

2012 SOUNDWATCH PROGRAM ANNUAL CONTRACT REPORT

Project Title: Soundwatch Public Outreach/Boater Education Project.

Author/ Organization: Eric P. Eisenhardt, M.Sc.
Research Curator
The Whale Museum
P. O. Box 945
Friday Harbor, WA 98250
Email: eric@whalemuseum.org

Project Description and Analysis Prepared By:

Primary: Eric Eisenhardt (Soundwatch Coordinator and Research Curator)
Assisted By: Nicole Brandt (Soundwatch Seasonal Staff: data collection); Shannon Buckham and Breanna Walker (Kayak Monitoring Program Staff: data collection, data entry); Patrick Charapata, Kelly Mackarous, Jolyn Tan, Suzy Roebeling, Celsey Duritsa (Student Interns: data collection, data entry); and Dr. Jason Wood (Whale Museum Research Associate, GIS mapping), Patrick Charapata (Whale Museum Database Manager, data analysis, GIS mapping) and Elizabeth Seely (Conservation Canine, GIS mapping).

Contract Number: RA-133F-12-CQ-0057 Tasks 2.1.2 & 2.1.3

Contract Date: First year of multi-year contract: January 1, 2013 through December 31, 2013

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 2012 killer whale watching season and to provide a data update to the **AB133F-07-CN-0221 2011** 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.

Executive Summary:

The goal of the Soundwatch Public Outreach/Boater Education Project was to implement The Whale Museum's Soundwatch Boater Education Program during the 2012 whale watch season and present a data update to the 2011 report on whale watching trends in the Haro Strait region to inform future management strategies.

The objectives of this 2012 project were to 1) provide boater education services through public outreach and on-the-water stewardship activities and to collect data on vessel activities during the 2012 whale watching season; and to 2) conduct analysis on present whale watching data to provide an update to the 2011 Soundwatch Public Outreach/Boater Education Project report. In 2010 and 2011, supplementary tasks were added to the contract to conduct additional outreach to commercial and recreational kayakers launching from the San Juan Island County Park and to conduct shore-based monitoring of kayaking activities with Southern Resident Killer Whales within the voluntary no-go zone along the westside of San Juan Island. These tasks were repeated in 2012.

In May 2011, NOAA Fisheries implemented new vessel regulations around all killer whales in the inland waters of Washington State. The regulation included two elements: 1) a prohibition on approaching killer whales within 200 yards, and 2) a prohibition on positioning within 400 yards of the path of killer whales. In addition, Washington State updated the RCW on killer whales in 2012 to match the federal 200 yard & 400 yard distances. This report provides an evaluation of the effectiveness and/or compliance of the new regulations during the first two years of implementation.

Data used for this update reflects data that was collected during operation of the Soundwatch Boater Education Program in 2012, including new vessel incident definitions related to the new 2011 U.S. federal vessel regulations. This report depicts general trends in vessel based whale watching activities associated with Southern Resident Killer Whales (**SRKW**) in the Haro Strait Region of Washington State and British Columbia.

The goal of the Soundwatch Program is to reduce vessel disturbance to killer whales and other marine wildlife through educating boaters on guidelines/regulations as well as to provide systematic monitoring of vessel activities around cetaceans. Soundwatch promotes responsible marine stewardship through the development, distribution, implementation, annual evaluation and adjustment of guidelines/regulations for marine wildlife viewing by residents, visitors and commercial users. Soundwatch educates boaters on the current guidelines/regulations before they leave the shore; reinforces the learning experience where disturbances take place; and provides a scientific platform to monitor vessel activities to evaluate the regulations and voluntary guidelines as well as the need to develop additional marine wildlife regulations and/or guidelines.

2012 data collection consists of 1) counts of vessels near wildlife by type, location and activity; 2) wildlife/whale identification, location, travel direction and behavior states; 3) vessel contact information; 4) commercial and private vessel compliance with voluntary guidelines and/or regulations; 5) vessel behaviors in designated Marine Protection Areas (**MPAs**); and 6) counts of vessels launching from the San Juan Island County Park. Whale sightings, whale behaviors and MPA monitoring results are not covered in this report. All Soundwatch data on marine wildlife/whale identification, location, travel direction and selected behaviors is incorporated into The Whale Museum's Whale long-term Sightings Network database. Soundwatch data specific to SRKWs is compiled with other sightings data into the Museum's annual Orca Master NOAA Contract Reports. All Soundwatch killer whale sightings data is available through The Whale Museum's annual Whale Sightings and Orca Master data sets or upon request.

Included as an additional appendix to this report are compact discs (CDs) of the Soundwatch Program 2012 data sets in MS Excel. This update report on disposition of funds from Contract Number **RA-133F-12-CQ-0057, Tasks 2.1.2 & 2.1.3**, entitled Soundwatch Public Outreach/Boater Education Project fulfills reporting requirements under the NOAA Administrative Terms and Conditions of the contract.

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 2012 whale watching season and provide data analysis updates to the 2011 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 2012 whale watch season;
- 2) Collect data on vessel activities during the 2012 whale watch season, including kayaker activities along the westside of San Juan Island and activities relative to the 2011 U.S. federal vessel regulations;
- 3) Conduct analysis on current whale watch activities including continued evaluation of 2011 U.S. federal vessel regulations;
- 4) Provide 2012 data updates to the 2011 Soundwatch Public Outreach/Boater Education Project Report.

Project Results:

The contract listed several deliverables including:

Task 2.1.2: Conduct on-the-water Activities July 1, 2011-September 30, 2012.

- 2.1.2a Provide the vessel and operational staff to conduct the on-the-water activities beginning July 1, 2012-September 30, 2012.
- 2.1.2b Contact boaters engaged in whale watching activities to provide information on regional Be Whale Wise marine wildlife guidelines, marine mammal regulations, and the Kayakers Code of Conduct; provide training to kayak guides and coordinate outreach with private kayakers at the San Juan Island County Park.
- 2.1.2c Provide information on observations of possible violations of the marine mammal regulations to the NMFS Northwest Regional Office for Law Enforcement and/or Washington Fish and Wildlife Enforcement in support of possible investigation or enforcement action.
- 2.1.2d Provide summaries of outreach activities including dates when on-the-water and shore-based activities were conducted and hours of operation with monthly invoices submitted for payment.

Task 2.1.3: Conduct data analysis and report on present and historical compliance with whale watch guidelines and regulations.

- 2.1.3a Collect data on vessel compliance for the 2012 whale watch season to assess effectiveness of the Be Whale Wise Guidelines, the Kayakers Code of Conduct and 2011 U.S. federal regulations; conduct shore-based monitoring of kayaking activities with Southern Resident Killer Whales within the NOAA proposed No-Go Zone* along the westside of San Juan Island. (*This management tool was proposed in 2009, but not included in the final 2011 regulations.)
- 2.1.3b Conduct analysis and provide an update to the 2011 report on vessel activities and vessel compliance under prior and new regional guidelines and regulations.
- 2.1.3c Provide a comparative report on past and present guideline/regulation compliance including information on vessels of different types and activities.

Task 2.1.2: Conduct On-the-water Activities Summer Season 2012.

2.1.2a On-the-water and Shore-based Program Activities.

Soundwatch On-the-Water Vessel Patrol Effort:

The Soundwatch Program reduces vessel disturbance to killer whales and other marine wildlife through on-the-water educational and monitoring patrols. Soundwatch paid staff and volunteer crews educate boaters on the current guidelines and regulations on-the-water where wildlife disturbances are likely to take place. Soundwatch crews also monitor vessel activities near whales to characterize regional marine wildlife viewing trends in order to adjust or develop additional marine wildlife guidelines and/or regulations and to evaluate the effectiveness of newly implemented guidelines or regulations.

During the summer months of 2012 (May-September), Soundwatch operated vessel patrols to educate and monitor boaters an average of over four days per week. Soundwatch staff and volunteer crews spent a total of 89 days on the water between May 2, 2012 and September 30, 2012, totaling over 330 hours. A total of 86 days were dedicated to outreach and monitoring whale watching activities. Whales were present on 66 of those days for 306 hours of monitoring (Figure 1). Over the summer seasons (May-September) since 1998, Soundwatch has totaled more than 9,094 observational and outreach hours with vessels and whales in the Haro Strait region (Figure 2). In 2012, 613 Vessel Count/Whale surveys were conducted with a variety of cetacean species, the majority being Southern Resident Killer Whales, in the Haro Strait Region of Washington State, U.S., and Southern Vancouver Island, British Columbia, Canada (Figure 3).

Figure 1: Distribution of Soundwatch On-the-Water Activities 2012.

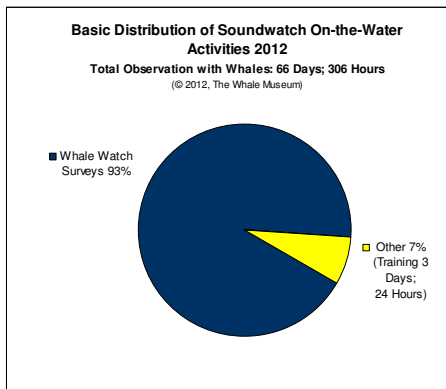


Figure 2: Distribution of Soundwatch On-the-Water Activities 1998-2012.

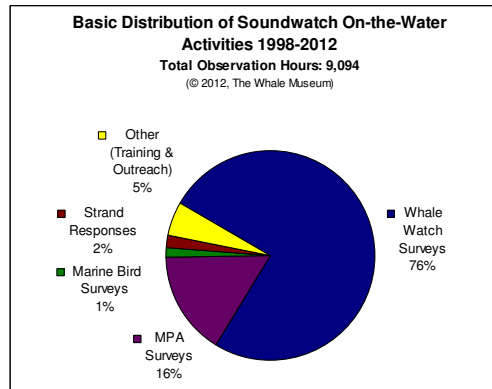
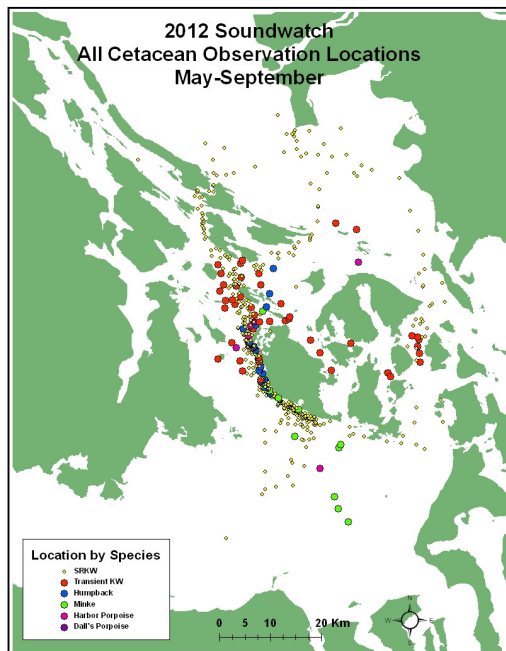


Figure 3: Soundwatch 2012, 613 Vessel Counts & Whale Surveys by Location and Species.



In addition to paid staff, the Soundwatch program relies on the help of many dedicated interns and volunteers. In 2012, 42 regular volunteers, including 5 academic interns, provided over 1,718 hours of volunteer time participating on Soundwatch vessel patrols, distributing educational materials and assisting with data entry and photo archiving. In 2012, volunteers assisted with 1,332 hours of vessel patrols and an additional 386 hours of shore-based outreach education, data entry and assistance with data analysis. In 2012, paid program staffing included a full time coordinator responsible for the implementation and administration of the Soundwatch vessel program, along with one seasonal vessel driver/educator who also served as a part-time assistant coordinator; and the shore-based kayak monitoring programs (along with two seasonal part-time researchers).

Kayak Education and Leadership Program (KELP) Shore-based Outreach Effort at the San Juan Island County Park

The Soundwatch Kayak Education and Leadership Program (**KELP**) targets outreach to recreational and commercial kayakers. In 2010, Soundwatch was contracted to assist with planning and implementation of a new 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. In 2011, the San Juan County Park administered the permit system, implemented the outreach program and a self-reporting data collection system designed by Soundwatch based on KELP. In 2012, KELP again provided the content and materials for an updated Vessel Code of Conduct training, an updated Kayakers Code of Conduct brochure, posters and signage for the park and conducted guide trainings for commercial kayaker operators. The 2012 updates to the Kayakers Code of Conduct were based on the U.S. federal vessel regulations and feedback from the 2011 KELP educators, the San Juan Island Kayakers Association (**SJKA**) and Soundwatch 2010-11 kayak monitoring trends. The intent of the training and permit program is to better educate all vessel operators launching from the park on the laws and best practice guidelines for operating around marine wildlife, focusing on endangered Southern Resident Killer Whales. In 2012, the Vessel Code of Conduct Training continued to be done as an automated slide show conducted as needed by park staff from 8 am to 8 pm, daily. Data collection on vessel launching from the park was done through a boater self-reporting system and was administered by the San Jan County Park staff, with assistance from KELP staff. All data was processed and analyzed by The Whale Museum's Soundwatch/KELP program staff.

2.1.2b Contact boaters engaged in whale watching activities to provide information on regional Be Whale Wise Guidelines for Boaters, Paddlers and Viewers; marine mammal regulations, Kayakers Code of Conduct and whale watch etiquette.

Soundwatch On-the-water Outreach to Vessel Operators

When Soundwatch crews encounter vessels traveling in known whale or other wildlife areas, they politely contact the boater and provide marine wildlife viewing guidelines, regulations and localized Marine Protected Area (**MPA**) information. In 2012, Soundwatch distributed the 2011 updated Be Whale Wise Marine Wildlife Guidelines for Boaters, Paddlers and Viewers (Appendix A & A1), the 2011 U.S. Federal Vessel Regulations for Killer Whales (Appendix B & B1), and a Soundwatch Boater Education Program brochure entitled Whale Watching in the Salish Sea with localized MPA information and maps including the San Juan County Marine Stewardship Area, the San Juan National Wildlife Refuge and the Haro Strait Voluntary No Motor Boat Zones for Whales (Appendix C). When the Soundwatch patrol vessel crew encounters kayakers that are easily approached, educators highlight the special concerns for kayakers paddling around marine wildlife and include the updated 2011 Kayakers Code of Conduct (Appendix D) brochure in the materials given out.

Plotting annual locations of Soundwatch vessel contacts can be used as an overall indicator of effort and vessel and whale use patterns in the designated summer core habitat for SRKW (Figures 4 and 5). The busiest vessel contact areas by Soundwatch in 2012 tended to be within a half mile near shore along the westside of San Juan Island (Zone 1- the NOAA proposed vessel restriction area), outside of a half mile along the westside of San Juan Island and north into Haro Strait (Zones 2, and 5), and in Southern Rosario Strait (Zone 8) (Figures 4 and 5).

Figure 4: 2012 Soundwatch Vessel Contacts By Monthly Location Map.

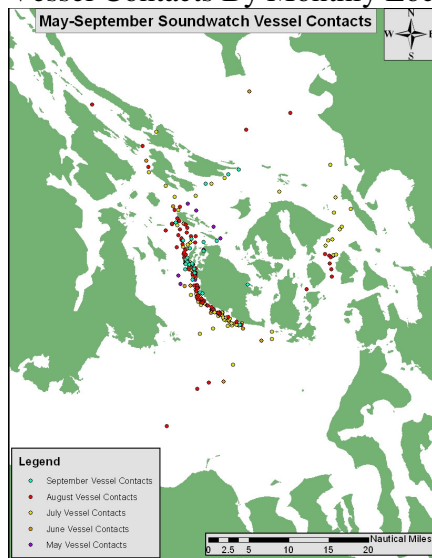


Figure 5: 2012 Soundwatch Vessel Contacts By Numbered Zone Map.

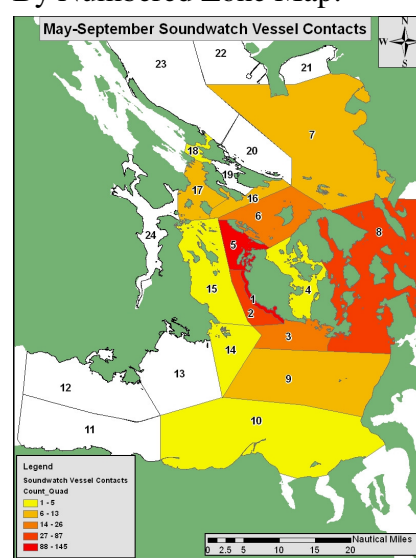


Figure 6: Soundwatch Private Boat Monthly Contacts 2001-2012, May-September.

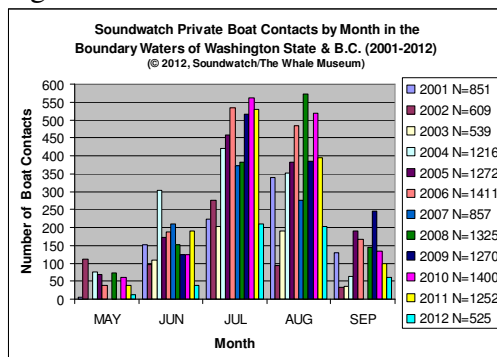


Figure 7: Soundwatch Private Boat Monthly Contacts 2012, May-September.

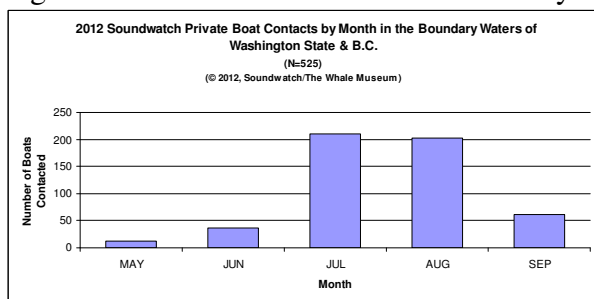


Figure 8: Soundwatch Number of People Contacted per Vessel 2001-2012, May-September.

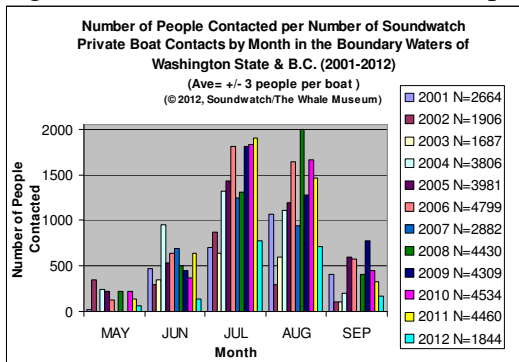
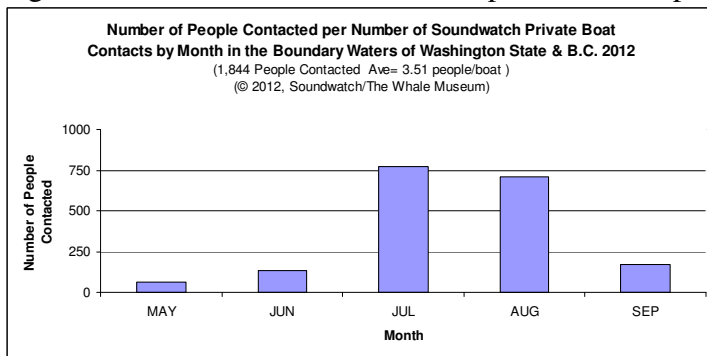


Figure 9: Soundwatch Number of People Contacted per Vessel 2012, May-September.



During the 2012 seasonal patrols on the water, Soundwatch delivered Be Whale Wise, U.S. federal vessel regulations for killer whales, and localized information on MPAs to 525 vessels reaching 1,844 recreational boaters (Figures 6-10). The average number of persons per vessel contacted by Soundwatch in 2012 was 3.51 (Figure 9). This average is consistent with previous seasons, 2001-2011, at 3.3 persons per vessel (Figure 8). The lower annual levels of contacts for 2012 (vessels and people) than previous years are due to reduced days on-the-water (Figures 6 and 8).

Soundwatch looks at previous year's contact data as well as vessel counts to assist with future program planning to target busy times for the following season. Soundwatch shares this information to effectively plan collaboration efforts with other monitoring programs and government enforcement agencies. Consistently the busiest months for recreational boaters have been in July and August (Figures 6-9). Peak hours tend to be between 1100 hours and 1600 hours with higher overall numbers in the afternoon. Soundwatch private vessel contacts 2001-2012 reflect this overall trend (Figures 10-12).

Figure 10: Soundwatch Daily Distribution of Private Boat Contacts 2001-2012, May-September.

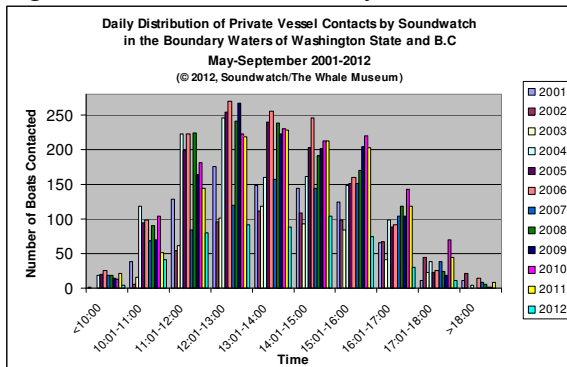


Figure 11: Soundwatch Daily Distribution of Private Boat Contacts 2012, May-September.

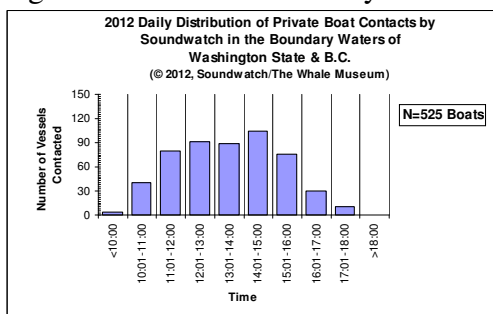
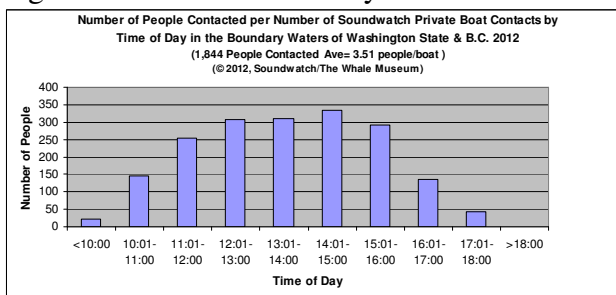


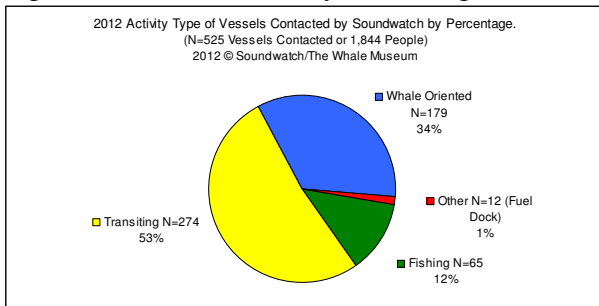
Figure 12: Soundwatch Daily Distribution of People Contacted per Vessel Contact 2012, May-September.



Through continuous Soundwatch monitoring, new vessels arriving on scene are observed and contacted, as are vessels that Soundwatch already contacted but require some kind of follow-up. Every time a vessel is contacted, specific contact information is recorded on a Soundwatch Vessel Contact data sheet (Appendix E). Soundwatch crews record the date, time, location, type of vessel contacted, the vessel activity, vessel registration, name, description, port of origin, and number of passengers on board. Soundwatch crews then determine a series of vessel operator attributes using standardized criteria while the Soundwatch driver informs them about the marine wildlife rules. Vessel operator attributes that Soundwatch records include: *why the vessel was contacted; whether they took the information and, if not, why; were they aware of the information; what was their reaction to Soundwatch; whether this vessel been contacted by Soundwatch before.* Additionally, Soundwatch crews record if Soundwatch re-contacted this same vessel again on the same day; if there was a Soundwatch observed vessel incident recorded with this vessel before or after contact, if so the time of the incident is recorded; if there were photos of this vessel, and any other relevant comments.

In 2012, 34% of vessels contacted by Soundwatch were whale oriented (already watching whales). Over half of vessels contacted were transiting in areas with whales (53%) and vessels engaged in fishing comprised 12% of contacted vessels (Figure 13). Soundwatch often does not go inshore or amongst whales to contact fishing vessels so as not to get too close or inshore of whales, or get tangled up in fishing gear while vessels are trolling, etc. Therefore, Soundwatch does not contact many of the vessels near whales that are engaged in fishing for safety and logistical reasons. In September 2012, Soundwatch increased efforts to contact recreational fishing vessels, more than doubling the percentage of contacts for fishermen. This focused effort was funded by NOAA and resulted in a two-fold increase in fishermen contacts (previous years were ~6%).

