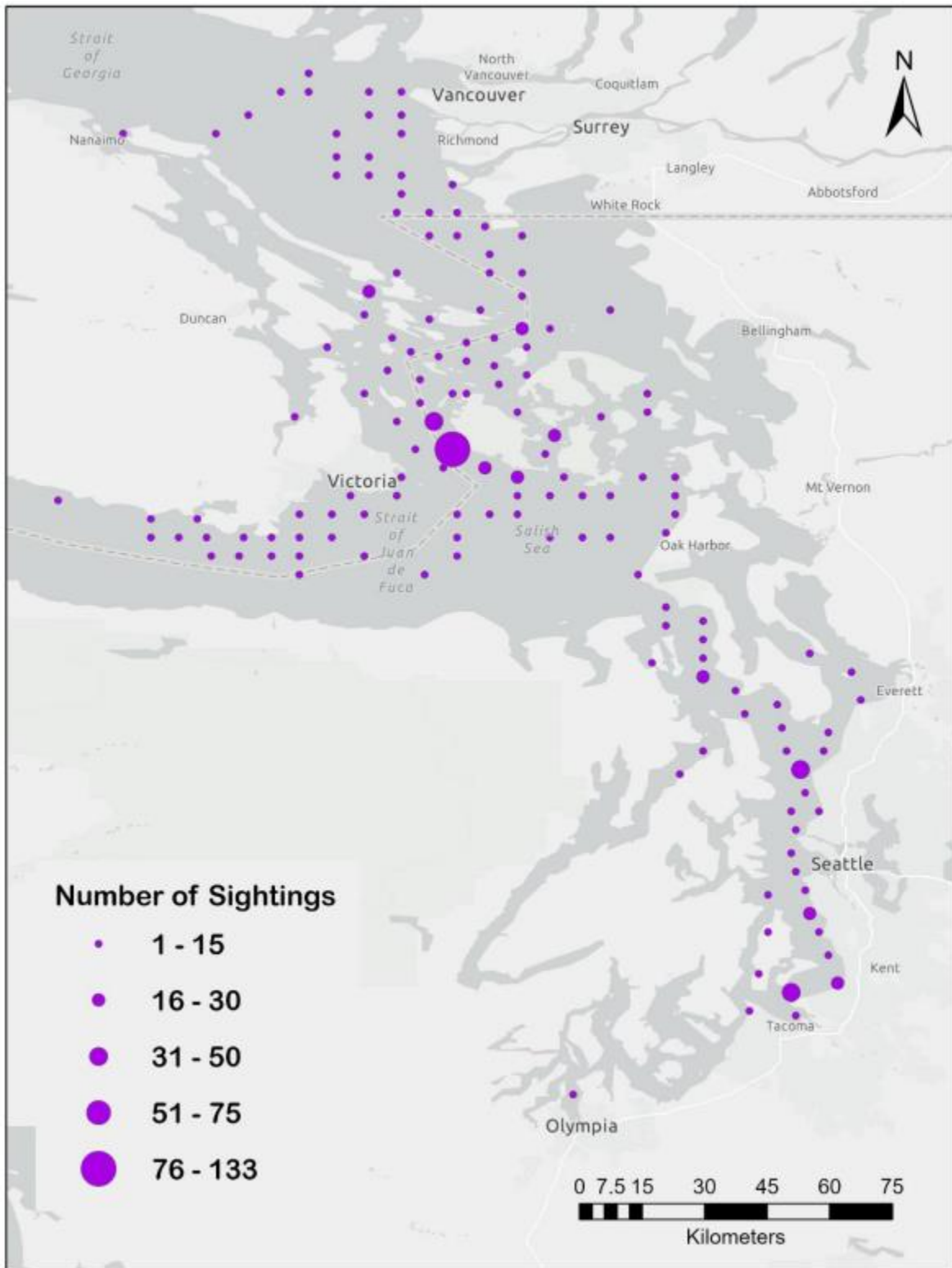
1. Follow Be Whale Wise Guidelines and Laws for Washington State and Canada. These apply to all types of vessels.
2. Drones (UAV): Is your drone registered? Did you know that it is illegal to fly a drone within a state or national park? The WA State killer whale law applies to drones.
3. Keep an eye on the weather! Sea conditions vary considerably. Did you check the tides and currents for the day? Do you have safety gear? Binoculars?