Figure 13: Vessel Activity Percentages of Private Boaters Contacted by Soundwatch 2012, May-September.



Often (47% of the time) vessels were contacted by Soundwatch to *Provide Education* while they were already engaged in whale watching activities, followed by 32% being contacted to *Prevent a Likely Incident* by intercepting their transit into areas with whales, with 21% of vessels being contacted for *Follow-up from an Incident* (Figure 14). Often times vessels with recorded vessel incidents occur inshore of whales with the vessel traveling at high speeds, making it unfeasible for the Soundwatch crew to pursue making contact with the vessel. When vessel operators are contacted, 30% respond enthusiastically (*Excellent*) about the contact and program, 47% are recorded as having a *Good* overall response, 17% a *Fair* or neutral response and a minority, 5%, of vessel operators have a *Poor* or negative 1% (*Bad*) response when contacted by the Soundwatch vessel crew (Figure 15).

Figure 14: Percentage of Primary Reasons Private Boaters were Contacted by Soundwatch 2012, May-September.

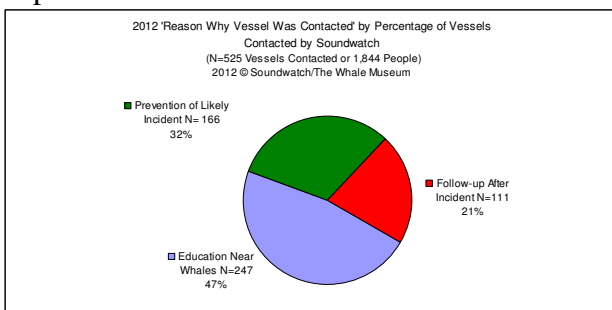
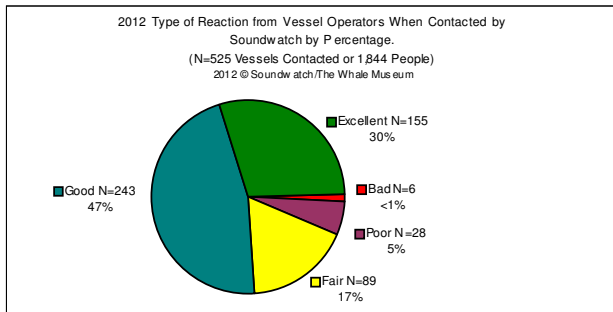


Figure 15: Percentage of Reaction Types from Private Boaters Contacted by Soundwatch 2012, May-September.



In 2012, only 5% of contacted vessels had passengers who responded that they had previously been contacted by Soundwatch that summer, which suggests that 95% of vessel contacts were new for the season (Figure 16). In prior years, the proportions of previous contacts were greater, for example 11% in 2011. A possible explanation is that in 2012 previous contact was defined as occurring only during the 2012 season—not at anytime in the past as in prior years. About one third of contacted vessels (34%) said they were aware of the information. However, just under half the time (45%), people on board did not take the educational materials provided. The other 55% of contacted boaters *Did* take the information, with 20% responding that they were *Aware* of the information and 80% indicating that they were *Unaware* (Figure 17). Of the 238 vessels (45%) who *Did Not* take the educational materials provided, 51% responded that they ‘*Already Had It*’ and were ‘*Aware*’ of the rules; 18% of the time the boaters did not take the materials because they were registered in Canada and/or had Canadian clearance status, of those, 48% responded that they were *Aware*; 52% that were *Unaware*; 11% who did not take the information had fishing gear or sailing rigging that made it too difficult to hand over the information, of those, 31% responded that they were *Aware*, 69% that they were *Unaware*; 10% of the time the weather conditions prevented a hand-off or there was not enough time (i.e., whales were fast approaching or the vessel did not slow down for Soundwatch to hand off information), in those cases, 38% responded they were *Aware* of the info and 62% were *Unaware*; the remaining 11% of the people contacted who did not take the information refused to take it from the Soundwatch crew who offered, with 40% responding they were already *Aware* and 60% who were *Unaware* but did not want the information (Figure 18). It should be noted that even though a boater did not take the information (for whatever reason), information on whales and rules was always provided verbally, in context to the current situation. In some cases, those boaters who did not take the information were also contacted via VHF marine radio and were given the information in more detail.

Of the 525 vessels contacted by Soundwatch in 2012, 78% (102) of the vessels had one or more incidents recorded before the Soundwatch vessel could contact them and 22% (28) of the vessels had one or more incidents recorded after the Soundwatch crew had contacted them (Figure 19).

Figure 16: Percentage of Previously Contacted Private Vessel Operators 2012, May-September.

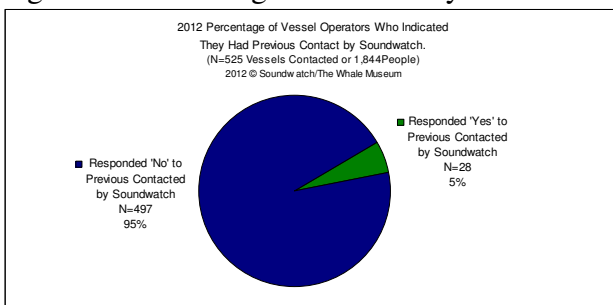


Figure 17: Percentage of Contacted Private Vessel Operators Who Did Not Take Soundwatch Information 2012, May-September.

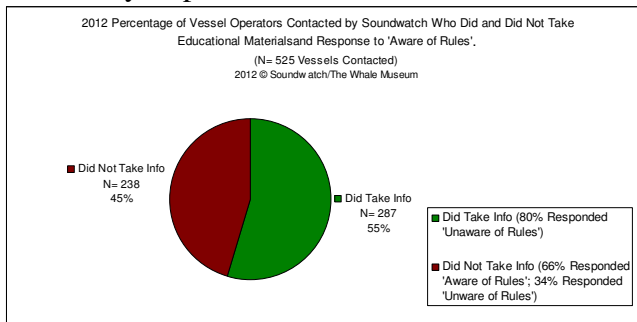


Figure 18: Percentage of Reasons Why Private Vessel Operators Did Not Take Soundwatch Information 2012, May-September.

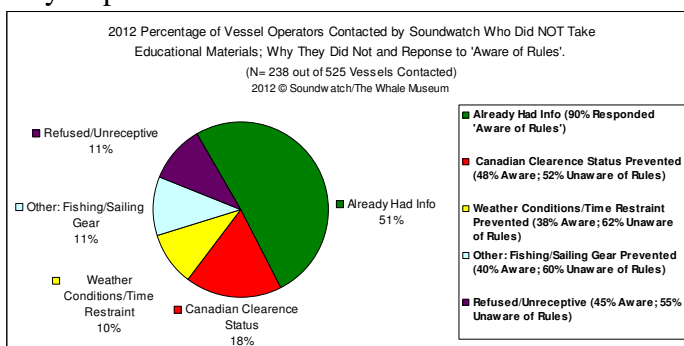
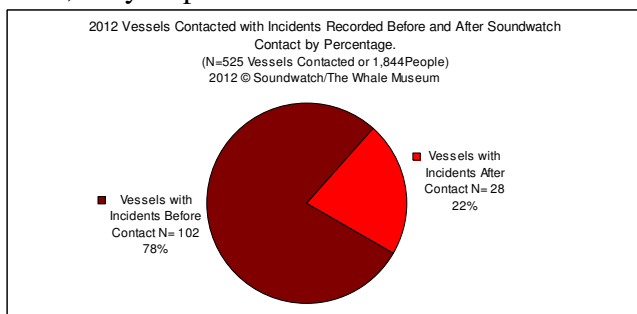


Figure 19: Percentage of Private Vessels with Recorded Vessel Incidents Before and After Soundwatch Contact 2012, May-September.



Soundwatch Shore-based Outreach

In addition to the on-the-water outreach, over 3,000 of the 2011 Be Whale Wise brochures and 200 posters as well as 5,000 new Federal Rules rack cards and 250 posters were distributed in 2012 to regional federal, state, county and private parks; boating facilities; boating organizations, and at regional festivals. Brochures and posters were also made available at regional conferences and marine wildlife related workshops. The Whale Museum displayed Be Whale Wise, new Federal Rules for killer whales and Responsible Whale Watching exhibits and made all brochures available to over 25,000 museum visitors and education program participants. In addition, materials were given to over 2,500 Whale Museum members and adopters through The Whale Museum's Orca Adoption Program.

In the spring of 2012, Soundwatch staff mailed educational materials including the new Be Whale Wise

and Federal Rules brochures and posters to marinas and boating facilities who responded positively to previous comprehensive mailings to all boating facilities in the inland waters of the state. Over 150 state parks and boating facilities throughout the San Juan Islands, from Whidbey Island and La Conner north to Blaine, and out the Olympic peninsula to Port Angeles and Sequim, received guideline and law materials. Soundwatch staff again worked with Washington State Ferries (WSF) to obtain approval for posting Be Whale Wise and State Law materials on all WSF ferries and waiting rooms in the system. Funding was not available to include a full-page advertisement for the new 2011 Federal Vessel Regulations for Killer Whales and an updated Be Whale Wise message in the 2012-2013 Washington State Sport Fishing Rules Pamphlet. However, the small ad was again included in the Marine Area 7 (San Juan) section with a web site address directing people to the Washington Department of Fish and NOAA Wildlife Killer Whale pages.

Soundwatch Stewardship Trainings were conducted for new and returning Soundwatch and KELP volunteers and interns, and three times for San Juan Island commercial kayak guides. Additional Marine Wildlife Viewing presentations were given to undergraduate students enrolled in the Spring session of the Beam Reach Sustainability and Killer Whale Acoustics 8- week field course, the Port of Friday Harbor, and at the Deer Harbor Yacht Rendezvous.

In 2012, Soundwatch did not provide summary feedback reports to member companies of the Pacific Whale Watch Operators Association (PWWA) as was done in 2011 (one Mid Season Summary from mid-May through mid-July and an End of Season Summary mid-May through the end of September). A copy of this 2012 report will be presented to PWWA in 2013. In previous years (1996-2010) Soundwatch provided feedback reports (weekly, monthly and annual vessel incident summaries) detailing Soundwatch-observed specifically identified commercial company vessel incident information to the whale watch industry and generic (no vessel identification, vessel type included) summary to the regional law enforcement agencies. Changes were made to the Soundwatch feedback reporting process in 2011 based in part on feedback from the whale watch industry's concerns about how this potentially sensitive information may be used in a legal context relating to new vessel regulations and from concern expressed by the NOAA Northwest Regional Director that Soundwatch not take on the role of law enforcement. Consequently, beginning in 2011 Soundwatch incorporated new data collection protocols to not record specific vessel identification for any vessel (commercial or private) observed by Soundwatch staff to be committing a vessel incident.

KELP Program Shore-based Outreach to Kayakers and Boat Launch Users at the San Juan County Park.

The Soundwatch Kayak Education and Leadership Program (**KELP**) targets outreach to recreational and commercial kayakers to better educate kayakers on the laws and best practice guidelines for marine wildlife, focusing on endangered Southern Resident Killer Whales. In 2012, the San Juan County Park again administered the permit system and continued an outreach program and a self-reporting data collection system designed by the KELP program in 2010. In 2012, KELP provided the content and materials for an updated Vessel Code of Conduct training, an updated Kayakers Code of Conduct brochure, posters and signage for the park and conducted guide trainings for commercial kayaker operators. The 2012 updates to the Kayakers Code of Conduct were based on feedback from the 2011 KELP educators, the San Juan Island Kayakers Association and Soundwatch 2011 kayak monitoring trends. In 2012, as in 2011, the Vessel Code of Conduct Training was done as an automated slide show conducted as needed by park staff from 8 am to 8 pm, daily. More information on the KELP program and on the San Juan County Park Vessel Launch Permit program can be found at <http://www.whalemuseum.org/programs/soundwatch/soundwatch.html>

All recreational vessel operators, regardless of vessel type, were required to obtain a vessel launch permit (Appendix H) between May 26 and September 3, 2012. Attendance of the Vessel Code of Conduct Training was needed to obtain a permit. This 13-minute, automated slide show presentation was given, on demand, by park staff daily between 8 am and 8 pm. Recreational users were given a colored tag to be placed on the bow of their vessel to identify having received their permit. The tags were color coded: pink for day use, orange for registered campers and green for seasonal permits. The associated permit fees were \$7 per vessel for day use, \$7 per vessel and good for the duration of one's stay for registered campers and \$35 per vessel for seasonal permits. Permit fees were waived for individuals with a San Juan County driver's license and/or voter registration card, which was meant to demonstrate their primary residency, was local to the county. Individuals were given educational materials including the new Be Whale Wise guidelines (Appendix A), new federal vessel laws for Killer Whales (Appendix B), the Whale Watching in the Salish Sea brochure (Appendix C), which includes a map of the San Juan County Marine Stewardship Area, and the Kayaker Code of Conduct (Appendix D). Permit holders were also asked to sign their vessel out prior to each launch using a Recreational Launch Sign-Out Sheet (Appendix F). The purpose of the sign-out sheet was to gain needed data on the recreational use of County Park boat launch facilities.

San Juan County Park Commercial Vessel Launch Permit Procedure

Commercial kayak tour companies launching and/or landing at County Park currently operate under two types of permits: use permits, with an associated yearly fee; and launch permits, with a per guest fee. In 2012, as in 2011, the commercial companies had to comply with additional launch permit terms in order to utilize County Park vessel launch facilities. All commercial companies were required to identify all their company specific kayaks with a disc identifying the company at least 5" in diameter and placed within 2" of the deck/hull seam and within 12" of the bow. The purpose was to distinguish commercial groups from private kayakers, as well as to identify individual companies. All guides and guests were also required to attend the Vessel Code of Conduct Training. There were two ways to comply with this term. Companies could opt to have guides and guests attend the Vessel Code of Conduct Training at the Park prior to launching. Alternatively, guides could attend a Kayaker Code of Conduct Guide Training. Attendance of the guide training resulted in being placed on the Park's Approved Guide List. All guides were required to use a Commercial Launch Sign-Out/Sign-In Sheet (Appendix G) prior to their launch and sign in upon return. This provided the Park with accurate numbers of guests, from which they billed the company for their per guest vessel permit fee. In 2012 there were 498 recreational vessel launch permits issued to 885 people associated with the issued permits for a total of 885 people having attended a Vessel Code of Conduct Training as reported by park staff (Table 1).

Table 1: Number of Recreational Boater Permits issued at the San Juan County Park in 2012.

RECREATIONAL Boaters	Vessel Launch Permits Issued	Individuals Trained for Launch Permit
May	18	47
June	131	207
July	172	367
August	156	232
September	17	25
TOTAL	498	885

The numbers of permits issued was lower than in both 2010 and 2011 (517 vs. 498 launch permits and

975 vs. 885 people trained), and may in part reflect a continued avoidance of the County Park and more kayaks launching from the Land Bank property at Deadman's Bay (adjacent to Lime Kiln Point State Park). Unfortunately, there is no park launch data previous to 2010 to compare beyond the 3 years. Anecdotally, the park staff commented that there seemed to be fewer recreational vessels launched each of the past 3 summers than were witnessed over previous years. Park staff speculate as to whether the permit system has turned away kayakers, or if other reasons such as windy and cold weather were just not good for kayaking.

Figure 20: San Juan County Park Vessel Launch Permit Percentages by Permit Type.

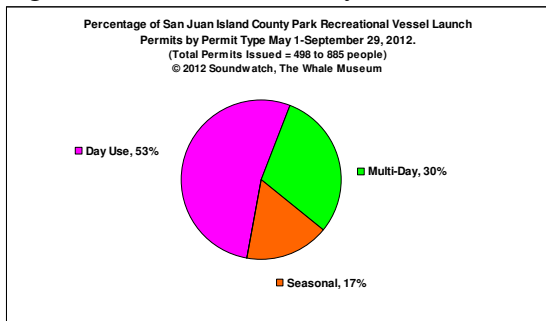


Figure 21: San Juan County Park Vessel Launch Permit Percentages by Permit Type with Fees Collected VS. Not Collected.

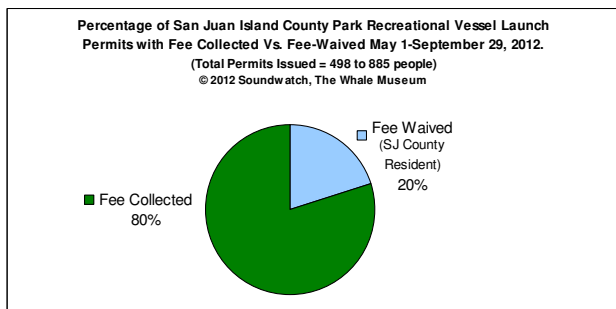
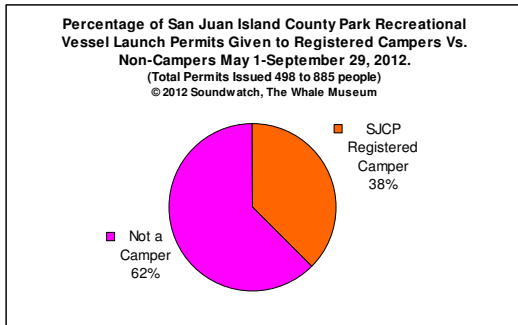
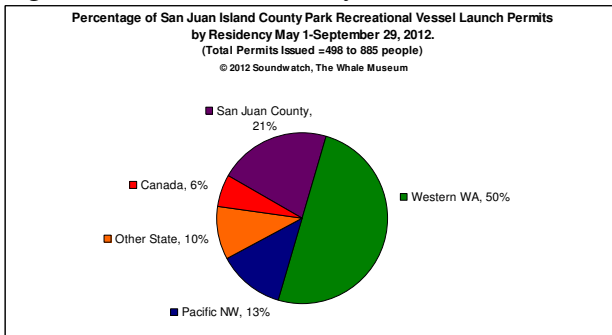


Figure 22: San Juan County Park Vessel Launch Permit Percentages by Permit by Campers VS. Non-Campers.



Three recreational permit types are available: day use, multi-day registered camper and seasonal. The majority of permits, 53%, were issued to day use, while 30% were multi-day registered campers and 17% were seasonal permits (Figure 20). Over half, 62%, of the permits went to the non-camper demographic (Figures 20, 22). Nearly all of seasonal permits were issued to San Juan County residents, whose per vessel fee was waived (Figures 20 and 21). The remainder of the public, 80%, were from outside San Juan County and paid fees for using County Park launch facilities. The majority of the public, 50%, utilizing the park launch facilities between May and September 2012, reside within Western Washington (Figure 23). Many others, 13%, were located with the Pacific Northwest region, which we defined as: Washington, Oregon and Idaho. A total of 21% were identified as San Juan County residents and 6% resided in Canada.

Figure 23: San Juan County Park Vessel Launch Permit Percentages by Permit by Residency.



The predominant vessel type permitted at County Park in 2012 were kayaks totaling 93% of all permits issued (Figure 24). The remaining 7% of vessel types included small motor boats at 5% and a variety of other human-powered craft.

Figure 24: San Juan County Park Vessel Launch Permit Percentages by Permit by Vessel Type.

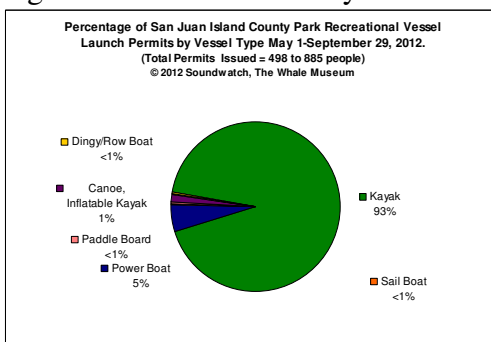


Figure 25: Total Permitted Vessels Launched From The San Juan County Park.

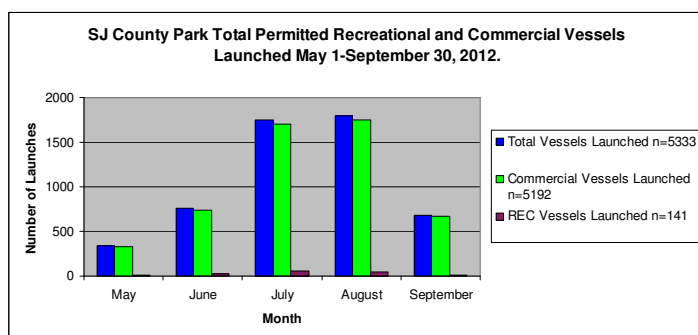


Table 2: All San Juan County Park Permitted Vessel Launch Numbers in 2012.

Permitted Launches	Commercial Trips	Commercial Vessels Launched	REC Trips	REC Vessels Launched	Total Trips	Total Vessels Launched
May	100	332	6	8	106	340
June	183	735	13	28	196	763
July	317	1701	25	53	342	1754
August	343	1750	17	42	360	1792
September	157	674	7	10	164	684
TOTAL	1100	5192	68	141	1168	5333

A total of 1,168 trips were documented at San Juan County Park during the 2012 season (Table 2). Of those, 1,100 were commercial kayak company trips which had 5,192 associated vessels; 68 recreational trips took place with 141 vessels. A grand total of 5,333 vessels were recorded as launched between May and September with July and August having the greatest number of trips and launched vessels (Figure 25). When trips and associated Vessel Code of Conduct training log data confirms that often two people comprised a group with either a double kayak or two single kayaks being launched for a given recreational trip.

Kayaks were the main recreational vessel type launched with a total of 126 out of 141 total launches (Table 3). As usual, July and August saw spikes in motorized craft. July was the busiest month for kayak launches with 44 recorded. Note launch numbers are self-reported through Recreational Sign Out sheets that the public was responsible for completing; it is likely there were launches that took place that were not documented, thus these launch figures are probably underestimated. With recreational vessel self-reporting, 219 people were recorded as launching from 141 vessels.

Table 3: All San Juan County Park Permitted Recreational Vessel Launch Numbers by Vessel Type in 2012.

RECREATIONAL	Total Trips	Total Vessels Launched	Total People	Kayak	Motor / Sail Boat
May	6	8	14	8	0
June	13	28	46	27	1
July	25	53	92	44	9
August	17	42	51	41	1
September	7	10	16	6	4
TOTAL	68	141	219	126	15

Table 4: All San Juan County Park Permitted Commercial Vessel Launch Numbers* (*Signed-out 2012 commercial launches were kayaks and the commercial launch permit ran May-September).

COMMERCIAL	Total Trips	Total Vessels Launched	Total Guides	Total Guests	Total People
May	100	332	117	400	517
June	183	735	228	962	1190
July	317	1701	479	2329	2808
August	343	1750	500	2393	2893
September	157	674	205	897	1102
TOTAL	1164	5356	1594	7165	8759

In 2012, (May-September) 1,164 commercial trips were recorded with 7,165 associated guests and 1,594 guides totaling 8,759 people (Table 4). Commercial launch data was obtained through the County Park Commercial Company self reporting Sign-out/Sign-in sheets. These numbers were greater than in 2010 (6,900 commercial guides and guests) and 2011 (7,167). Some trips had multiple guides due to the numbers of guests. July and August had the greatest number of trips and therefore the highest volume of vessels launched. As noted previously, commercial trips by nature often had significantly higher group sizes, meaning more kayaks, than recreational trips. A target group size for many companies appears to be one guide with eight guests.

A total of six commercial kayak tour companies received the required County Park commercial use and launch permits. Three of the companies utilize the park as their primary launch spot. Typically, San Juan Island-based companies meet their guests at the ferry terminal in Friday Harbor and return them there after the trip; therefore the ferry schedule influences company operations. Companies tend to arrive, launch and depart the park at roughly the same time for day trips and overnight trips. The customary day trip from the park is to travel south past Lime Kiln State Park, have lunch at Dead Man's Bay (property of San Juan County Land Bank with outhouse facilities) and then return to the County Park. Overnight trips depart traveling north bound, typically en route to Washington State Parks (Stuart Island, Posey or Jones Islands). In 2012, guides were trained by Soundwatch staff on three dates as part of the KELP program. 42 guides were trained on May 25th; 8 more were trained on June 15th; and a final 6 were trained on August 2nd.

2.1.2c Provide information on observations of possible violations of the marine mammal regulations to the NMFS Northwest Regional Office for Law Enforcement in support of possible investigation or enforcement action.

Annually Soundwatch makes available to fisheries enforcement agencies annual commercial whale watch vessel identification guides and contact information. Soundwatch also compiles a calendar of regional marine related events as well as previous Soundwatch vessel count and contact numbers by date, time, location and activity to assist in the planning of enforcement patrols to target busy times and locations. Soundwatch assists with whale location information and works cooperatively with the Washington Department of Fish and Wildlife (WDFW) Enforcement, NOAA Fisheries Enforcement, Canadian DFO Fisheries Enforcement and occasionally the San Juan County Sheriff's Department and the U.S. Coast Guard during their vessel patrols with whales.

There were limited numbers of vessel patrols conducted by the Washington Department of Fish and Wildlife (WDFW) Enforcement, NOAA Fisheries Enforcement, and the San Juan County Sheriff's Department in 2012. Funding levels in 2012 were similar to those planned for 2013: NOAA with 16 dedicated whale regulation days, WDFW with 10-12 dedicated whale regulation days, San Juan County Sheriff with zero dedicated whale regulation days (opportunistic enforcement only).

Over the 2012 viewing season, Soundwatch staff witnessed 1,590 *vessel incidents* that were possible violations of both the 2011 federal vessel regulations and the updated 2012 Washington State vessel regulations for killer whales, and/or MMPA and ESA laws as well (Table 7). Of these 1,590 *vessel incident* observations, 316 incidents involved vessels either motoring or stopped within 0 to 100-yards of killer whales, 669 observations involved vessels either motoring or stopped within 100 to 200-yards of killer whales, and an additional 605 observations were of vessels within 200-400 yards in the path of on-coming killer whales. Of these Soundwatch observed incidents, the vast majority of all incident types were committed by private recreational vessels.

Soundwatch has been asked by U.S. and Canadian enforcement agencies to forward observations of possible law violations to the appropriate agencies. In 2012, Soundwatch did not forward periodic summaries of Soundwatch observed *vessel incidents* to enforcement agencies as was done in previous years. Soundwatch did respond to approximately 10 complaints in 2012 from the public and members of the commercial whale watch industry via The Whale Museum's public hot-line, email, phone and VHF marine radio calls regarding observations of possible vessel regulation infractions committed by recreational and commercial whale watch and fishing vessels. When possible, Soundwatch conducted phone or email follow-up with these individuals and encouraged each of them in turn to forward their information and photographs to the appropriate U.S. or Canadian enforcement agencies. When staff received complaints from the public or commercial whale watch operators regarding commercial whale watch vessels, information on that company was given to the public for them to contact the owner of the company or the company owner was notified that a complaint was received about a company vessel.

In some cases, Soundwatch staff has felt that the vessel incidents they witnessed were egregious behaviors that warranted filing an elevated *Serious Incident* report on possible violations of the marine mammal regulations. Soundwatch staff members use a *Serious Incident Form* generated by Soundwatch to record and report these types of more serious observations (Appendix I). In 2012, Soundwatch reported zero possible *serious incidents* with Southern Resident Killer Whales in U.S. waters. This may be an artifact of only new drivers in 2012 and associated reluctance to classify an incident as serious.

A *Serious Incident* report was filed on August 26, 2011, after the Soundwatch driver received a distress call from a commercial whale watch driver who claimed to have just witnessed a private boater hitting a Southern Resident Killer Whale (L-90) off the westside of San Juan Island. Soundwatch responded to the call immediately and interviewed both the whale watch driver and the driver of the private vessel. Soundwatch then monitored the whale which was spending a lot of time motionless on the surface, with bouts of slow travel, several miles behind the whales' family group. Soundwatch then coordinated with state and federal management and enforcement agencies, the commercial whale watch industry, killer whale researchers and monitoring partner Straitwatch. Soundwatch spent the rest of the day working with Straitwatch to keep a ¼ mile perimeter free of boat traffic, while the researchers stayed with the whale in question. The evidence was inconclusive as to whether or not the whale was actually hit by the vessel in question, or perhaps a different vessel, but it was determined that something unusual was occurring with the whale exhibiting abnormal behaviors. Soundwatch staff coordinated with monitoring, research and enforcement groups on the water throughout September and October of 2011, and during the entire 2012 season to keep an eye out for this whale and created a monitoring protocol and form that was shared with all groups (Appendix T, *L90 Monitoring Form*). L-90's observed behavior in 2012 appeared normal.

2.1.2d Provide summaries of outreach activities including dates when on-the-water activities were conducted and hours of operation with monthly invoices submitted for payment.

Invoices for documented outreach and monitoring efforts were routinely submitted to NOAA throughout the season for payment of contract funds for the stated activities.

Task 2.1.3: Conduct Data Analysis and Report on Present and Historical Compliance with Whale Watch Guidelines and Regulations.

2.1.3a Collect data on vessel compliance for the 2012 whale watch season to assess effectiveness of the Be Whale Wise Guidelines, the Kayakers Code of Conduct and federal and state vessel regulations for killer whales; conduct shore-based monitoring of kayaking activities with Southern Resident Killer Whales within the NOAA proposed No-Go Zone along the westside of San Juan Island.

During on-the-water patrols, the Soundwatch crew monitors commercial whale watch operators, recreational boaters and other vessels to record compliance with current best practice guidelines and laws. Using a set of incident definitions previously agreed upon with U.S. and Canadian management agencies, monitoring programs and commercial whale watch operators, perceived contradictions are recorded as *vessel incidents* (Figure 26). A *vessel incident* is defined as an operator of a commercial whale watch vessel, private vessel, kayak or other vessel type, operating contrary to the current Be Whale Wise Guidelines, the Kayaker Code of Conduct, and/or local, state and federal vessel regulations. *Vessel incidents* are observed and recorded using the agreed upon standardized codes, including new vessel incident categories first used in 2011 to reflect new U.S. federal vessel regulations (Appendix J & J1). In some cases these incidents may also be violations of U.S. and/or Canadian marine mammal regulations, federal and state vessel regulations for Southern Resident Killer Whales and/or other marine mammal protection restrictions.

Vessel incidents are recorded on a Soundwatch *Vessel Incident data sheet* whenever Soundwatch staff observes a perceived incident (Appendix K). In response to concerns that Soundwatch was potentially serving as defacto law enforcement, in 2011 vessel incident data collection protocols changed to not record a vessel's name or registration during an observed *vessel incident*, only the vessel type and activity (commercial as well as recreational or other vessel types). This was continued in 2012. The date, time, location (including lat/long, fisheries quad and exact name location) are recorded as well as the type of incident(s). Notation is made if video or photos were taken and if a laser range finder was used to estimate the distance to wildlife. Any special considerations or needed follow-up is indicated in a comments field. In the case that extreme or egregious vessel operator behavior is witnessed by Soundwatch staff, incident information, including specific vessel identification, is forwarded to the appropriate enforcement agencies.

2.1.3b Conduct analysis and provide report on vessel activities and vessel compliance under prior and new regional guidelines.

Data collected on vessel numbers, types and behaviors since 1998 has provided the basis for Soundwatch to characterize Southern Resident Killer Whale vessel viewing trends in the Haro Strait region and provide its findings to the whale watch industry, various stakeholders and regional marine managers to best characterize past and present whale watching trends and to provide a basis for whale watch management strategies.

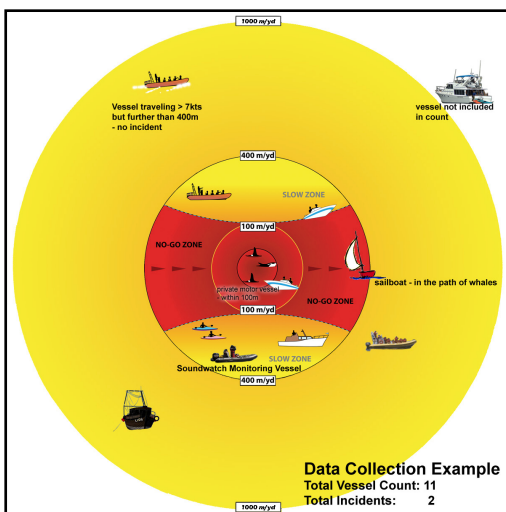
Soundwatch Vessel Based Patrols

Soundwatch vessel monitoring is conducted continuously to determine vessel activities around whales including commercial and private vessel compliance to the voluntary guidelines and regulations. *Vessel incidents* are recorded opportunistically as they are observed. Through continuous monitoring, new vessels arriving on scene are observed and contacted by Soundwatch opportunistically as time and safety to whales allow. Every time a vessel is contacted, specific contact information is recorded on a *Soundwatch Vessel Contact data sheet* (Appendix E). 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 L). 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 management and research agencies as well as both the monitoring programs, Straitwatch of B.C., Canada, and Soundwatch (Appendixes M and N). Vessels within one half-mile (880 yards) of all known whale activity are counted according to type and vessel activity (Figure 26). The area of known whale activity is variable and not limited to a half-mile, but represents the core of individual whales or groups of whales in the immediate area and can range upwards of one mile. Often the whales are more spread out than one mile. When visibility and conditions are good, a secondary count is made for the group of vessels and whales beyond one mile that the Soundwatch staff can reliably record beyond the primary count, but that the Soundwatch vessel is not with. 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. 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 non-whale research or some kind); *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.).

Figure 26: Soundwatch Vessel Patrol Count and Vessel Incident Data Collection Diagram Example.

Figure illustration courtesy of Straitwatch, Doug Sandilands.



Shore-based Kayak Monitoring

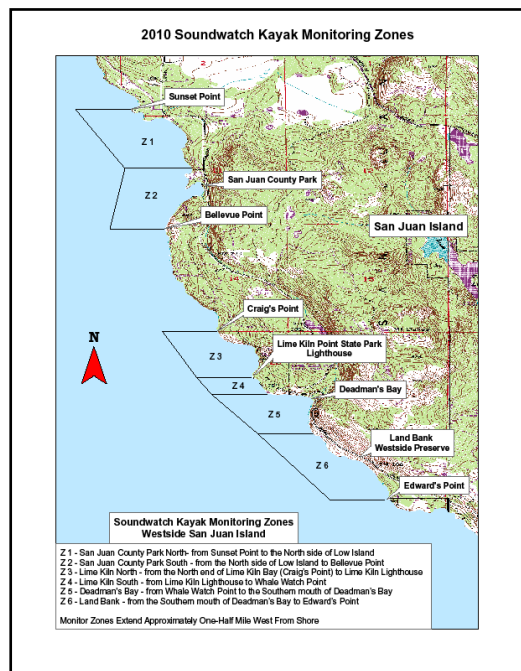
In 2012, additional terms were again added to the annual education and monitoring contract to specifically monitor recreational and commercial kayaker activities along the westside of San Juan Island during the summer whale watch season. The goal of this monitoring effort was to better characterize kayaker trends on the westside of San Juan Island as well as measure kayaker compliance with established whale watching guidelines (Be Whale Wise and the Kayakers Code of Conduct) and regulations (US federal, Washington State and federal MMPA and ESA). The sites for the study were chosen to include the main commercial and recreational paddling route, were adjacent to the established voluntary no go zone for motorized vessels (San Juan County Marine Stewardship Area) and could be easily monitored from the shore at publically owned properties.

Unlike the Soundwatch vessel monitoring, the kayak monitoring program used a scan sampling method to count kayakers by type and activity and to record kayaker incidents when both whales and kayakers were present within a half mile (880 yards) from shore. Scans were done for 10 minutes and were dependent on how long the whales remained in the study site. At the beginning and end of each 10 minute scan, the date, location, time, weather conditions and a survey of whales and a count of kayakers within one half-mile of shore were recorded. At the end of the 10-minute scan an average of the kayakers at the beginning and end of the scan was taken to get a more accurate count of kayakers present throughout the scan. The monitoring team used a sub-set of the Soundwatch standardized vessel type, vessel activity, and vessel incident definitions (including the new vessel incident categories reflecting new U.S. federal vessel regulations) as well as the full whale attribute set previously agreed upon (Appendixes O & P) to determine kayaker type and activity; kayaker incidents; and whale surveys and behaviors. The study site was broken into six observation zones (Figure 27 and Appendix Q), and the monitoring teams moved from site to site as whales moved through the area, making sure to have a mixed hourly sample for each site.

Each observed kayak during a scan, within a zone range, was counted and categorized according to type, permit status (San Juan County Park Permit Types) and a specific best-fit kayaker activity to describe what the kayaker was engaged in. Kayaker activity categories included *Whale Oriented*, *Transiting (continuous paddling)*; *Fishing (with lines)*; *Beached*; *Staging*; or *Other*. *Beached* kayakers were counted when they were temporarily out of the water and were typically launched within the hour. Zone locations were determined using the study site map (Figure 27 and Appendix Q). Monitoring staff recorded whale and kayaker attribute data on a *Kayak Count/Whale Survey data sheet* (Appendix R). Monitoring for *vessel incidents* was done continuously throughout the scan to determine compliance to the voluntary guidelines and regulations. *Vessel incidents* were recorded opportunistically as they were observed, using a *Kayaker Incident data sheet* (Appendix S).

To establish the parameter of each of the six monitoring zones (Appendix Q), charts and photographs were used to create sight-lines and points of reference regarding the edges of each zone. A laser range finder was used to measure and record the distance from shore to a monitoring vessel; while at the same time a photograph was taken and later the distance was recorded on the photograph to use as reference. The reverse was also done from the water to shore. Kelp beds and identified markers such as land formations were measured using the laser range finder to further aid in judging distances. The laser range finder was used throughout the study to ensure accuracy and consistency.

Figure 27: 2010-2012 Kayak Monitoring Zones By Location.



2.1.3c Provide a comparative report on past and present guideline compliance including information on vessels of different types and activities.

Soundwatch vessel count and incident data collection design and methodology do not allow for the analysis of vessels according to size. However, Soundwatch has consistently maintained an annual record of the regional commercial whale watch companies and respective vessels including vessel types and sizes. This annual record is useful in characterizing the annual composition of the commercial whale watch fleet in the region. Annual industry profile information is included in the 2012 Soundwatch data set CDs.

Whale Watching Trends

Since 2000, the annual number of commercial whale watch companies has remained nearly constant with the number of commercial vessels operating from both the U.S. and Canada being relatively static over the past few years (Figures 28 and 29). Recent anecdotal observations reflect an increase in the number of passengers on some of the larger vessels offering more whale watch directed trips in addition to regularly scheduled passenger ferry services, as well as an increase in shore-based whale watching opportunities in the greater area. Many shore-based whale watching areas have gained use in recent years due in part to the efforts of The Whale Trail. This partnership of non-profit and localized community groups is dedicated to promoting shore-based whale watch opportunities (<http://www.thewhaletrail.org>). Lime Kiln Lighthouse, a Washington State Park, estimates visitor numbers. San Juan County Park records use of its westside boat ramp facility by commercial ecotour users and attempts to employ a self-reporting sign-out sheet for recreational use. Using a metric that includes the annual number of U.S. and Canadian commercial vessels in operation (including kayaks), a portion of the number of commercial passenger seats available, a conservative estimate of the number of whale watch trips conducted, recreational vessel numbers from Soundwatch counts and vessel contacts (including kayaks), as well as Lime Kiln Point State Park visitor numbers, Soundwatch makes an estimate on regional whale watching numbers. Each summer season (May-Sept) during the years 2009 through 2012, Soundwatch estimates that the total number of people engaged in whale watching in the Salish Sea from shore is nearly 200,000 people (Figure 28). Currently, commercial company members in the US-Canadian transboundary Pacific Whale Watch Association do not keep a record of whale watch passengers and individual companies do not readily share this information, thus total whale watch numbers are difficult to ascertain.

In 2012 there were 79 *active* (defined as on the water at least 1 day/week May-Sept) commercial whale watch vessels originating from 37 *active* commercial companies in U.S. and Canada in the Haro Strait region (Figures 28-31). The number of U.S. and Canadian companies remained nearly the same as in 2011, with 19 Canadian and 18 U.S. companies respectively. There continues to be more Canadian vessels, totaling 54 *active* vessels compared to 25 U.S. *active* vessels, (Figures 28-31). Canadian vessels continue to be mostly the smaller rigid hull inflatable (RHIB) style of vessels while the U.S. fleet is made up of mostly larger passenger style vessels. However, more Canadian companies are acquiring larger passenger style vessels in addition to the small vessels in their fleets and the U.S. fleet is adding more small cruiser type vessels including one U.S. based RHIB. It is estimated that the number of relative U.S. and Canadian passengers is nearly the same as smaller Canadian vessels make a greater number of trips per day, per vessel. The majority of both U.S. and Canadian commercial companies operating in the transboundary waters were members of the Pacific Whale Watch Association in 2012 (Figure 31).

Figure 28: Whale Watching Trends in the Boundary Waters of Haro Strait 1976-2012.

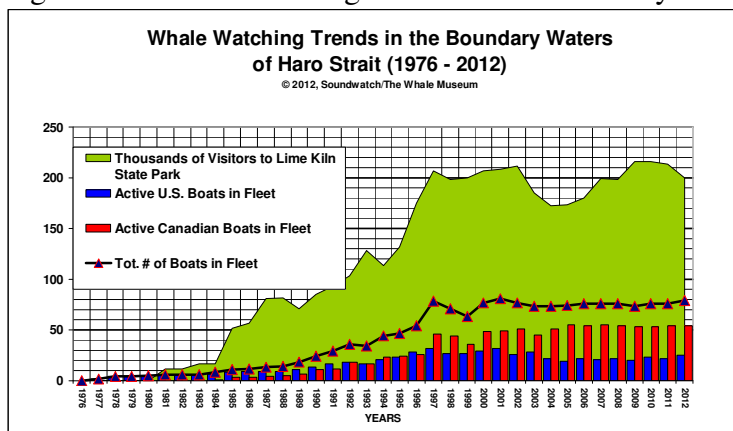


Figure 29: Growth of Commercial Whale Watching in the Boundary Waters of Haro Strait 1976-2012.

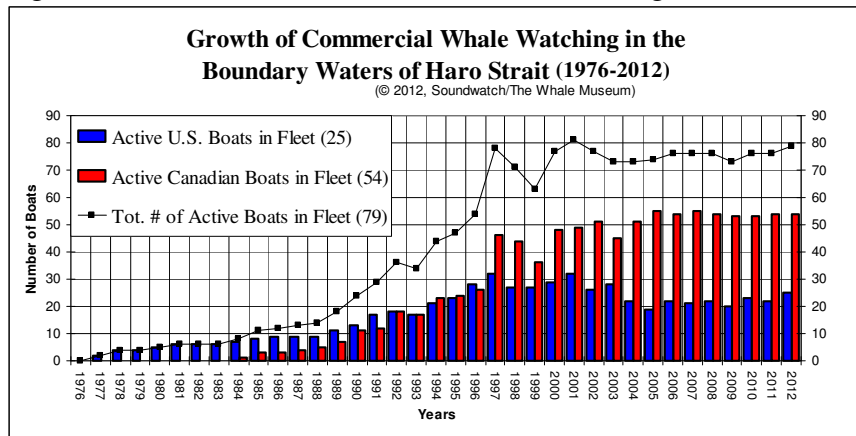


Figure 30: 2012 Whale Watch Platforms in the Boundary Waters of Haro Strait.

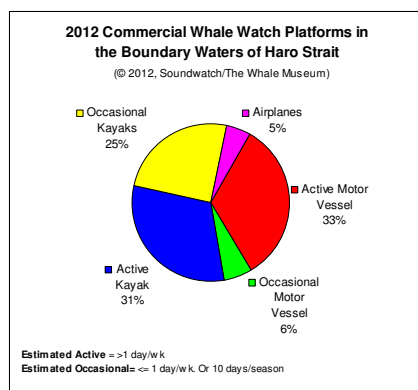
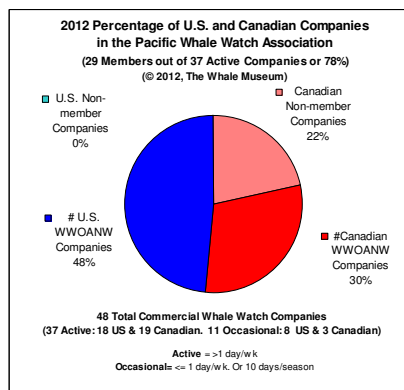


Figure 31: 2012 Percentage of U.S. and Canadian Companies in the Pacific Whale Watch Association.



Soundwatch Patrols Vessel Count Trends

Plotting annual locations of Soundwatch effort through vessel counts can be used as an overall indicator of use patterns by Southern Resident Killer Whales, as well as other cetacean species, in the designated summer core habitat for SRKW (Figures 32-34). A more complete depiction of SRKW habitat use can be found through The Whale Museum's annual sightings and long-term Orca Master data sets. There are obvious trends of overlap of whale use and boating activities within a half mile of whales, including whale watching, fishing, transiting as well as acoustic influence from large vessels transiting greater than a half mile from whales. The greatest density vessel areas observed by Soundwatch in 2012 tended to be within a half mile nearshore along the westside of San Juan Island (Zone 1- the NOAA proposed vessel restriction area), outside of a half mile along the westside of San Juan Island and north into Haro Strait (Zones 2, 3, and 5), Southern Rosario Strait (Zone 8), and the Canadian waters of Boundary Pass (Zones 16) (Figures 32- 34).

Figure 32: 2012 Soundwatch Vessel Counts by Location Map.

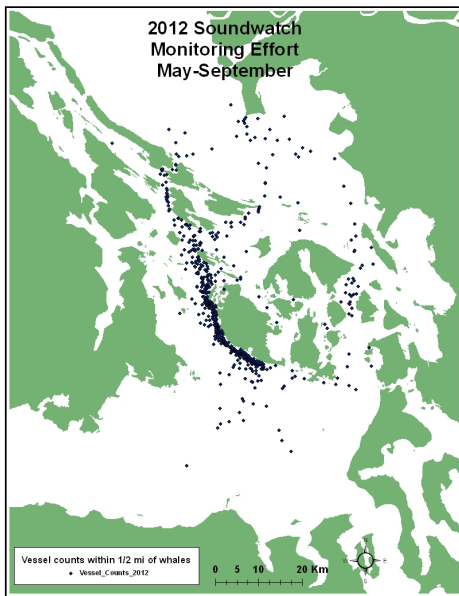


Figure 33: 2012 Soundwatch Vessel Count Density With No Go Zone Highlighted Map.

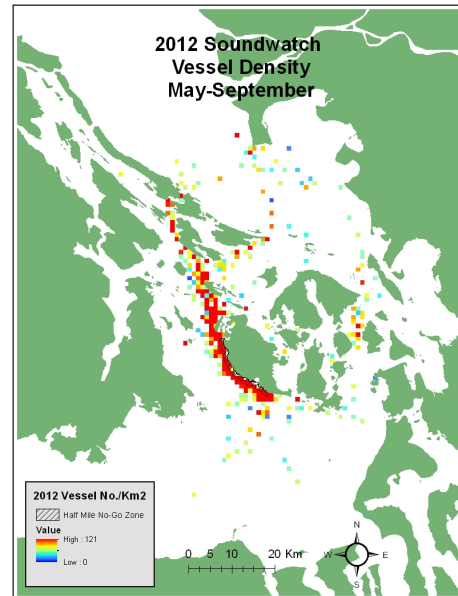
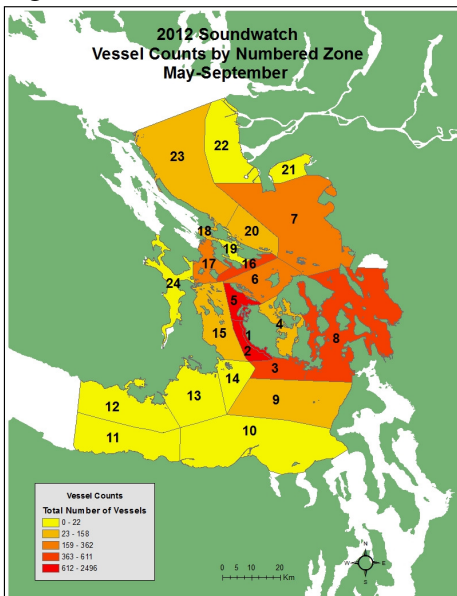


Figure 34: 2012 Soundwatch Vessel Count By Numbered Zone Map.