How you can help:

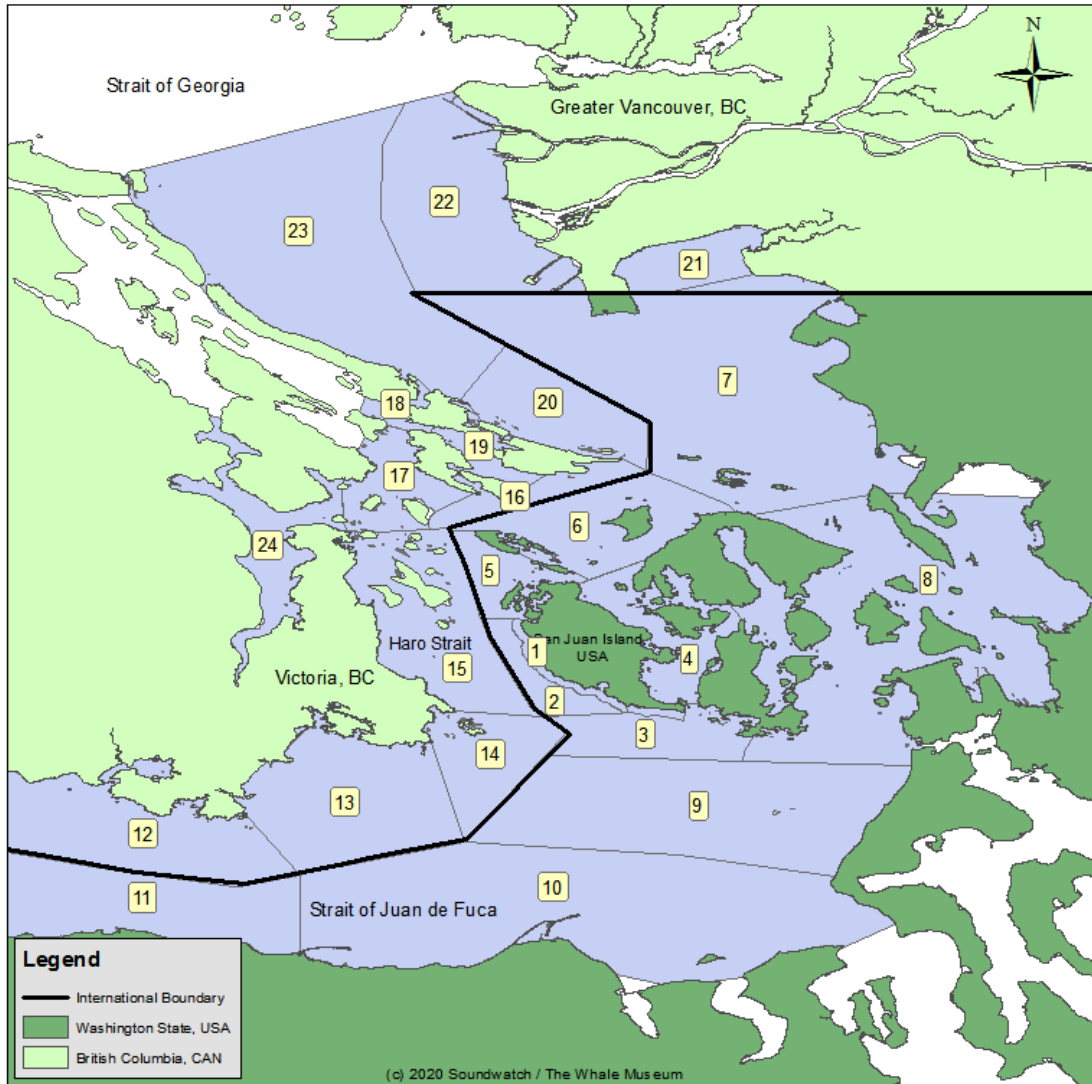
- Reduce, Reuse, Recycle and Compost!
- Unplug electronics and appliances. Turn off the lights!
- Decrease water usage (take shorter showers and turn off the faucet when brushing your teeth or washing dishes). Collect rainwater or plant a rain garden.
- Use environmentally-friendly cleaning products.
- Properly maintain your mode of transportation (vehicle, boat, motorcycle).
- Support killer whale conservation efforts!
- Report marine mammal sightings to The Whale Museum's Sightings Hotline (1-800-562-8832 or hotline@whalemuseum.org).
- Adopt an orca through The Whale Museum's Orca Adoption Program.
- Share your knowledge and help spread the word!

BeWhaleWise.org

Appendix M: The Whale Museum Watching Whales in the Wild Exhibit Hall Panels.



Appendix N: Map depicting the number of SRKW sightings reported by area in 2023. Each circle's size is proportional to the number of reports in 2022.



Appendix Q: Soundwatch study area numbered zones based on the TWM data quadrants and marine fishing zones for the US and Canada.