Southern Resident Killer Whales are the primary viewing target and have had an annual and monthly average of nearly 20 vessels of various types within a half-mile of their location from May through September between the hours of 9 a.m. and 6 p.m., from 1998-2012, as observed by Soundwatch (Figures 35-45). In 2012, May-September, the annual total boat average was 17, which indicates an increase after an eight-year trend in lower overall averages of vessels seen with whales (Figures 39 & 40, 42). This greater average vessel trend is consistent with local marina vessel use data (San Juan County Marine Resources Committee, Roche Harbor and Friday Harbor on San Juan Island) which report monthly marina use as either steady or as increasing. The changes in average vessel trend with whales observed by Soundwatch likely reflects a targeted effort from the commercial whale watch industry to spend only 1/3 of their trip (+/- one hour) with a particular group of whales and to spend time viewing other whale groups and marine wildlife, thus spreading out the fleet (Pacific Whale Watch Association industry guidelines <http://pacificwhalewatch.org/guidelines>). In addition, whale habitat use

trends over the past several years (Soundwatch, Orca Master) indicate that the whales are traveling more often in separate groups (by pod groups and mixed pod groups) and that these groups are often travelling in spread formations, apart from each other, thereby spreading out the boat concentrations, both commercial and private, with whales as well. For much of the 2012 season there was only one group of killer whales present in the Haro Strait region (J-pod) at one time. This could result in a greater average number of boats observed with whales.

The 2012 annual maximum number of vessels observed with whales was 56 total boats, which is also a reduction from previous years, and reflects annual and monthly variability in number of boats with whales, and the concentrations of vessels that routinely occur (Figures 39-42). The maximum number of commercial whale watch vessels was 38, recorded in July, as well as private vessels with 29 vessels and the maximum number of kayakers at 37 also recorded in July (Figure 44). Annual and monthly maximum vessel totals are often more than double the annual average vessel total, thus neither the average nor maximum number best describes the actual vessel conditions the whales regularly experience. The 2012 monthly average of commercial whale watch, private vessels, kayakers as well as commercial fishing vessels remained mostly constant throughout the season, again with a rise seen in July and August (Figures 35, 43-46). The hours between 11 a.m. and 4 p.m. continue to be the busiest, with a slight dip around 12 p.m. to 1 p.m. as commercial vessels exchange passengers between morning and afternoon trips (Figures 36-38). In 2012, fishing conditions for coho salmon were decent, which created a spike in September in numbers of private fishing vessels and recreational fishing activities overlapping with whale locations (Figures 44 and 50). Overall, September tends to have less overall vessel traffic with lower average vessel numbers; however the long Labor Day holiday weekend and fishing conditions can create busy vessel traffic days, thereby raising the overall average as well as some maximum numbers and larger numbers earlier in the day (Figure 37). Vessel numbers observed with whales typically decline dramatically in October both because the whales are less predictably in the area and the main commercial and recreational boating season is over. Soundwatch did not collect vessel data in October of 2012. In addition, the four day salmon derby in September was canceled.

It should be noted for interpretation of the data presented, that the average and maximum numbers of vessels depicted in the figures are discrete observations and are therefore not totals of each vessel type. For example, in 2012 the maximum number of all vessel types recorded within a half mile of whales was 56 (Figures 44-46), with the maximum of commercial vessels observed at 38, private recreational vessels at 29, and kayakers at 37, which if totaled together would equal 160, well above the recorded maximum number of 56 vessels. However, the maximum numbers of each vessel type were not all observed at the same time, on the same day, and are therefore not totals of each other.

Figure 35: Average Number of Vessels Accompanying Orcas by Month, 1998-2012.

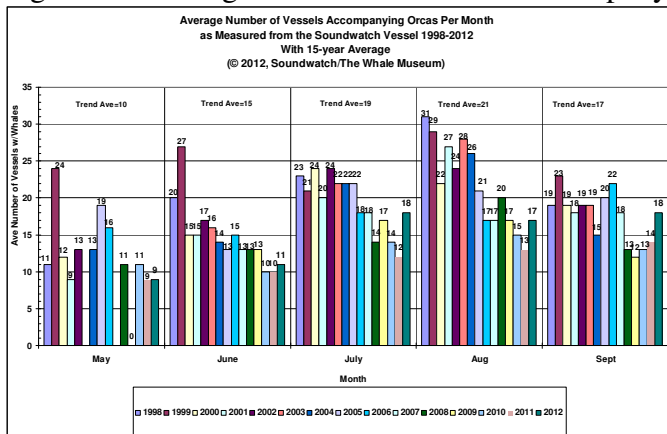


Figure 36: Annual Average Numbers of Vessels with Orcas by Time of Day, 1998-2012.

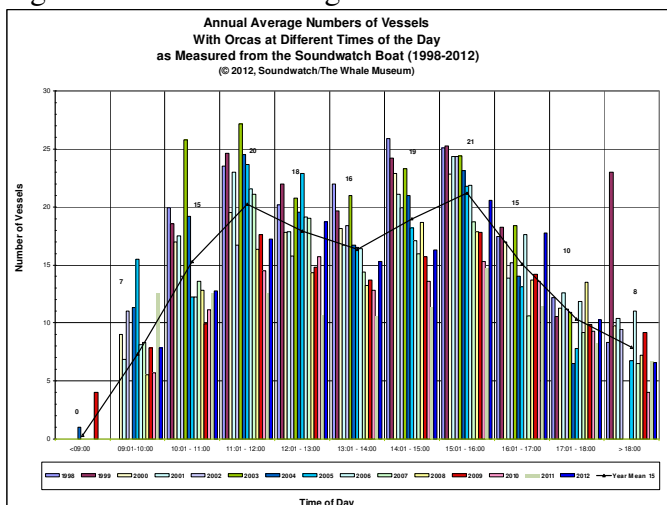


Figure 37: Monthly Number of Vessels with Whales by Time of Day, June-September 2012.

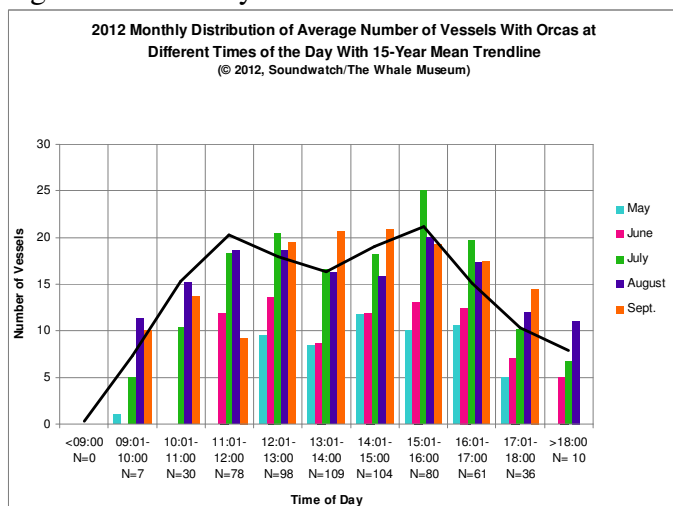


Figure 38: Average Number of Vessels with Whales by Time of Day, May-September 2012.

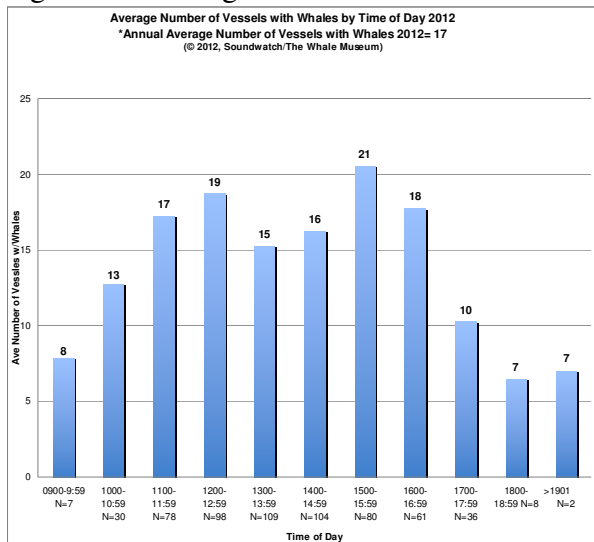


Figure 39: Annual Vessel Type Averages and Maximums Accompanying Orcas in Boundary Waters, May-September, 1998-2012.

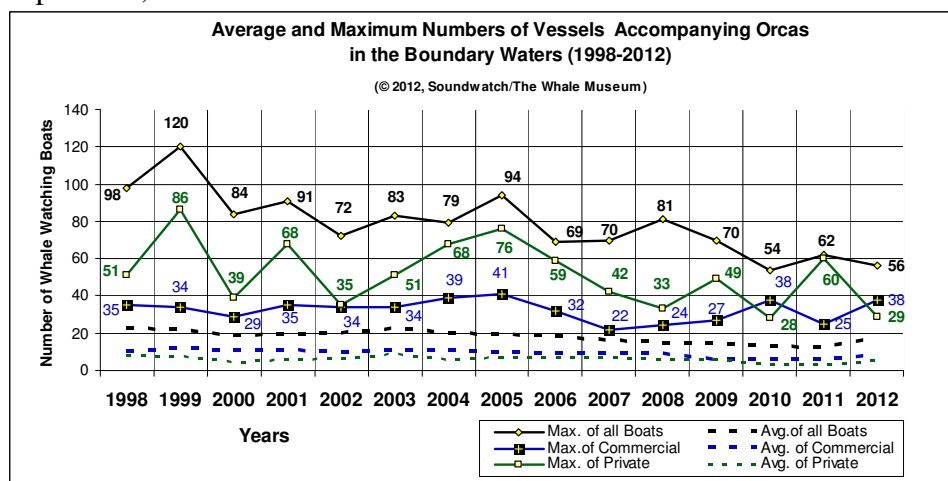


Figure 40: Annual Averages of Vessel Types Accompanying Orcas May-September, 1998-2012.

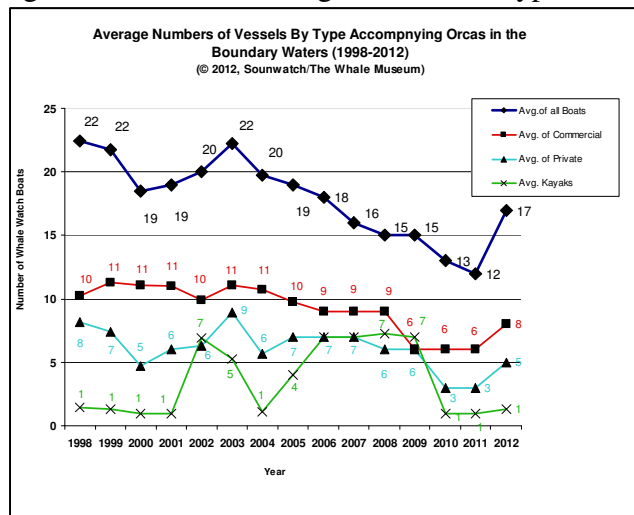


Figure 41: Annual Maximums of Vessel Types Accompanying Orcas May-September, 1998-2012.

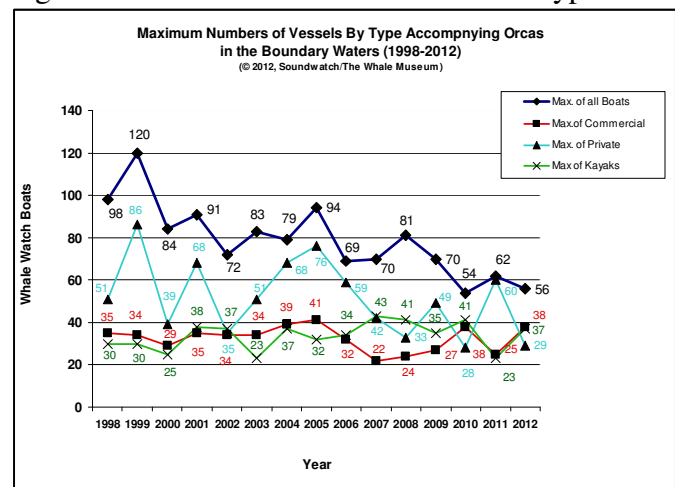


Figure 42: Mean Annual Daily Average of Number of Commercial and Private Boats with Whales in Haro Strait Region May-September 1998-2012 with Standard Deviation.

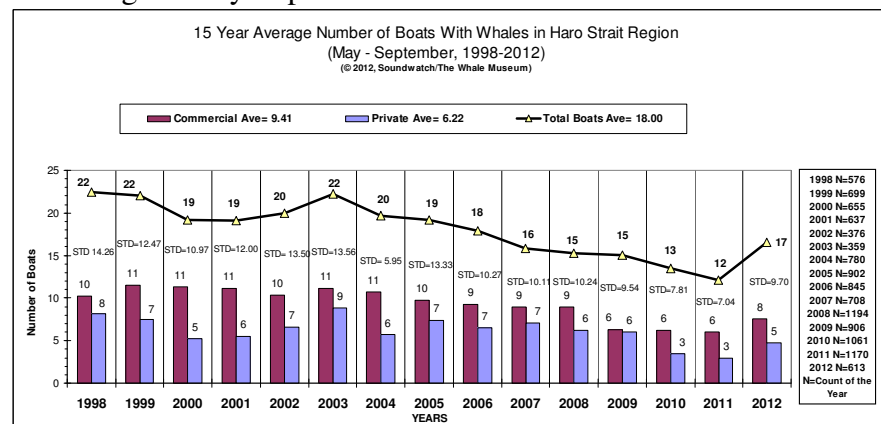


Figure 43: Monthly Average by Type of Vessels with Orcas, May-September 2012.

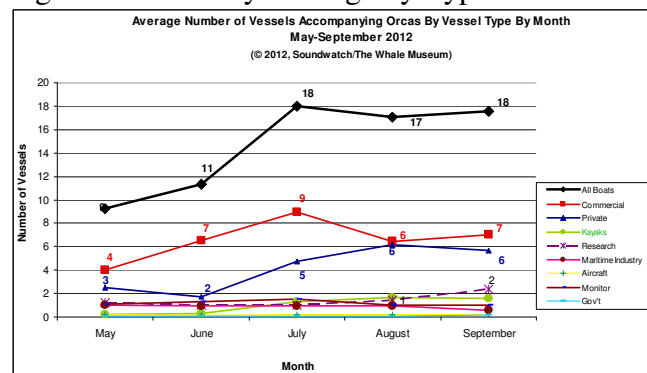


Figure 44: Monthly Maximum by Type of Vessels with Orcas, May-September 2012.

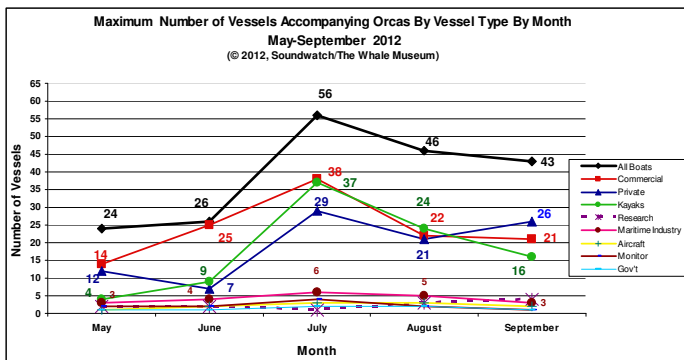


Figure 45: Average Number of Commercial Vessels with Whales by Commercial Vessel Type by Month, 2012.

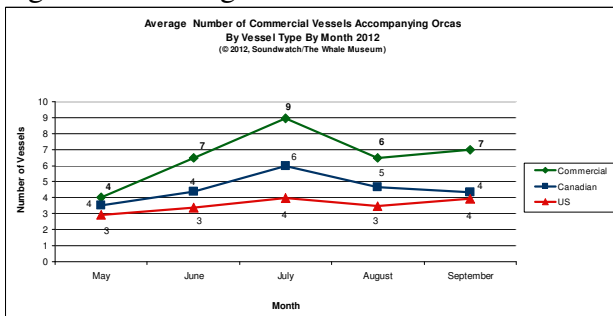
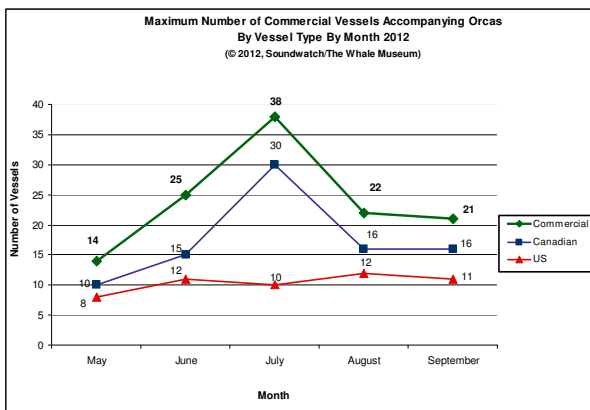


Figure 46: Maximum Number of Commercial Vessels with Whales by Commercial Vessel Type by Month, 2012.



There is a great variability in the number and types of vessels with whales (Figures 35-50). This wide variability is a factor not only of month and time of day, but also due to whale locations overlapping with vessels engaged in a variety of activities (Figures 47-50). In 2012, of the vessels seen on average with whales, 46% were commercial whale watch vessels (19% U.S. and 27% Canadian), 29% private vessels, 12% marine shipping/cargo (also referred elsewhere as maritime industry), 7% monitoring vessels (Soundwatch and Straitwatch), 8% kayaks, 3% research vessels, and 1% each airplanes, commercial fishing vessels, and government or military vessels (Figure 47). Throughout the season the majority (69%) of vessels observed within a half mile of whales were engaged in whale-oriented activities (Figures 48 and 49). Note that the vessel activity composition of vessel count data is different than those for vessel contact data because more vessels were counted than contacted. Recreational fishing activities increased in September, raising the percent of vessels recorded as engaged in fishing activities near whales (Figures 49 and 50). Other vessel activities recorded within a half mile of whales included transiting at 21%, and recreational and commercial fishing activities at 5%. Soundwatch records large maritime industry vessels such as marine cargo ships, tugs with

tows, cruise ships, etc., that are outside of a half mile of whales but are within acoustic range of whales; if one of these large ships is within a half mile of whales it is recorded as transiting. In 2012, 4% of vessels recorded with whales were large ships within acoustic range of whales (Figures 48-50).

Figure 47: Distribution of Vessels by Vessel Type When Whales Present May-September 2012.

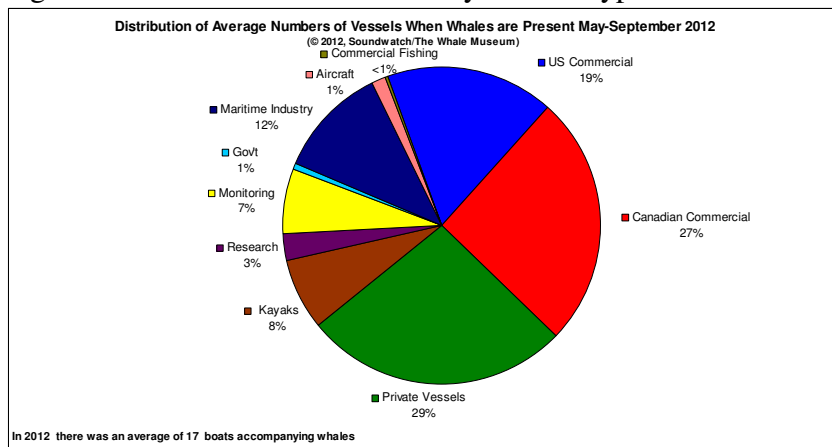


Figure 48: Distribution of Vessels by Vessel Activity When Whales Present May-September 2012.

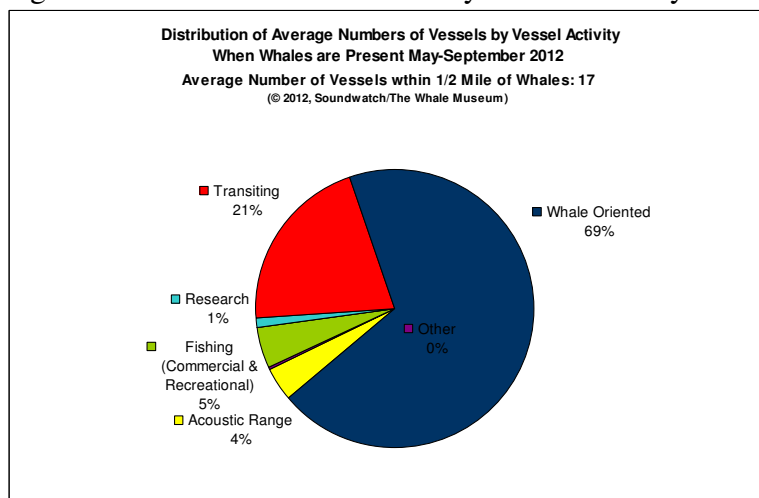


Figure 49: 2012 Monthly Average Numbers of Vessels with Whales by Vessel Activity.

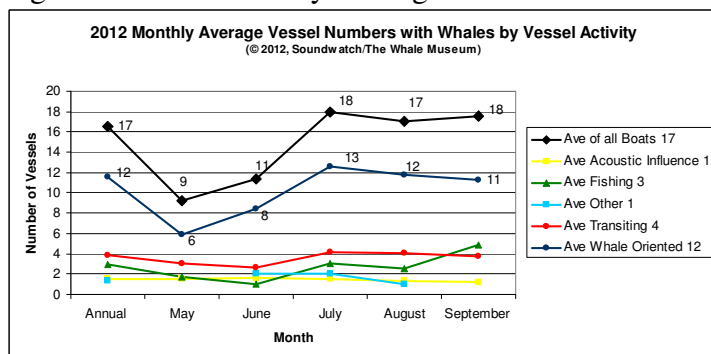
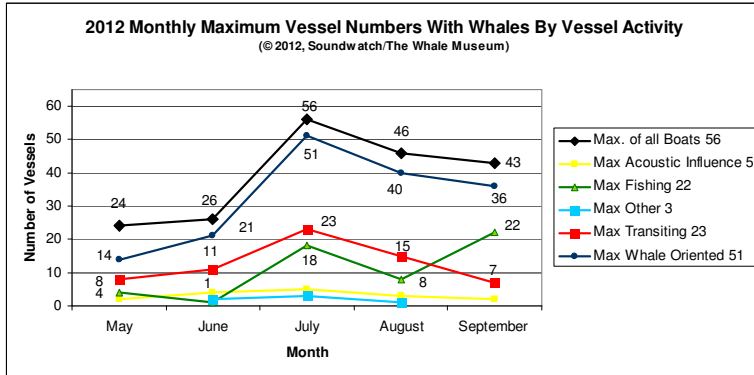


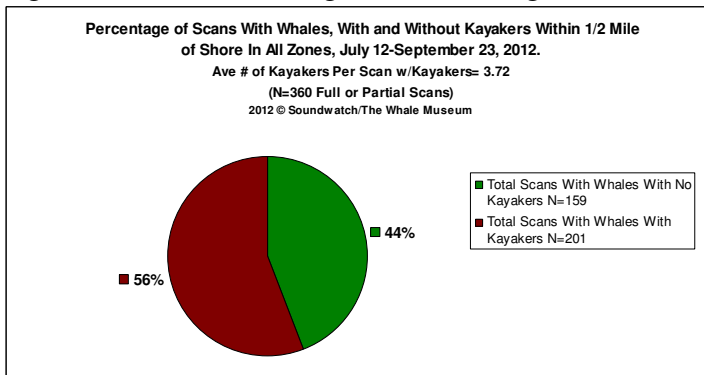
Figure 50: 2012 Monthly Maximum Numbers of Vessels with Whales by Vessel Activity.



Shore-based Kayak Monitoring Scan Data Count Trends

For the past three seasons, the Soundwatch Kayak Monitoring Program has made observations of the number, type, permit status and activity of kayakers (a kayaker is defined as ‘one kayak’ and could have been a single kayak or a double, etc.) during 10-minute scans, and when whales were present within a half mile of shore, in one of six monitoring zones along the westside of San Juan Island. In 2012, the kayak monitoring effort was greater than that conducted in either 2011 or 2010, resulting in more than double the number of scans previously collected in a season and a slightly longer study duration: July 12 through September 23, 2012. Unfortunately, data on presence of other vessels when kayakers were not observed were not collected.

Figure 51: 2012 Percentage of Monitoring Scans with and without Whales



There were a total of 360 10-minute Scans conducted all with whales between July 12 and September 23, 2012. Out of the 360 scans, 159 scans, or 44% of the time, no kayakers were observed with whales; and in 201 out of 360 scans, kayakers were observed with whales, or 56% of the time. An average of 3.72 kayakers was observed in the 201 10-minute scans with whales and kayakers (Figure 51). Of the 201 scans, commercial kayakers made up the majority of the kayaker types present, with 82%; recreational kayakers were observed 17% of the time, with non-commercial groups and ‘other human powered craft’ observed only 1% of the time (Figure 52).

Figure 52: 2012 Percentage of Monitoring Scans with Whales and Kayakers, by Kayaker Type Percentage.

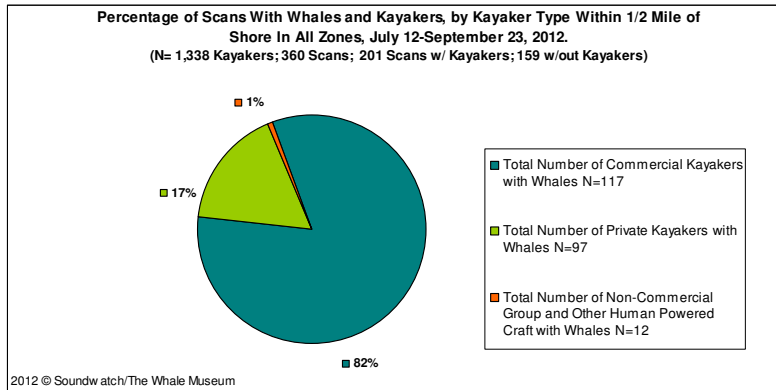


Figure 53: 2012 Average and Max of All Kayakers in All Monitoring Zones.

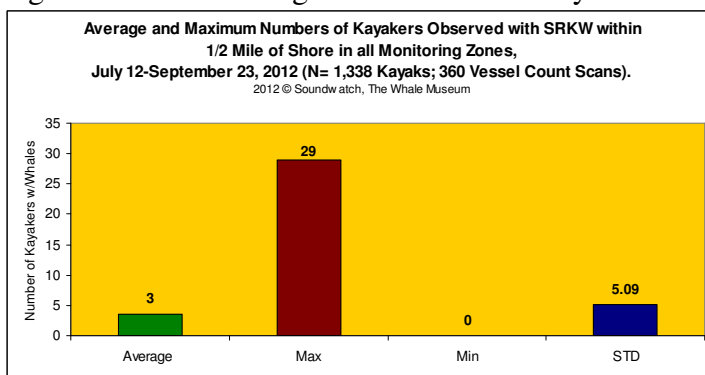
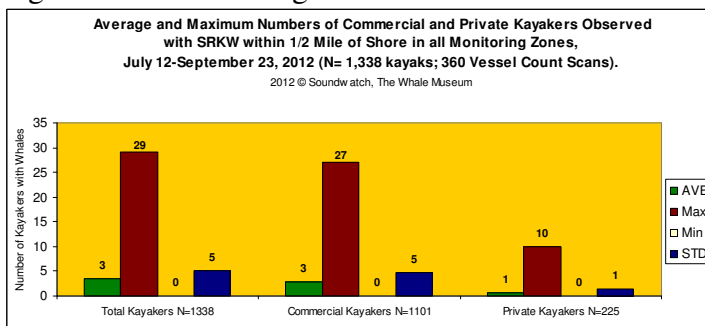


Figure 54: 2012 Average and Max of Commercial and Private Kayakers in All Monitoring Zones.



In the 201 scans with whales and kayakers, a total number of 1,338 kayakers observed. The maximum number of kayakers observed with whales was 29, the average number of kayakers observed with whales was 3 (Figures 53 and 54). The maximum number of commercial kayakers observed with whales was 27, with the average number of commercial kayakers observed with whales being 3; the maximum number of private kayakers observed with whales was 10, with the average number of private kayakers observed with whales being 1 (Figures 53 and 54).

Figure 55: 2012 Percentage of Scans By Monitoring Zone.

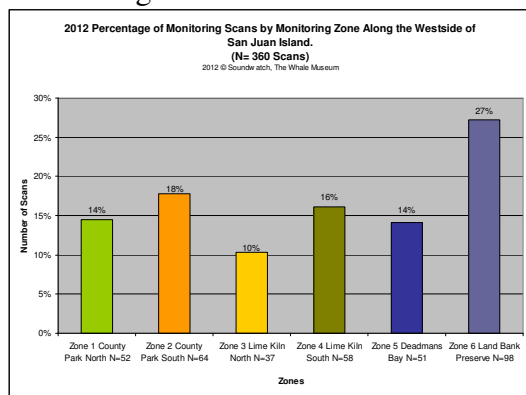


Table 5: 2010-2012 Shore-based Kayak Monitoring Zone Locations.

Site 1: County Park North - from Sunset Point to the North side of Low Island
Site 2: County Park South - from the North side of Low Island to Bellevue Point
Site 3: Lime Kiln North - from the North end of Lime Kiln Bay (Craig's Point) to Lime Kiln Lighthouse
Site 4: Lime Kiln South - from Lime Kiln Lighthouse to Whale Watch Point
Site 5: Deadman's Bay - from Whale Watch Point to the Southern mouth of Deadman's Bay.
Site 6: Land Bank - from the Southern mouth of Deadman's Bay to Edward's Point.

Again in 2012, Monitoring Zone 6 (Land Bank westside Preserve) had the greatest number of scans with whales and with whales and kayakers; Zone 3 (Lime Kiln North) had the fewest scans with whales and with whales and kayakers (Figure 55, Table 5).

Figure 56: 2012 Percentage of Scans with Whales with Kayakers by Zone.

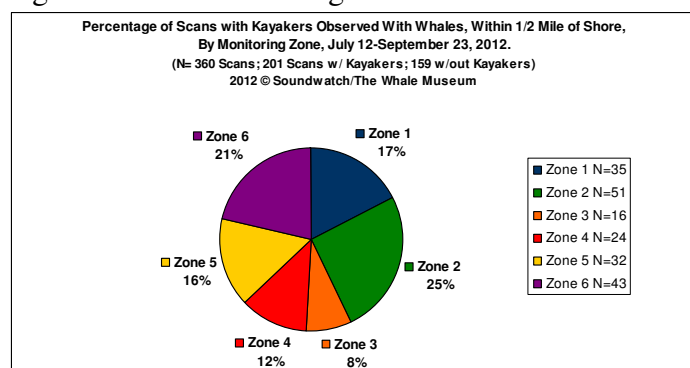
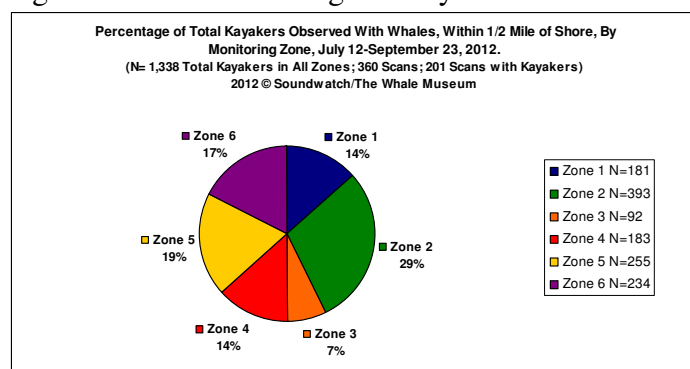


Figure 57: 2012 Percentage of Kayakers Observed with Whales by Monitoring Zone.



Of the 201 scans with whales and kayakers, Zone 2 (County Park South) had the most number of scans with 51 scans or 25% of all scans, with Zone 3 (Lime Kiln North) having the least number of scans with 16 or 8% (Figure 56). As in 2011, Zone 2 (San Juan County Park North) had the most number of kayakers with 393 or 29% of all observed kayakers. Zone 3 (Lime Kiln South) having the least number of kayakers with 92 or 7% of total kayakers observed (Figure 57).

Figure 58: 2012 Average and Maximum of Kayakers by monitoring Zone.

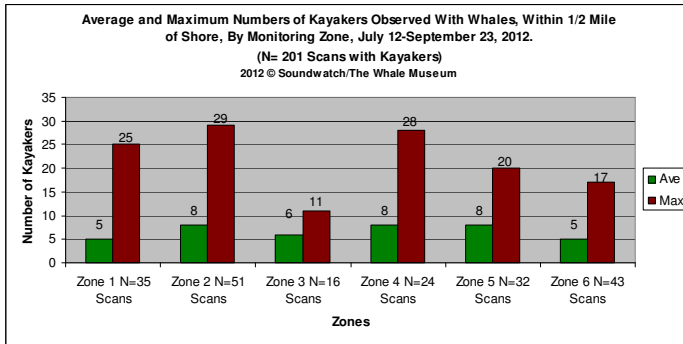
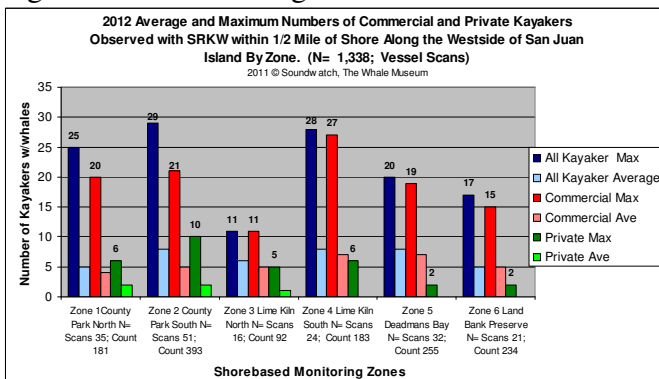


Figure 59: 2012 Average and Maximum of Commercial and Private Kayakers in Each Zone



Monitoring Zone 2 (San Juan County Park South) had the greatest maximum number of kayakers observed, which was expected as this is the zone that contains the primary launch and take out area (Figures 58 and 59). Overall, kayakers showed fairly even distribution throughout the study area (Figures 58 and 59). However, average numbers of private kayakers was greater closer to the County Park while average numbers of commercial kayakers were greater closer to Lime Kiln. Commercial kayakers made up the majority of kayakers present in all of the zones.

Vessel Incident Trends

Vessel incident data can be utilized to characterize types of vessels, types of vessel incidents and area locations where vessel incidents are most commonly observed and can be used to generate future strategies for commercial and recreational whale watching and targeted outreach efforts as well as vessel management strategies such as modifying existing guidelines and evaluating the need to establish new and/or additional vessel regulations. With U.S. federal vessel regulations being established in 2011, vessel incident observations can lay the foundation for evaluating the effectiveness of newly implemented vessel regulations.

Soundwatch monitors commercial whale watch operators, recreational boaters and other vessel operators to record behaviors that are inconsistent with current best practice guidelines and/or vessel regulations. Using a set of incident definitions and incident recording protocols agreed upon annually with commercial whale watch operators, marine mammal management agencies and monitoring groups, perceived contradictions of vessel operations around whales are recorded as *vessel incidents*. A *vessel incident* is specifically defined as a driver of a commercial whale watch vessel, private boat operator, kayaker or other vessel operating contrary to current voluntary Be Whale Wise Guidelines, Kayakers Code of Conduct, and/or federal and state vessel regulations (Figure 26).

A set of standardized *incident descriptions* was established in 2007 (Appendixes J & J1, Kayaker Sub-set O). This standardization is being used by the U.S. and Canadian federal governments as well as the respective monitoring programs, Straitwatch of British Columbia, Canada and Soundwatch of Washington State, U.S. In the same fashion that the *vessel type* and *vessel activity* categories for the *vessel counts* were designed to be multi-tiered, the *vessel incident categories* are tiered broad to specific and are recorded as *vessel incidents* at a fine scale. For analysis they are sometimes lumped into the broad incident categories, but also can be looked at more closely to better understand the incident type. Some older terms (i.e., common term: commercial whale watch; newer term: ecotour) are used in this report when discussing *vessel types* and *vessel incidents* because they are more commonly used outside of the monitoring programs.

Evolution of Vessel Incident Categories

In 2009, NMFS issued a proposed rule to adopt elements of the Be Whale Wise guidelines as regulations. The proposed regulations were based on the high number of observed incidents and concerns over the number of vessels in the immediate vicinity of the whales, as well as an increase in world-wide research indicating that vessels alter whale behavior and the potential for acoustic masking from vessels. NOAA Fisheries implemented U.S. federal vessel regulations for killer whales in the inland waters of Washington State in May 2011. The final rule included two elements: 1) a prohibition on approaching killer whales within 200 yards, and 2) a prohibition on being 200 to 400 yards within the path (i.e., ahead or behind the direction of travel) of killer whales.

The new U.S. federal vessel regulations increased the vessel distance for killer whales (*Orcinus orca*) seen in U.S. waters from a 100 yard guideline limit to a 200 yard mandatory regulation, but the guideline limit of 100 yards/meters is still in effect for other cetacean species encountered, as well as for killer whales encountered in Canadian waters. A vessel restriction on positioning in the path of a whale was a previous Be Whale Wise guideline limit for all cetaceans encountered on both sides of the border. Therefore, a new broad incident category was added in 2011, as well as sub-incident categories and the clarification of existing incident categories to reflect the new regulations and existing guidelines (See *Incident Descriptions* Appendixes J & J1, O). The new vessel incident category is termed *Vessels within 200 yards of whales*, which is further divided into two main categories to be consistent with previous years' analysis: 1- *Stopped within 200-yards of Whales* and 2- *Motoring/ fishing within 200-yards of Whales*. Both of these categories are further broken down into sub-categories *Stopped within 0-100-yards of Whales* and *Stopped within 100-200-yards of Whales*; and *Motoring/ fishing within 0-100-yards of Whales* and *Motoring/ fishing within 100-200-yards of Whales*; the previous *Parked in the Path of Whales* incident was modified to *In the Path of Whales which is defined as a vessel 200-400 yards ahead of whales, either motoring or stopped*. These adjustments were made so as to be consistent with the new U.S. federal vessel killer whale regulations that apply in U.S. waters, but not in Canadian waters, as well as the Be Whale Wise guidelines that apply in both U.S. and Canadian waters.

As the vessel guidelines and laws have evolved over the past 15 years, the definitions and categories of vessel incidents have evolved along with them (Table 6). As not all vessel incidents were applicable each year, it has been necessary to discontinue use of those categories or in some cases, combine or separate incident types to match new incident definitions. Therefore, in the analysis some incident types are missing from year to year while other incident types are depicted as either combined or separate, making some of the incident categories change percentages depending on how they are being compared. An example of this evolution has been the persistent vessel incident type of being "in the whales' path". As the specific incident definition has changed over the years, it has been categorized differently as *Leapfrogging*, *Repositioning*, *Parked in the Path* or *In the Path of whales*. This incident type has sometimes been considered one or two separate incidents (i.e., 2 incidents: 1-being in the path up to 400 yards and not moving out of the way resulting in 2-being within 100 yards; or 1 incident: 1-in the path of whales because of not moving at 400 yards) depending on how it was

annually defined. Therefore some years the analysis has combined or separated the incident types of *Parked In the Path of Whales* from *Stopped within 100-yards of Whales* (Tables 6 and 7, Figures 63, 71 and 72). With the adoption of Washington State vessel regulations for killer whales in 2008 (updated in 2012), and U.S. federal regulations for killer whales in 2011 that specifically delineate a difference between the being in the path of a killer whale as up to 400 yards ahead, and being within 100-200 yards from a killer whale, the incidents of *vessels in the path* (moving or stopped) and *vessels stopped within 100 yards* (in 2011, *within 200 yards* as well) were analyzed separately.

Soundwatch Patrols Vessel Incident Trends

Soundwatch uses summary statistics to analyze annual vessel incident data. In 2012, there were a total of 2,621 vessel incidents observed and recorded by Soundwatch staff (Tables 6 and 7, Figures 63-65). Since new incident categories were added in 2011 to reflect the new U.S. federal vessel regulations and existing guidelines (See *Incident Descriptions* Appendixes J & J1, O), there are now more vessel incidents that a vessel operator can commit making it difficult to interpret the increase in the total number of vessel incidents in 2011 & 2012 versus previous years (Table 6, Figures 71 & 72). There was only one new incident category since 2011, vessel within 100-200 yards of whales. 100-400 yards in the path was captured in a previous guideline “parked in the path” incident category. Compounding the difficulties in interpretation of the increase in vessel incidents is the fact that with the new laws and existing guidelines in place it is possible to record the same vessel when it is within 200 yards and then again when within 100 yards making it so that a vessel operator would be recorded as having 2 incidents recorded for a sequence of movements that previously would have only resulted in one incident being recorded. Thus while 2011 & 2012 incident vessel incident data are useful to reflect what occurred on the water with vessels and whales under the new regulations, it is essentially laying a foundation for future comparisons between multiple years with and without new regulations to evaluate the effectiveness of such measures.

To further complicate matters, it is difficult to measure effectiveness of new regulatory measures when they are not consistent on both sides of a U.S./Canadian border which the whales and vessels frequently travel back and forth across, and are not consistent with lesser guidelines in effect for other species. A further complication regarding transboundary comparisons is the fact that there is not consistent law enforcement presence on either side of the border.

Plotting annual locations of Soundwatch observed vessel incidents can be used as an overall indicator of vessel incident patterns and vessel density within a half mile of Southern Resident Killer Whales inside the designated summer core habitat (Figures 60-62). There are obvious overlap trends of whale use and boating activities within a half mile of whales, including whale watching, fishing, transiting and acoustic influence from large vessels greater than one half mile from whales. As in previous years, the areas with the most vessel incidents observed by Soundwatch in 2012 tended to be within a half mile near shore along the westside of San Juan Island (Zone 1- the 2009 NOAA proposed vessel restriction area), outside of a half mile along the westside of San Juan Island and north into Haro Strait (Zones 2, 3, and 5), San Juan Channel (Zone 4), Canadian waters of Swanson Channel & Boundary Pass (Zones 16 and 17) (Figures 60-62). Not surprisingly, the areas with the highest numbers of vessels also tend to have the most vessel incidents occurring with the highest density of incidents (Figure 62).

Figure 60: 2012 Soundwatch All Observed Vessel Incidents by Incident Location Map.

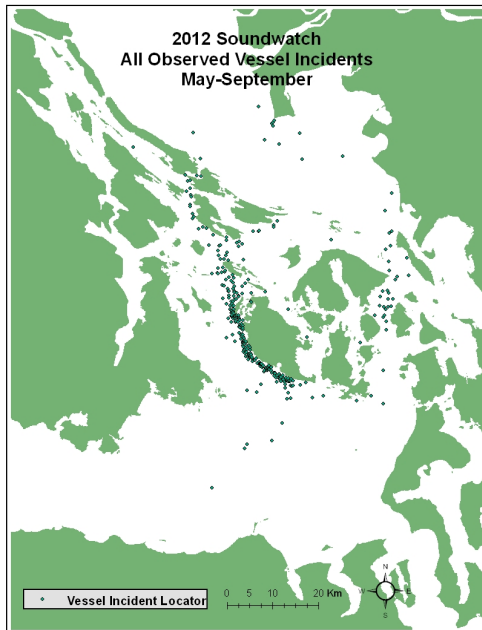


Figure 61: 2012 Soundwatch All Observed Vessel Incident Numbers by Zone Map.

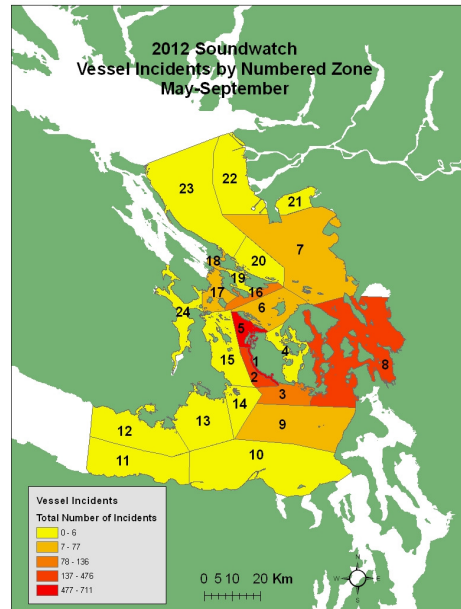


Figure 62: 2012 Soundwatch All Observed Vessel Incident Density per Square Kilometer.

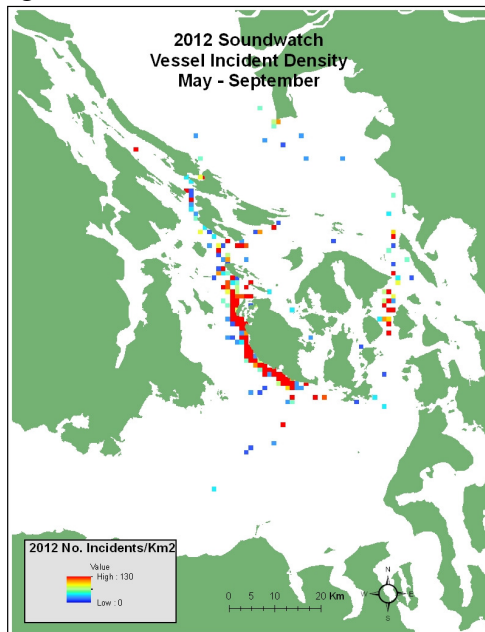
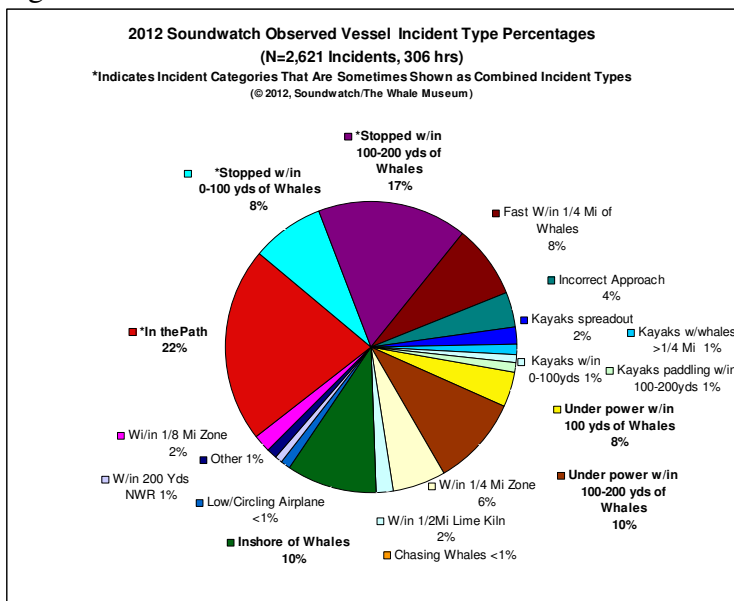


Table 6: Soundwatch 1998-2012 All Vessel, All Incident Type Percentages.

Soundwatch Observed All Vessel Behaviors Contrary to Guidelines and/or Regulations 1998-2012 (© 2012, Soundwatch/The Whale Museum)																
Behavior Category	Yearly Incident Percentages															
Notes Categories Not Used During All Years	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
•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%	
•Stopped within 0-100 yards of whales														17%	8%	
•Under power within 100-200yards of whales														12%	10%	
•Stopped within 100-200yards of whales														18%	15%	
Within 440 yards of SJI No-Boat Zone	39%	26%	17%	17%	7%	13%	4%	8%	4%	5%	6%	8%	10%	6%	6%	
Within 880 yards of Lime Kiln	2%	2%	2%	1%	2%	5%	1%	2%	1%	3%	1%	3%	4%	1%	2%	
Crossing path of whales	4%	3%	5%	2%	4%	7%	6%	4%	5%	8%	4%	5%	5%	2%	7%	
Chasing/pursuing whales	3%	1%	3%	2%	<1%	4%	3%	1%	2%	3%	3%	3%	3%	1%	<1%	
Inshore of whales	5%	29%	24%	25%	19%	16%	22%	18%	17%	16%	21%	24%	17%	13%	10%	
Airplane within 1000 feet	4%	2%	4%	7%	14%	6%	6%	4%	6%	8%	8%	6%	4%	3%	<1%	
Within 200 yards of National Wildlife Refuge	0%	1%	3%	1%	2%	2%	1%	0%	<1%	1%	1%	<1%	1%	<1%	1%	
•Other		1%	3%	3%	14%	5%	15%	11%	10%	3%	2%	1%	1%	0%	1%	
•Within 220 yards of shore; whales present			4%	4%	2%	<1%	4%	1%	2%	2%	<1%	<1%	1%	1%	2%	
•Repositioning within 100 yards			7%	7%												
•In the Path (formerly Parked in the path of whales)				26%	24%	17%	19%	27%	26%	17%	25%	19%	23%	11%	16%	
•Fast within 1/4 mile					3%	4%	9%	10%	11%	16%	11%	13%	13%	6%	8%	
•1st Approach head on, behind, or on shore					4%	2%	1%	<1%	1%	2%	3%	2%	3%	1%	4%	
•Kayaks spread out					<1%	3%	0%	<1%	1%	1%	1%	1%	1%	<1%	2%	
•Kayaks with whales outside 1/4 SJI Zone					<1%	1%	0%	<1%	1%	<1%	1%	1%	1%	<1%	1%	
•Kayaks paddling w/in 0-100 yds						3%	0%	<1%	1%	<1%	1%	<1%	1%	<1%	1%	
•Kayaks paddling w/in 100-200 yds														1%	1%	
•Kayaks parked on headland															<1%	
Total %	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	
Estimated Annual Observation Hours	426hr	510hr	462hr	486hr	378hr	312hr	486hr	564hr	516hr	420hr	540hr	420hr	442hr	573hr	306hr	

Figure 63: 2012 Soundwatch Observed Vessel Incident Percentages.



In 2012, the top Soundwatch observed vessel incidents by percentage included: **1- Stopped within 200-yards of Whales** at 23% (which was broken up into two categories: *Stopped within 0-100-yards of Whales* (8%) and *Stopped within 100-200-yards of Whales* (15%) to be consistent with the new vessel law that only applies in U.S. waters, but not in Canada); **2- Vessels motoring within 200-yards of Whales** (Under power within 200-yards of Whales) 14% (which was also broken up into two categories: *Motoring within 0-100-yards of Whales* (4%) and *Motoring within 100-200-yards of Whales* (10%) to be consistent with the new vessel law that only applies in U.S. waters, but not in Canada); **3- Vessels motoring inshore of whales** (Inshore of whales) at 10% of

all incidents; **4- Vessels In the Path of whales (200-400 yards)** at 16% of all incidents; and **5- Vessels motoring fast within 400 yards of whales (Fast w/in ¼ mi Whales)** at 8% and **Vessels within ¼ mile San Juan Island Voluntary No Motor Boat Zone (W/in ¼ Mi No Go Zone)** at 6% each of all incidents (Tables 6 and 7, Figure 63).

Figure 64: 2012 Soundwatch Observed Vessel Incidents Percentages by Vessel Type.

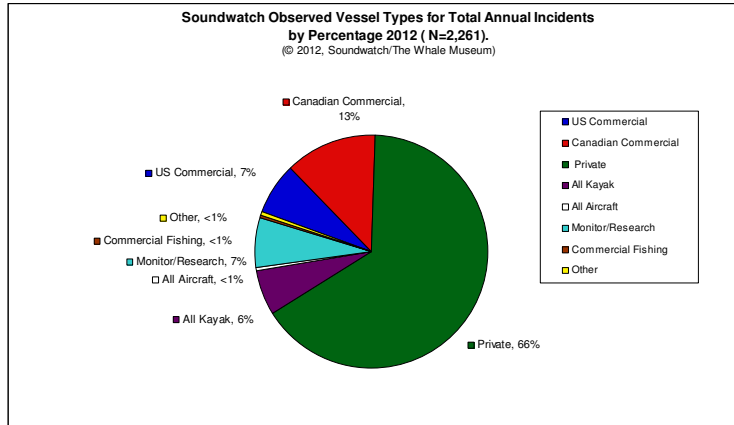
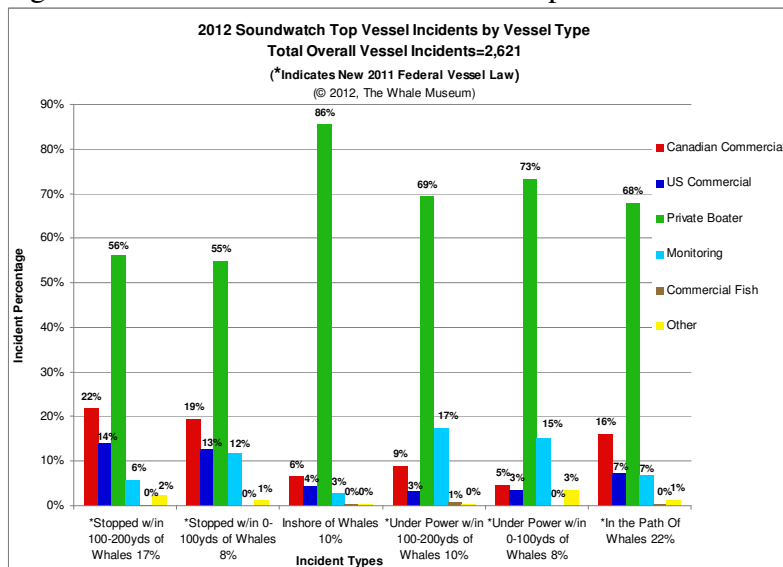


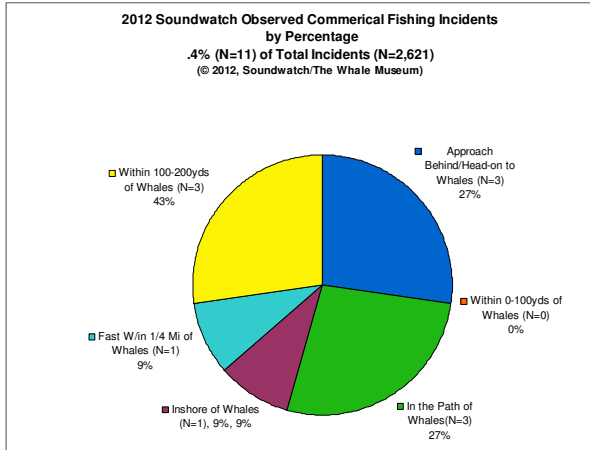
Figure 65: 2012 Soundwatch Observed Top Vessel Incidents by Vessel Type.



Overall in 2012, private vessel operators committed 66% of all incident types, followed by Canadian commercial operators and monitoring vessels (Soundwatch & Straitwatch) with 13% each, and U.S. commercial operators with 8% of all incidents (Figures 64 and 65). Private boaters were once again the number one vessel type committing the majority of top ranked vessel incident types, including *Vessels Stopped within 200 yards of whales vessels*, 0-100 yards 55% and 100-200 yards at 56%; *Vessels Motoring within 200 yards of whales*, 0-100 yards at 73% and 100-200 yards at 69%; *Vessels inshore of whales* at 86%; and *Vessels In the Path* at 68% (Table 7 and Figures 64 and 65). In 2012, Canadian commercial operators were responsible for *Vessels Stopped within 200 yards of whales*, 0-100 yards at 19% and 100-200 yards at 22%; *Vessels Motoring within 200 yards of whales*, also broken down by 0-100 yards at 5% and 100-200 yards at 9%; and *Vessels inshore of whales* at 6%; and *Vessels In the Path* at 16%; U.S. commercial operators were responsible for *Vessels Stopped within 200 yards of whales vessels*, 0-100 yards at 13% and 100-200 yards at 14%; *Vessels Motoring within 200 yards of whales*, also broken down by 0-100 yards at 3% and 100-200 yards at 3%; and *Vessels inshore of whales* at

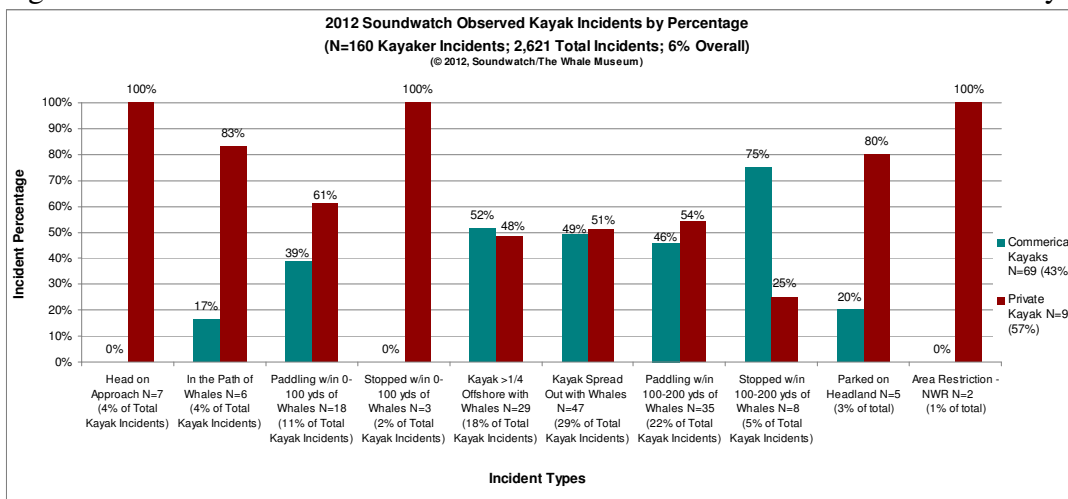
4%; and *Vessels In the Path* at 7% (Table 7 and Figures 64 and 65). In 2012, research and monitoring vessels, including the Soundwatch monitoring vessel were responsible for *Vessels Stopped within 200 yards of whales*, 0-100 yards at 12% and 100-200 yards at 6%; *Vessels Motoring within 200 yards of whales*, also broken down by 0-100 yards at 15% and 100-200 yards at 17%; and *Vessels inshore of whales* at 3%; and *Vessels In the Path* at 7% (Figure 65).

Figure 66: 2012 Soundwatch Observed Commercial Fishing Vessel Incident Percentages.



In the summer months and especially from late August into September, it is not unusual to have commercial fishing openings in areas that overlap with areas frequented by the whales. Commercial and sport fishing vessels as well as the whales are all targeting salmon in areas presumably with the highest concentrations of fish. In 2012, Soundwatch recorded commercial fishing vessels committing 11 incidents, or <1% of overall vessel incidents, which is a reduction from the 21 incidents (1% overall incidents) observed in 2011 or the 55 (5%) in 2010 when a record run of sockeye allowed for extended commercial fishing openings (Figure 64). The <1% observed commercial fishing vessel operator incidents were comprised of 18% *inshore of whales*; 0% *within 0-100 yards of whales*, 27% *within 100-200 yards of whales* which included both transiting and fishing activities; 0% *within one or more of the shoreline restricted zones*; 9% *motoring fast within 400 yards of whales*; 27% *parking in the path of whales*; and 18% *Head-on or Approach from Behind* (Table 7, Figure 66).

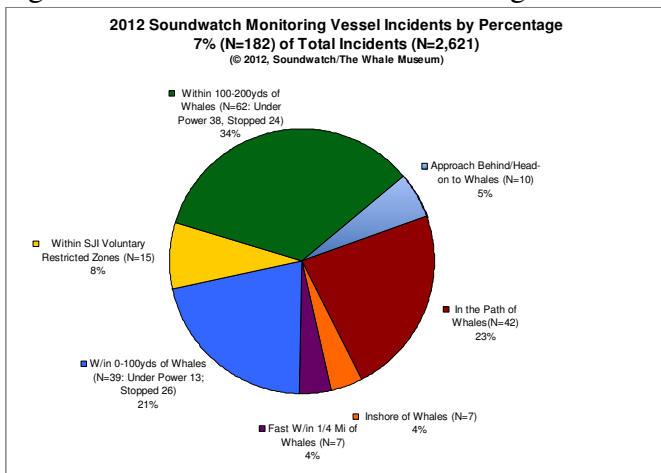
Figure 67: 2012 Soundwatch Vessel-based Observed Commercial and Private Kayaker Incident Percentages.



In the 2012, the vessel-based Soundwatch program observed kayakers making 6% of overall observed incidents (Figure 64). Private and commercial kayaker incident type percentages are shown separately in order to provide a more specific depiction of incidents occurring from kayaker types. The incident categories shown include both the kayaker specific incident categories which include incidents that are guidelines (Kayakers Code Appendix D): *kayaks spread out with whales present, kayakers paddling greater than 1/4 mile offshore with whales, kayakers paddling within 100-200 yards of whales, and kayakers launching into the path of whales* along with other incident types, including Be Whale Wise Guidelines (Appendix A) and/or U.S. federal vessel regulations (Appendix B) not restricted to kayaks.

In 2012, the vessel-based Soundwatch program observed 2,621 vessel incidents, with all kayaker types committing 160 incidents, or 6%, of all incident types (Figure 67). Of the 160 incidents observed, the top incidents included **1-Kayakers Paddling within 100-200 yards of Whales** with 35 incidents or 22%, with commercial kayakers making 46%, and private kayakers making 54% of incidents; **2-Kayakers Not Rafted (or Spread) with Whales** with 47 incidents, or 29%, with commercial kayakers making 49%, and private kayakers making 51% of incidents; **3- Kayakers Paddling with 0-100 yards of Whales** with 18 incidents, or 11%, with commercial kayakers making 39%, and private kayakers making 61% of incidents; **4- Kayakers Offshore greater than 1/4 Mile with Whales** with 29 incidents, or 18%, with commercial kayakers making 52%, and private kayakers making 48% of incidents and **Kayakers Stopped within 100-200 yards of Whales** with 8 incidents, or 5%, with commercial kayakers making 75% of incidents and privates 25%, **5- Kayakers Stopped within 0-100 yards of Whales** with 3 incidents, or 2%, with private kayakers making 100% of incidents and **Kayakers In the Path of Whales** with 6 incidents, or 4%, with commercial kayakers making 17%, and private kayakers making 83%; and **6-Head-on Approach** with 7 incidents, or 4%, with private kayakers making 100% of incidents (Table 7, Figure 67).

Figure 68: 2012 Soundwatch Monitoring Vessel Incident Percentages.



Soundwatch protocol is to be diligent about recording any time when the Soundwatch vessel itself is potentially not in compliance with any guidelines and/or laws. Soundwatch is operating under a NOAA research permit (Permit No. 16160) to conduct its education and monitoring tasks, however, the majority of the time the Soundwatch vessel is far from whales, well over 200-yards or 400-yards ahead. Occasionally the Soundwatch crew finds itself nearer to whales (within 200 or 400 yards) while contacting private vessels. The Soundwatch policy is to record itself every time there is the slightest chance that they were out of compliance with laws or guidelines, and to use laser rangefinders to help verify the distances. It is therefore likely that this is an accurate count of the Soundwatch vessel's vessel incidents, in contrast to other vessel types' vessel incidents that are likely underestimated as Soundwatch staff are often uncertain of the exact distances of other vessels and whales and/or cannot accurately record distances using a laser rangefinder; in these cases when it is not obvious that a

vessel was out of compliance with guidelines or regulations, the incident is not recorded.

In 2012, Soundwatch recorded 181 Soundwatch Monitoring Vessel incidents making up 7% of overall vessel incidents, which is on par with the overall incident percentage committed by U.S. commercial operators and almost half that committed by Canadian commercial operators (Figure 64). The 7% of overall incidents committed by the Soundwatch monitoring and education program vessel crews included a total of 182 incidents. The breakdown of these 182 incidents follows: *Within 100-200 yards of whales* with 62 incidents (underpower 38, stopped 12) or 34% ; *Within 0-100 yards of whales* with 37 incidents (underpower 12, stopped 25) or 20%; *In the path of whales* with 42 incidents or 23%; *inshore of whales* with 25 incidents or 14%; *w/in the San Juan Islands ½ mile & ¼ Mile Voluntary No Go Zones* with 15 incidents or 8%; and *Motoring fast within 400 yards of whales* with 7 incidents or 4% (Table7, Figure 68).

Table 7: 2012 Annual Summary of Vessel Incidents By Incident and Vessel Type.

Soundwatch Observed Vessel Incidents Summary May 4 - September 28, 2012 Observation Hours 306

	Eco Can	Eco US	Private Motor/Sail	Eco Kayak	Private Kayak	Other Type	Aircraft	SW & STW Monitor	Research	Govt	Marine Fishery	Marine Other	Total
Aircraft													
aircraft - low circling							3			1			4
aircraft - low flying							7			1			8
Aircraft							10			2			12
Approach													
non-compliant approach - head on	4		39								2		45
non-compliant approach from behind	2	4	40		7			10			1		64
Approach	6	4	80		7			10			3		110
Area Restriction													
area restriction - Lime Kiln	11	9	34					3					57
area restriction - NWR	7	4	11		2			1					25
area restriction - SJVNBZ (1/4mi)	25	10	106			1		9					151
Area restriction - SJVNBZ (1/8mi)	6	5	38					1					50
Area Restriction	49	29	212		2	1		15					308
In Path													
In path 200-400 yds	89	38	270	1	5			17		1	1		422
Parked in Path			1										1
vessel crossed the path of whales	7	6	139			1		25			2		180
In Path	98	44	410	1	5	1		42		1	3		605
Inshore													
vessel inshore of whales	16	11	214			1		25			2		250
Inshore	16	11	214			1		25			2		250
Kayak Specific													
kayak - 100m/yds				7	9								16
kayak - offshore 1/4mile				15	14								29
kayak - spread out when whales present				23	24								47
kayak - 200y/183m				16	18								34
kayak - parked on headland				1	4								5
Kayak Specific				62	69								131
Speed													
speed > 7knts w/in 400m		2	119					6		2	1		130
speed > 7knts w/in 400m (coming on scene)	3		53					1					57
speed > 7knts w/in 400m (departing scene)		1	10										11
Speed	3	3	182					7		2	1		198
Within 100 m/yds													
vessel within 100m - fishing			7										7
vessel within 100m - stopped	43	28	121		3			25	1				221
vessel within 100m - under power	14	12	63		2			12	1	1			86
Within 100 m/yds	47	32	192		5			37	2	1			316
Within 200m/yds													
200y/183m- fishing			49		1			1					51
200y/183m- stopped	87	56	224	6	2			23		1	1		400
200y/183m- under power	19	7	151					38		1	2		218
Within 200m/yds	106	63	424	6	3			62		2	3		669
Other	15	1	5					1					22
Grand Total	340	187	1719	69	91	3	10	181	2	8	11	0	2621

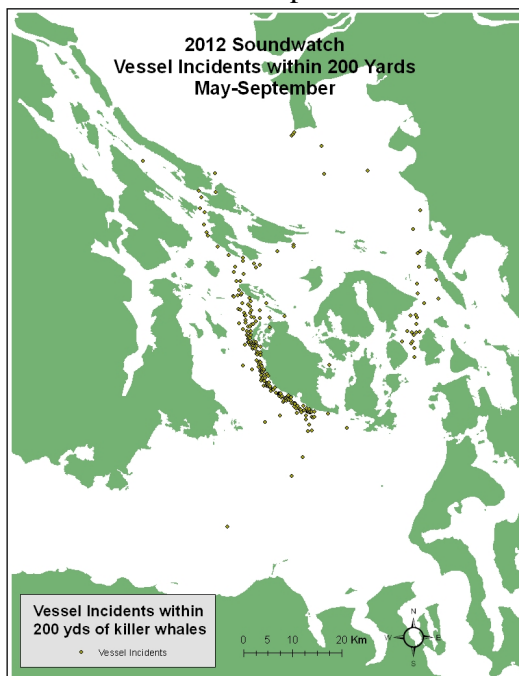
Thursday, December 27, 2012

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In light of new 2011 U.S. federal vessel regulations for killer whales, occurrences of vessels observed to be *Within 0-200 yards of killer whales* or *In the path of killer whales* were plotted (Figures 69 and 70). The only new incidents since 2011 are stopped and underpower within 100-200 yards. As the U.S. federal regulations do not apply to vessel operators in Canadian waters, only guideline vessel incidents are shown in Canadian waters when vessels were either *Within 0-100 yards of killer whales* (Figure 69) or *In the path of killer whales* (Figure 70); in contrast, regulatory vessel incidents are shown in U.S. waters *Within 0-200 yards of killer whales* (Figure 69) or *In the path of killer whales* (Figure 70). There are obvious vessel incident location overlaps with the locations of overall killer whale habitat use and boating activities which are most often recorded in U.S. waters (Figures 3 & 32-34). Soundwatch did not record vessels that were *Within 100-200 yards from killer whales* while in Canadian waters for overall analysis.

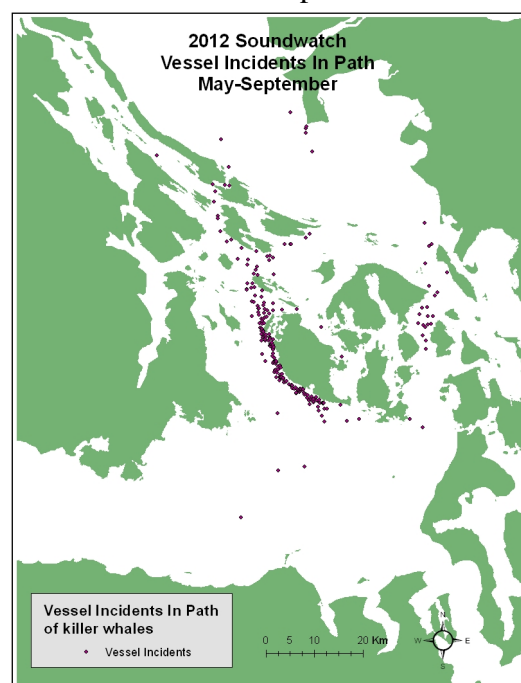
The areas with the most U.S. federal vessel regulation incidents observed by Soundwatch tended to be along the U.S. westside of San Juan Island, outside of a half mile along the U.S. westside of San Juan Island, U.S. North Haro Strait, U.S. San Juan Channel, U.S. South Rosario and Haro Straits, and both guideline and regulation incidents occurring in Swanson Channel & the US/Canadian Boundary Pass area (Figures 69 and 70).

Figure 69: 2012 Soundwatch Observed Vessels **Within 200-yards of Killer Whales* Incidents Location Map.



*US Vessel Laws restricting vessels Within 0-200 yards of a killer whale applies only in U.S. waters. Incidents shown occurring in Canadian waters are 0-100 yards Be Whale Wise Guideline incidents only.

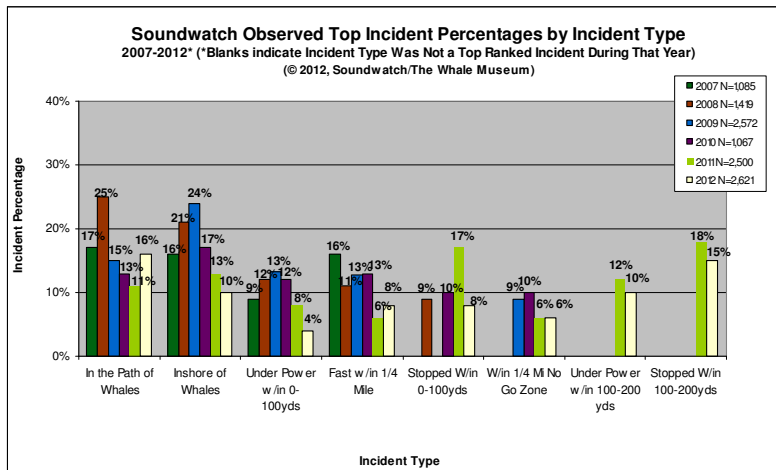
Figure 70: 2012 Soundwatch Observed Vessels **In the Path of Killer Whales* Incidents Location Map.



*US Vessel Laws restricting vessels In the Path 200-400 yards of a killer whale applies only in U.S. waters. Vessel incidents shown occurring in Canadian waters depict Be Whale Wise In the Path Guideline incidents only.

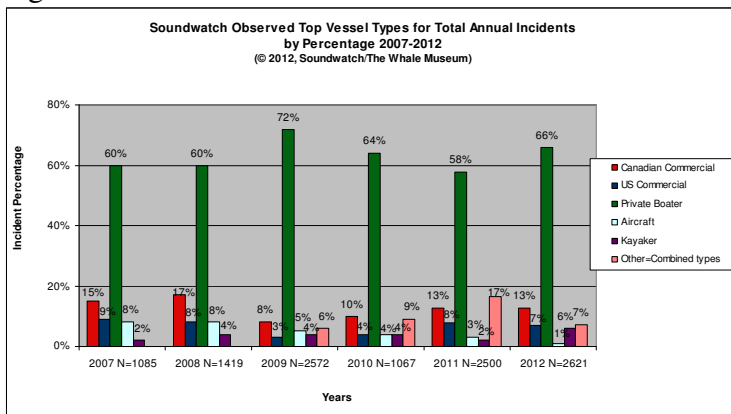
Vessel Incident Trends 2007-2012

Figure 71: 2007-2012 Soundwatch Observed Top Vessel Incident Percentages by Incident Type.



Trends appear in the top vessel incident types from 2007-2012. Soundwatch has consistently observed the same vessel incident types as the majority of the top five most frequent vessel incidents, which include *Vessels in the path of whales*; *Vessels motoring inshore of whales*; *Vessels motoring within 100 yards of whales*; *Vessels motoring fast within 400 yards of whales*; *Vessels motoring within the 1/4 mile voluntary no go zone* and *Vessels stopped within 100 yards of whales* (Figure 71). In 2011, a new vessel incident type was introduced: *Vessels within 200 yards of whales*, this was divided into two main categories 1- *Stopped within 100-200 yards of Whales* and 2-*Motoring(under power)within 100-200-yards of Whales*.

Figure 72: 2007-2012 Soundwatch Observed Vessel Incident Percentages by Top Vessel Type.



Overall trends 2007-12 indicate that private vessel operators are still the most often observed vessel type committing the majority of all incident types (2007 - 60%, 2008 - 60%, 2009 - 72%, 2010 - 64%, 2011 - 58%, 2012 - 66%) followed by a wide margin by Canadian commercial operators (2007 - 15%, 2008 - 17%, 2009 - 8%, 2010 - 10%, 2011 - 13%, 2012 - 13%), U.S. commercial operators (2007 - 9%, 2008 - 8%, 2009 - 3%, 2010 - 4%, 2011 - 8%, 2012 - 7%) (Figure 72). The Soundwatch monitoring program has recorded itself making an increased number of incidents annually over the years 2007-2011 and a reduction in 2012. In addition, Soundwatch has also emerged as an annual top vessel type making the annual top incident types. Since the Washington State vessels laws were put in place in 2008, and new U.S. federal regulations in 2011, Soundwatch staff has been more vigilant about recording every time that the Soundwatch vessel could have possibly been within 400-yards ahead or within 200-yards of whales. In addition, since the new vessel regulations,

Soundwatch staff has also been making a more targeted effort to reach as many boaters as possible before those boaters find themselves motoring closer than 400 yards in the path or within 200 yards in any direction; this has sometime led to more times when the Soundwatch vessel is caught stopped with whales as they are talking with a private vessel. The Whale Museum operated under its own Soundwatch specific NOAA Research permit in 2012. This allows for close approaches in some unavoidable circumstances and these are reported via permit conditions.

Soundwatch Shore-based Kayak Monitoring Scan Data Incident Trends

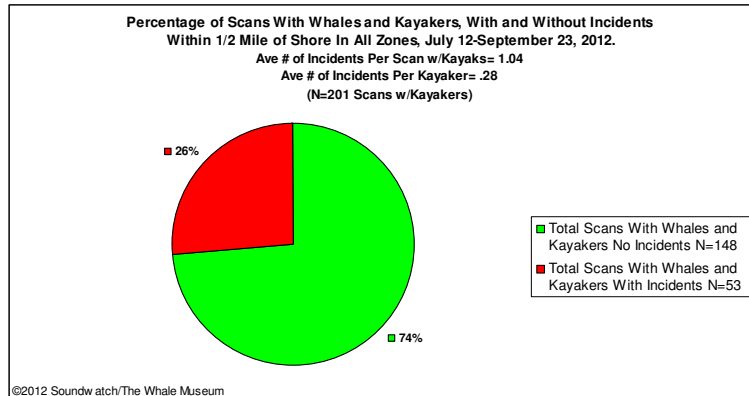
The shore-based kayak monitoring study observed commercial and recreational kayakers to record behaviors that were inconsistent with current best practice guidelines and/or vessel regulations. Using a sub-set of the incident definitions and incident recording protocols that are specific to kayakers; (Appendix O) perceived contradictions of the guidelines and/or laws by kayakers were recorded as *kayak incidents*. A *kayak incident* is specifically defined as an operator of a kayak or other human powered vessel (canoe, rowing vessel, stand-up paddle board, etc.) operating contrary to current voluntary 2012 Be Whale Wise Guidelines, 2012 Kayakers Code of Conduct, and/or federal or state vessel regulations.

This was the third year of the shore-based study focusing on kayaker behaviors around whales. Only a sub-set of the large number of *kayaker incident* variables that were observed and recorded in 2010 were repeated again in 2011 and 2012, thus there is a reduction in the number of 2011 or 2012 figures describing kayaker trends. In 2012, the kayak monitoring effort was expanded from the programs conducted in 2010 and 2011, resulting in more scans and a longer season running July 12 through September 23, 2012.

Based on substantial feedback from the San Juan Island Kayak Association indicating that the 2010 *kayaker incident* data was too confusing and potentially misleading, only *kayaker incidents* that were vessel regulation incidents were recorded and analyzed as a *kayaker incident* in 2011 and 2012. Observations were made and recorded if additional Kayaker Code of Conduct Guidelines (Appendix D) were not being followed at the time a *kayaker incident* was recorded so as to better understand what occurred during the incident. When a kayaker was observed behaving contrary to the U.S. federal vessel regulations for killer whales and recorded as making a *kayaker incident*, observations were also made and recorded if kayakers made adjustments to their course as advised in the Kayaker Code of Conduct Guidelines (Appendix D). Three types of *Kayaker Adjustment* types (Appendix O) were recorded at the same time *kayaker incident* occurred to help evaluate why kayaker vessel regulation incidents may have occurred. The *Kayaker Adjustments* included *Did Not Adjust* (kayaker made no or not enough adjustments to course before becoming within 200 yards of whales or 200-400 yards of the whales' path), *Could Not Adjust* (there was not enough room for a kayaker to adjust further inshore, whales surprised kayakers or whale behavior such as milling prevented adjustments) and *Weather/Conditions Prevented Adjustments* (weather, boat wakes, current, etc., prevented reasonable course adjustments).

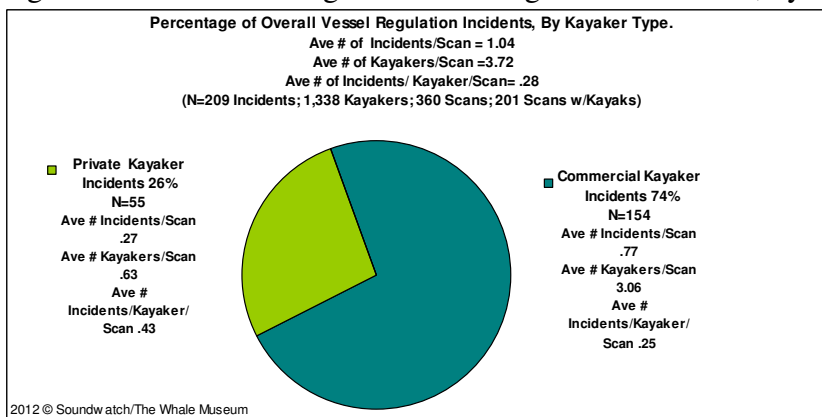
The Soundwatch Kayak Monitoring Program made observations during 10-minute scans of kayakers with whales, within a half mile of shore, in one of six monitoring zones along the westside of San Juan Island, between July 12 and September 23, 2012. There were a total of 360 10-minute scans conducted. The scan observations can be used to look at incident rates per kayaker type, incident type and by zone, as well as counts of kayakers by type with more rigor than the vessel-based, opportunistic Soundwatch observations. Summary statistics were used to analyze kayaker incident data.

Figure 73: 2012 Percentage of Scans with Whales and Kayakers, with and without Incidents.



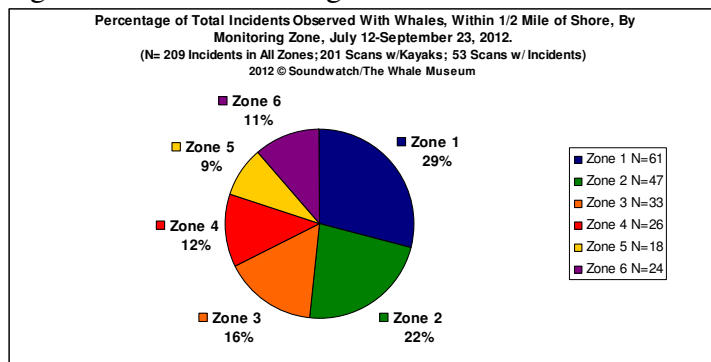
In 2012, 201 out of the 360 10-minute scans had both whales and kayakers present, with an average of 3.72 kayakers per scan (Figure 51). Of those 201 scans with kayakers and whales, no kayaker incidents were recorded the majority of time, 148 out of 201 scans, or 74% of the time; 53 scans had incidents recorded, or 26% of the time (Figure 73). Of the 201 scans with whales and kayakers, with and without incidents, an overall average of 1.04 kayakers incidents were observed, with an individual kayaker (single kayakers or individuals within a group), making an average of 0.28 incidents per 10-minute scan (Figure 73).

Figure 74: 2012 Percentage of Vessel Regulation Incidents, by Kayaker Type.



In the 201 scans with whales and kayakers with kayaker incidents, commercial kayakers made 154 out of the 209 observed kayaker incidents, or 74% of all incidents, with recreational kayakers making 55 of 209 incidents, or 26%. Non-commercial groups and ‘other human powered craft’ were not observed with incidents in the 201 scans (Figure 74). In the 201 scans with kayakers with and without incidents, the average number of commercial kayaker incidents observed per 10-min. scan was 0.77; with an individual kayaker (an individual within a group), making an average of 0.25 incidents per 10-min. scan (Figure 74). In the 201 scans with kayakers with and without incidents, the average number of private kayaker incidents observed per 10-min. scan was 0.27; with an individual kayaker (single kayakers or individuals within a group), making an average of 0.43 incidents per 10-min. scan (Figure 74).

Figure 75: 2012 Percentage of All Incidents Observed with Whales by Monitoring Zone.

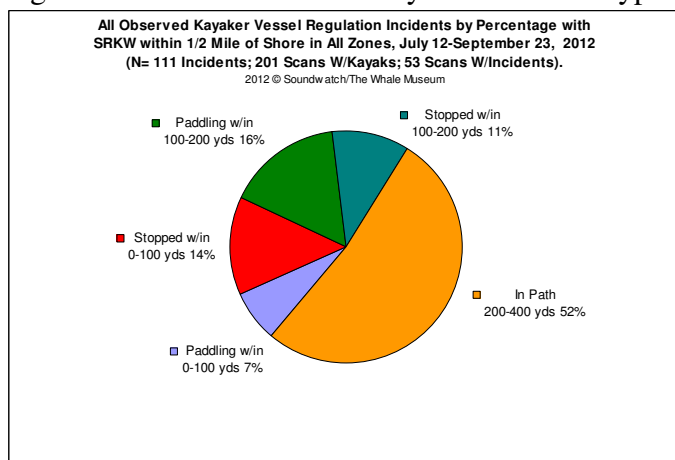


In 201 scans with whales and kayakers 209 kayaker incidents were observed. Zone 1, County Park North, had the greatest number of observed incidents, with 61 or 29% of incidents. Zone 5, Deadmans Bay, had the least number of observed incidents with 18 incidents or 9% of incidents (Figure 75).

Table 9: 2012 Overall All Kayaker Incident Type Totals.

All Observed Kayaker Incidents In All Zones July 12-September 23, 2012 2012 © Soundwatch/The Whale Museum					
Incident Codes & Titles Vessel Regulation Incidents	Incident #	Incident %	Commercial Kayak		Private Kayak
60 2 Paddling w/in 0-100 yds	8	7%	1	1%	7
5 1 Stopped w/in 0-100 yds	15	14%	9	8%	6
60 6 Paddling w/in 100-200 yds	18	16%	11	10%	7
6 1 Stopped w/in 100-200 yds	12	11%	10	9%	2
3 1 In Path 200-400 yds	58	52%	42	38%	16
Total	111	100%	73	66%	38
					34%

Figure 76: 2012 Overall All Kayaker Incident Types by Percentage.



When kayakers were observed behaving contrary to the U.S. federal vessel regulations for killer whales, incident types involving distances 0-200 yards from whales, or 200-400 yards in the path ahead of whales were recorded and the distance between kayakers and whales was measured, and/or estimated, using laser range finders. The new vessel regulations require that all vessels, including kayakers, remain at least 200 yards from killer whales and out of the on-coming path out to 400 yards. Sub-categories of incidents were used to record when kayakers were either stationary (stopped) or moving (paddling) within 0-100 yards of killer whales (previously the less restrictive Be Whale Wise Guideline, also new vessel regulation) or were either stationary

(stopped) or moving (paddling) within 100-200 yards of killer whales (new vessel regulation). There were 111 kayaker vessel regulation incidents observed in 201 scans with kayakers and whales (Table 9). Commercial kayakers were observed making 73 incidents, or 66% of observed incidents; private kayakers 38 incidents at 34% of observed incidents (Table 9, Figures 76-79). The top incident types being **1- Kayakers In the Path of Whales 200-400 yards** at 46% or 58 incidents (commercial kayakers 42 incidents or 58%; private kayakers 16 incidents or 44%); **2- Kayakers Stopped within 100-200-yards of whales** with 21% or 27 incidents (commercial kayakers 42 incidents or 58%; private kayakers 16 incidents or 44%); **3- Kayakers Paddling within 100-200-yards of whales** with 14% or 18 incidents (commercial kayakers 11 incidents or 15%; private kayakers 7 incidents or 19%); **4- Kayakers Stopped within 0-100-yards of whales** with 12% or 15 incidents (commercial kayakers 9 incidents or 12%; private kayakers 6 incidents or 17%); and **5- Kayakers Paddling within 0-100-yards of whales** with 6% or 8 incidents (commercial kayakers 1 incidents or 1%; private kayakers 7 incidents or 19%) (Table 9, Figures 76-79).

Figure 77: 2012 Observed Overall All Incident Types by Kayaker Type Percentage.

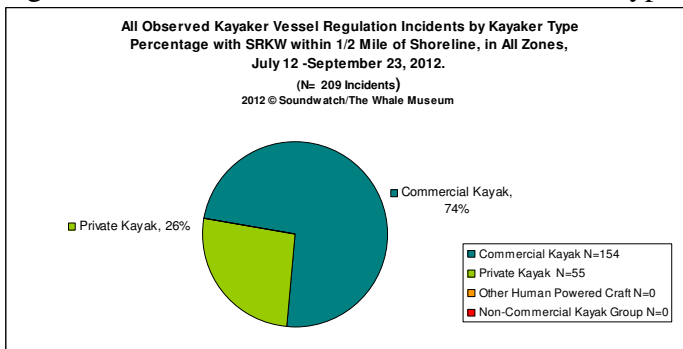


Figure 78: 2012 Observed Overall All Incident Type Percentages by Kayaker Type.

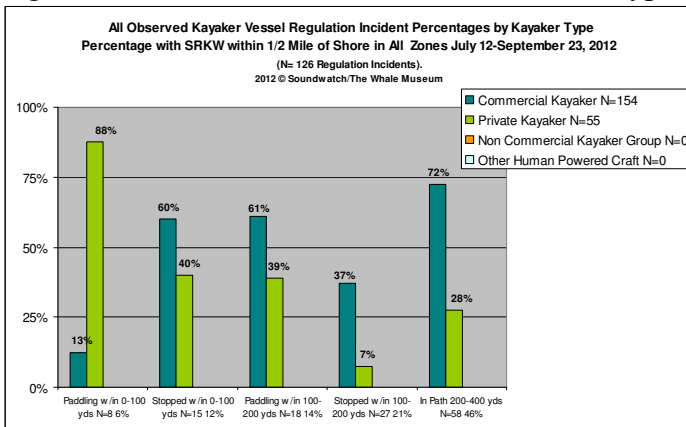
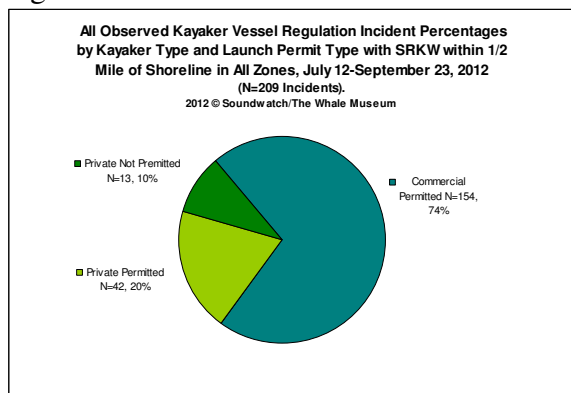


Figure 79: 2012 Overall Observed All Incident Types by Kayaker Type and San Juan County Park Permit Type.



Of the 209 observed kayaker incidents, all of the commercial kayaker incidents, 74% (154 incidents), were committed by permitted commercial companies; of the private kayaker incidents, 20% (42 incidents) were committed by permitted kayakers, while an additional 10% (13 incidents) of incidents committed by unpermitted private kayakers coming from outside of the San Juan County Park launch area (Figure 79).

Figure 80: 2012 All Kayaker Vessel Regulation Incidents Between 0-200 yards by Proximity Distances.

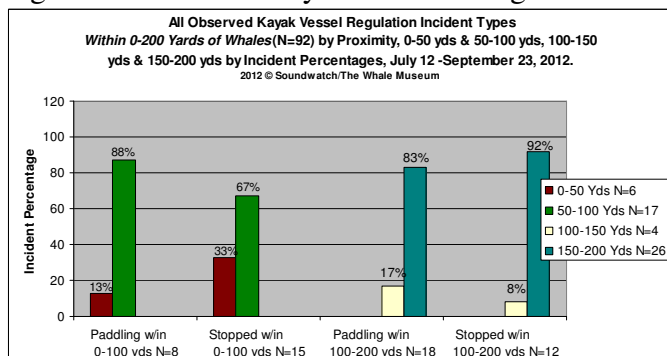


Figure 81: All Commercial Kayaker Vessel Regulation Incidents Between 0-200 yards by Proximity Distances.

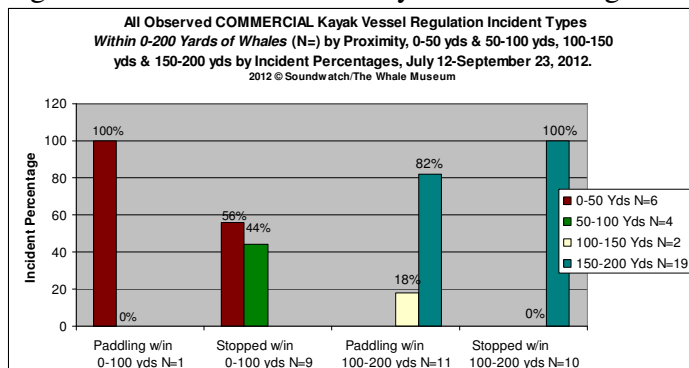
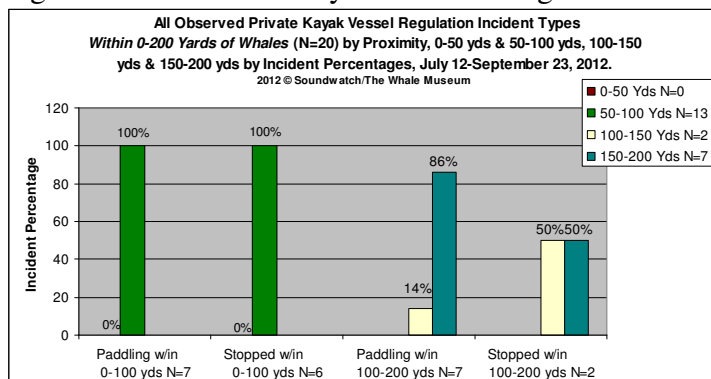


Figure 82: All Private Kayaker Vessel Regulation Incidents Between 0-200 yards by Proximity Distances.



The vessel regulation incident sub-categories were further measured and recorded when kayakers were: 1- paddling or stopped within 0-50 yards; 2- paddling or stopped within 50-100 yards; 3- paddling or stopped within 100-150 yards; and 4- paddling or stopped within 150-200 yards. These distances were differentiated to gain better resolution of the distances that kayaker incidents were actually taking place from whales. Of the 92 observed incidents of *Kayakers within 0-200 yards of Killer Whales* 13% or 12 incidents (10 commercial; 2 private) were determined to be within 0-50 yards; 8% or 7 incidents (7 commercial; 0 private) within 50-100 yards; 25% or 23 incidents (20 commercial; 3 private) within 100-150 yards; and 54% or 50 incidents (35 commercial; 15 private) within 150-200 yards (Figure 80-82).

Figure 83: 2012 All Kayaker Vessel Regulation Incidents with Concurrent Guideline Incidents.

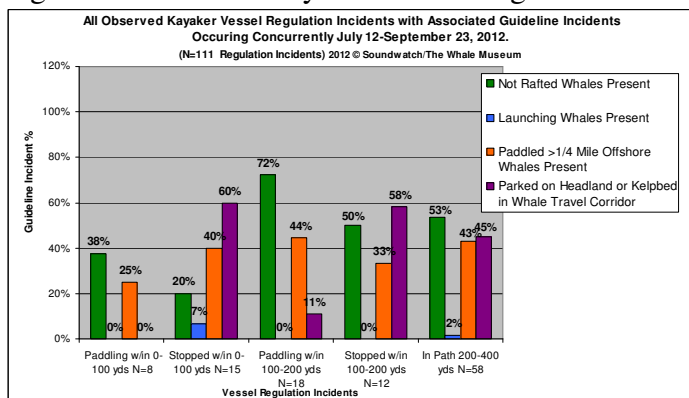


Figure 84: 2012 Commercial Kayaker Vessel Regulation Incidents with Concurrent Guideline Incidents.

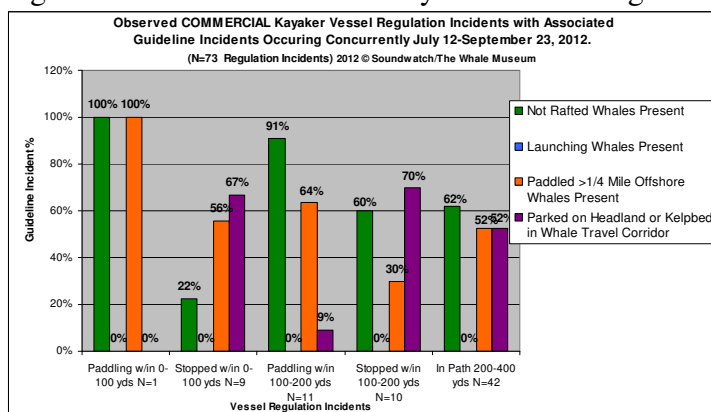
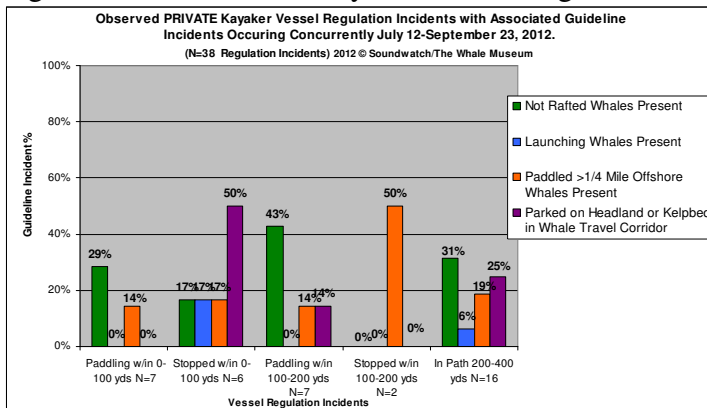


Figure 85: 2012 Private Kayaker Vessel Regulation Incidents with Concurrent Guideline Incidents.



When kayakers were observed behaving contrary to the U.S. federal vessel regulations for killer whales and recorded as making a *vessel incident*, observations were also made and recorded if additional Kayaker Code of Conduct Guidelines (Appendix D) were also not being followed, so as to better understand what was occurring during the time of incident. Four *Kayaker Code of Conduct Guideline* incident types were recorded if they occurred at the same time as a vessel regulation incident; these guideline incidents included *Kayakers Not Rafted when Whales Present*; *Kayakers Launching when Whales Present*; *Kayakers Paddling >1/4 Mile Offshore when Whales Present*; and *Kayakers Parked on a Headland or Kelpbed in Whale Corridor when Whales Present*.

When 111 kayaker vessel regulation incidents (out of the 209 total incidents) were observed, 98 *Kayakers Code of Guideline Incidents* also were observed, including; **1- Stopped within 100-200 yards of Whales** with 47% of observed incidents (commercial kayakers 48 incidents; private kayakers 15 incidents) also had *Parked on a Headland/Kelpbed* occur 14% of the time; *Paddling >1/4 Mile Offshore* 10% of the time and *Not Rafted* 10% of the time; **2- In the Path of Whales** 31% of observed incidents (commercial kayakers 25 incidents; private kayakers 16 incidents) also had *Paddling >1/4 Mile Offshore* 56% of the time; *Parked on a Headland/Kelpbed* 32% of the time; and were also observed *Not Rafted* 32% of the time; **3- Kayakers Stopped within 0-100-yards of whales** at 14% of observed incidents (commercial kayakers 17 incidents; private kayakers 2 incidents) also had kayakers observed *Not Rafted* 5% of the time; **4- Kayakers Paddling within 100-200-yards of whales** at 8% of observed incidents (commercial kayakers 7 incidents; private kayakers 3 incidents) also had kayakers *Not Rafted* 100% of the time, and kayakers *Paddling >1/4 Mile Offshore* 40% of the time; **5- Kayakers Paddling within 0-100-yards of whales** had no observed incidents (Figures 83-85).

During the 201 scans with whales and kayakers when the 111 kayaker vessel regulation incidents were observed, 59% of the time or when 79 incidents occurred (43 commercial incidents, 44% of the time; 36 private incidents, 100% of the time) observations of *Did Not Adjust* were also recorded; 41% of the time or when 54 incidents occurred (54 commercial incidents, of the time; 0 private incidents) observations of *Could Not Adjust* were also recorded; no observations were made when weather or conditions were deemed to have prevented course adjustments (Figures 86-91). It was determined that 100% of the time when commercial kayakers had incidents of *Kayakers Stopped within 0-100-yards of whales* (17 incidents), the kayakers *Could Not Have Adjusted* to prevent the incident; likewise, it was also determined that 100% of the time when commercial kayakers had incidents of *Kayakers Stopped within 100-200-yards of whales* (48 incidents), the kayakers *Could Not Have Adjusted* to prevent the incident (Figures 88 and 89). It was determined that 100% of the time when commercial kayakers had incidents of *Kayakers Paddling within 100-200-yards of whales* (7 incidents) the kayakers *Did Not Adjust* to prevent the incident; as well as 100% of the time when commercial kayakers had

incidents of *In the Path of Whales* (25 incidents) the kayakers *Did Not Adjust* to prevent the incident (Figures 88 and 89). When private kayakers were observed making the 36 vessel regulation incidents, it was determined that 100% of the time they *Did Not Adjust* to prevent the incident (Figures 90 and 91).

Figure 86: 2012 All Kayaker Observed Vessel Regulation Incidents When Adjustments Could Have Been Made Vs. When Adjustments Could Not Have Been Made.

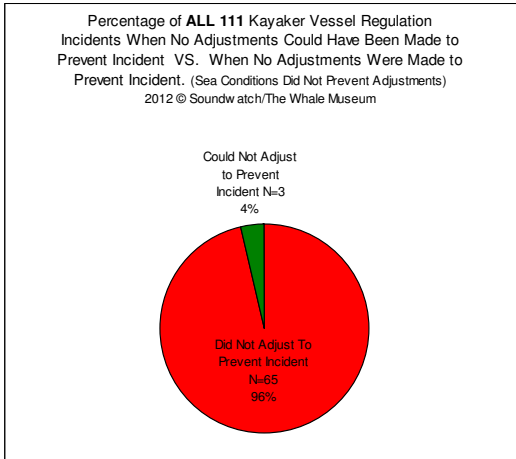


Figure 87: 2012 All Kayaker Observed Vessel Regulation Incidents by Incident Type When Adjustments Could Have been Made Vs. When Adjustments Could Not Have Been Made.

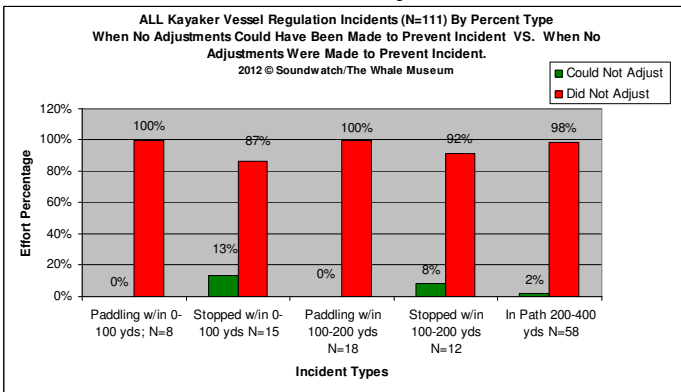


Figure 88: 2012 All Commercial Observed Vessel Regulation Incidents When Adjustments Could Have been Made Vs. When Adjustments Could Not Have Been Made.

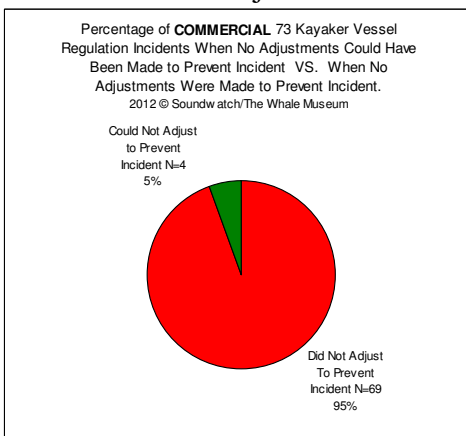


Figure 89: 2012 Commercial Kayaker Observed Vessel Regulation Incidents by Incident Type When Adjustments Could Have been Made Vs. When Adjustments Could Not Have Been Made.

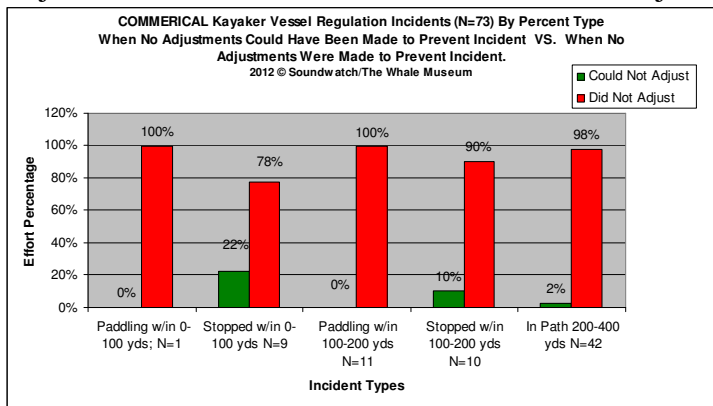


Figure 90: 2012 All Private Kayaker Observed Vessel Regulation Incidents When Adjustments Could Have Been Made Vs. When Adjustments Could Not Have Been Made.

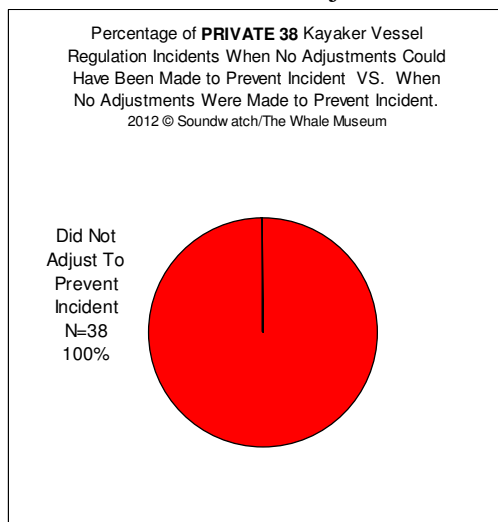


Figure 91: 2012 Private Kayaker Observed Vessel Regulation Incidents by Incident Type When Adjustments Could Have been Made Vs. When Adjustments Could Not Have Been Made.

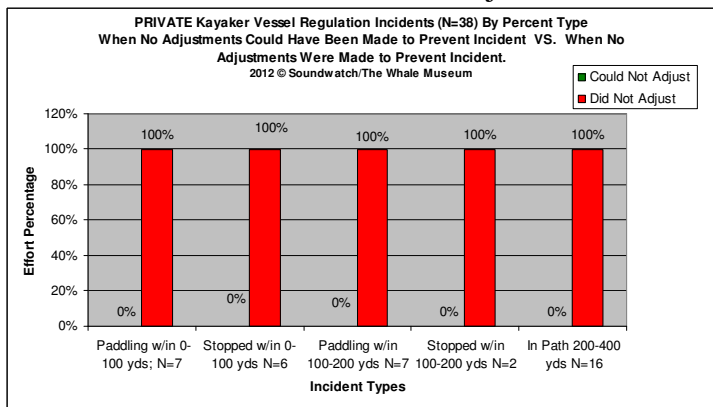
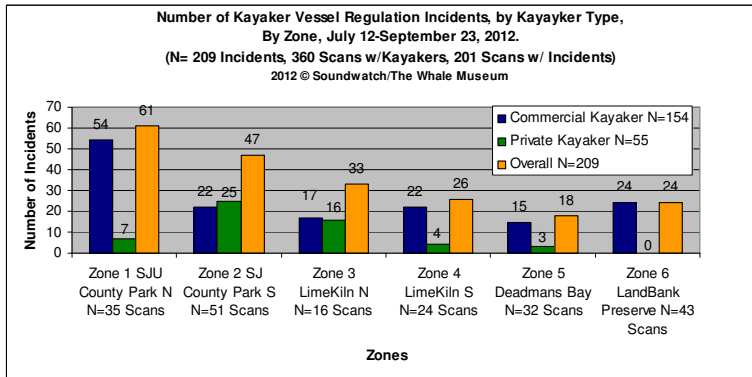
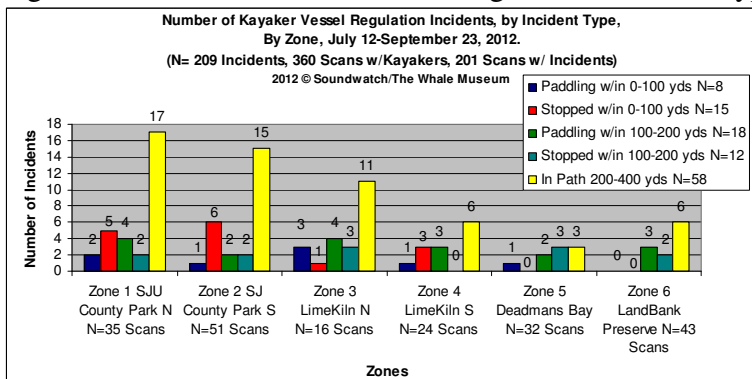


Figure 92: 2012 Vessel Regulation Incident Types, By Kayaker Type by Zone.



In the 201 scans with whales and kayakers with 209 kayaker incidents observed, Zone 1, San Juan County Park North, had the most incidents with 61 incidents or 29% and Zone 5, Deadmans Bay, had the least with 18 incidents or 30% of incidents (Figures 75 and 92). In all zones, except Zone 6, Land Bank Preserve, commercial kayakers made the majority of incidents; in Zone 6 the incident numbers were equal for commercial and private kayakers with each having 24 incidents or 11% of overall incidents. No incidents were observed by non-commercial groups and/or 'other human powered craft' in any of the zones. Of the 29% of all kayaker incidents observed in Zone 1, San Juan County Park North, the majority of incidents were *In the Path of Whales* incidents with 49% or 17 of incidents, followed by *Kayakers Stopped within 0-100 yards of whales* with 5 incidents or 14% (Figure 93).

Figure 93: 2012 Number of Vessel Regulation Incident Types, By Kayaker Type by Zone.



Overall Conclusions

Soundwatch data collected on vessel numbers, types and behaviors around Southern Resident Killer Whales since 1998 and has provided the basis for Soundwatch to characterize annual and long-term vessel-based viewing trends in the Haro Strait region. Soundwatch has provided these findings to the whale watch industry, the public and regional managers. Soundwatch vessel trend data has been used as the primary data source to inform Southern Resident Killer Whale recovery strategies in terms of vessel management decisions as well as aided in the creation and/or implementation of San Juan County, Washington State and 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 vessel and kayak operators, planning for enforcement and monitoring program outreach and monitoring efforts and has been invaluable for adjusting whale watch guidelines and the creation of vessel regulations designed to reduce the risk of vessel impact to whales.

Summary of Soundwatch Data Trends:

Numbers of Vessels Observed With Whale Trends

- The numbers of vessels observed within ½ mile of whales (May-September) varies widely by time, date and location with maximum numbers up to 4 times larger than average numbers (2012 Max. 56, Avg. 17).
- There is a 9-year trend of reduced annual averages and maximum numbers of vessels with whales (1998-2012 Max. 120, Avg. 18). 2012 increased from 2011, however Soundwatch was not on the water for most of June—a month which tends to have fewer number of vessels. **Future analysis:** compare July/August 2011 to July/August 2012 for average vessel count trend.
- Southern Resident Killer Whale group cohesion has changed slightly in recent years. The whales' appear to be travelling in smaller groups that are more spread out, and the various small groups are travelling apart from each other (The Whale Museum, Orca Master Data). This may partially account for the 9-year trend of declining numbers of vessels observed travelling within ½ mile of whales as vessels may not be as concentrated around single groups of whales. **Future analysis:** single versus multiple whale group days.
- Commercial vessels tend to spread out with various groups of whales and are intentionally spending less time with any one group (as part of their voluntary guidelines), thereby reducing the overall commercial vessel average and maximum numbers observed within ½ mile of any one group of whales. This trend may also partially account for the 9-year trend of declining numbers of vessels observed travelling within ½ mile of whales.
- The highest average and maximum numbers of vessels observed within ½ mile of whales occur on weekends, holidays and boating events such as fishing derbies in the summer months (2012 Peak month: July Max. 56).
- Commercial and recreational fishing activities occur in areas that often overlap with whales as well as other vessel transit corridors. In years with large recreational and commercial fishing opportunities (as seen in 2009-2011), vessels observed engaged in 'fishing activities' increase as do vessel incidents associated with recreational and commercial fishing vessels (2011: 15% of vessels observed with whales were commercial fishing vessels, and 23% of all vessels observed with whales were engaged in fishing activities). 2012 saw fewer commercial and tribal fishing opportunities but similar levels of recreational fishing (2012: less than 1% of vessels observed with whales were commercial fishing vessels, and 5% of all vessels observed with whales were engaged in fishing activities).
- Peak times of the day (May-September) observed with the highest number of vessels within ½ mile whales usually occur between 11 a.m. and 4 p.m. during the observation hours of 9 a.m. to 6 p.m.
- Private vessels observed within ½ mile of whales have had higher maximum numbers than commercial vessels from 2003-2009, and again in 2011 and 2012 (Private Max. 60, Commercial Max. 25) with the commercial vessels having a higher max observed in 2010 (38 Max. commercial, 28 Max. private).
- Generally, private recreational boaters spend more time with whales being 'whale oriented' (watching whales) than engaged in 'fishing' or 'transiting'; commercial vessels are most often observed 'whale oriented' and less so 'transiting'.
- Kayaks (commercial and private) have been observed with overall higher maximum numbers within ½ mile of whales than private or commercial motor vessels (2012 Soundwatch Vessel and Shore-based Kayak Observed Max. 29 Kayaks).
- On average (2001-2012) Soundwatch contacted around 1,000 recreational vessels per year with an average of 3.3 people on board each vessel, for an overall average number of 3,300 people given educational materials on the water annually (2012: 525 boat contacts, 1,844 people).
- The majority of boaters (53%) contacted by Soundwatch in 2012 were transiting (as opposed to whale-oriented or fishing, etc.) with the majority, 95%, being new Soundwatch contacts for the 2012 season. Of those contacted in 2012, 59% responded that they were not aware of the guidelines or laws.
- Soundwatch does not have consistent monitoring data on vessel trends before 9 a.m. and after 6 p.m., or during the shoulder season, October-April.

Commercial Whale Watch Industry Trends

- Commercial whale watching occurs April – October with increasing numbers of U.S. & Canadian commercial whale watch vessels going out year-round and/or starting earlier and going later into the season.
- The bulk of commercial whale watching generally occurs between 9 a.m. and 6 p.m., May-September, with the maximum numbers of commercial vessels observed within ½ mile of whales occurring in July (2012 Max. 38) and between 11 a.m. to 1 p.m. and again from 3 p.m. to 4 p.m.; with a reduction in numbers between 12 p.m. and 1 p.m. during trip turn-around periods.
- Commercial whale watching occurs in the evenings with several U.S. & Canadian commercial trips going out again at 5 p.m.-sunset (8:30-9 p.m., July-September).
- For the past twelve years (2000-2012) there have been a similar number of 30-40 active Canadian and U.S. commercial companies (Avg. # of Companies 2000-2012: 38: Avg. # U.S. Companies 17, Avg. # Canadian Companies 21; 2012: # of Commercial Companies 33: 16 Canadian, 17 U.S.).
- For the past twelve years (2000-2012) there have been a similar number of 70-80 active commercial whale watch vessels (Avg. # of Commercial Vessels 2000-2012: 77: 51 Canadian, 26 U.S.; 2012: 76: 54 Canadian, 22 U.S.).
- Since 1997 there have consistently been more active Canadian commercial vessels than active U.S. commercial vessels (2012: 54 Canadian, 22 U.S.).
- Canadian commercial whale watch vessels continue to be mostly the smaller rigid hull inflatable (RHIB) style of vessels while the U.S. fleet is made up of mostly larger passenger style vessels, however recent additions to the fleet have some exceptions.
- The number of relative U.S. and Canadian commercial passengers is estimated to be nearly the same as the smaller Canadian vessels make a greater number of trips per day, per vessel.
- There is a recent trend of Canadian companies adding 1 or more larger, enclosed, passenger-style vessels to their fleet of, on average, 3 vessels per companies (2012 vessel number range: 1-11 vessels/company).
- The more maneuverable, RHIB-style and other smaller, commercial vessels lend themselves to a slightly different whale watching technique than the slower, larger passenger style vessels. Smaller vessels often engage in 'park and wait' sequences ahead of groups of whales, while the larger vessels often engage in 'parallel viewing' travelling alongside of whales. Commercial vessels engaged in the 'park and wait' technique are observed more often committing incidents (primarily '*parked in the path of whales*') than those engaged in parallel viewing.
- The majority of active Canadian and U.S. commercial companies are members of the transboundary Pacific Whale Watch Association (formerly the Whale Watch Operators Association Northwest).
<http://pacificwhalewatch.org/>

KELP & San Juan County Park Vessel Launch 2012 Data

- There were 498 vessel launch permits given to boaters wishing to launch from the County Park launch site (multiple people associated w/each permit).
- KERP Code of Conduct Training was given to 885 people using the vessel launch.
- More than a third of all the permits given (38%) were to Campers, 62% to Non-Campers, at the County Park.
- The majority of permits were day-use permits (53%), followed by multi-day permits (30%) and seasonal permits (17%).
- There were a total of 5,854 recorded vessel launches from the county launch site; 5,356 were commercial kayaks, 498 were recreational vessels.
- Recreational kayaks were the majority recreational vessel type (93%) launched, the remaining were small power boats (5%) and other human-powered small craft (2%).
- The majority of vessels launched were in August (1,792) followed by July (1,754).
- Total number of people using the launching facilities at the San Juan County Park was 9,644 (8,759 commercial kayakers, 885 private boaters).

Vessel Incident Trends

- A new vessel incident category of *Vessels within 200 yards of whales* was added in 2011 which likely increased the overall number of incidents where vessels are closer to whales than previously recorded. The incident category was divided into two main categories 1- Stopped within 200-yards of Whales and 2-Motoring/ fishing within 200-yards of Whales. There were 669 instances of these new incidents being recorded in 2012. Both of these categories were further broken down into sub-categories: Stopped within 0-100-yards of Whales and Stopped within 100-200-yards of Whales; and Motoring/ fishing within 0-100-yards of Whales and Motoring/ fishing within 100-200-yards of Whales to be consistent with the new U.S. vessel regulations that apply in U.S. waters, but not in Canadian waters.
- The old *Parked in the Path of Whales* incident was modified to *In the Path of Whales* which is defined as a vessel 200-400 yards ahead of whales, either motoring, or stopped.
- Soundwatch has observed similar top five vessel incident types (varying order each year) with the new vessel regulation of *being within 200 yards* replacing the previous *within 100 yard* distance guidelines as a top incident type. Top incidents include *vessels parking in the path of whales*; *vessels motoring inshore of whales*; *vessels motoring within 200 yards of whales*; *vessels motoring fast within 400 yards of whales*; and *vessels stopped within 200 yards of whales*.
- Private boaters are the vessel type most often observed committing most of all types of vessel incidents, including the annual top incidents (60% for both years 2007 and 2008, 72% in 2009, 64% in 2010, 58% in 2011, and 66% in 2012).
- Canadian and U.S. commercial operators are observed making fewer overall incidents than private boaters.
- Canadian commercial vessel operators are more likely than U.S. commercial vessel operators to be observed committing incidents (Canadian 15% in 2007, 17% in 2008, 8% in 2009, 10% in 2010, 13% in 2011, and 13% in 2012; U.S. 9% in 2007, 8% in 2008, 3% in 2009, 4% in 2010, 8% in 2011, and 7% in 2012).
- The primary vessel incident type observed committed by commercial whale watch operators is being *in the Path (200-400 yards) of whales*, with the majority being committed by Canadian commercial whale watch operators.
- Annual commercial fishing incidents are similar to previous years (<1% of all incidents 2012).
- Annual commercial and private aircraft numbers and aircraft specific incidents are similar to previous years (<1% of all incidents 2012).
- Annual commercial and private kayak numbers and kayak specific incidents, as well as other incidents committed by kayakers, are similar to previous years. Commercial and private kayakers observed from the Soundwatch vessel, in all areas, accounted for 6% each of all incidents in 2012.
- Annual numbers of the Soundwatch vessel self-reported incidents are increasing (7% of overall incidents in 2012). Soundwatch was granted a NOAA Research and Enhancement Permit No. 16160 in 2012.
- In 2012, 1,590 *vessel incidents* (out of 2,621, or 61%) were observed that were possible violations of the U.S. federal vessel law for killer whales. Of these observations, 316 involved vessels either motoring or stopped within 0-100-yards of whales; 669 involved vessels motoring or stopped within 100-200-yards of whales; with an additional 605 observations of vessels in the on-coming path of whales. These are the primary vessel incident types thought to have the most potential to impact the whales (high speed, close proximity, being in the on-coming path) and have the potential to cause disturbance (behavior changes) that could result in reduced foraging opportunities.

Shore-based Kayak Monitoring Trends

- The average number of kayakers (# of kayaks, not # of people) observed from shore along the westside of San Juan Island was 3, the maximum 29.
- The majority of kayakers observed were commercial (82%), followed by recreational kayakers (17%) and non-commercial groups and 'other human powered craft' (1%).
- Commercial kayakers had greater averages and maximums than recreational kayakers (Commercial Avg. 3, Max. 27, Recreational Avg. 1, Max. 10).
- July was the busiest month in 2012 (Max. 29).
- The area adjacent to the San Juan County Park South had the highest number of kayakers observed (29).

- An average of 3.72 kayakers was observed per 10-minute scan when whales and kayakers were observed along the westside of San Juan Island.
- Of the vessel regulation incident types the majority (57%) were committed by commercial kayakers, followed by recreational kayakers (43%).
- An average of 1.04 incidents was observed per 10-minute scan when whales and kayakers were observed along the westside of San Juan Island; an individual kayaker (single kayakers or individuals within a group), made an average of 0.28 incidents per 10-minute scan.
- The San Juan County Park North area had the most incidents observed (61) and the Deadmans Bay area had the least (18).

Spatial Trends

- There are spatial trends indicating that the whales are seen more often along the westside of San Juan Island than other areas in the core summer range.
- There are spatial trends indicating that the highest concentrations of all vessel types are along the westside of San Juan Island.
- There are spatial trends indicating that the highest concentrations of vessels incident types are along the westside of San Juan Island.
- A large number of vessel types, engaged in a variety of vessel activities, routinely commit a large number and variety of incident types throughout the NOAA designated Summer Core Critical Habitat Areas for Southern Resident Killer Whales, especially along the nearshore corridor on the westside of San Juan Island.

Recommendations


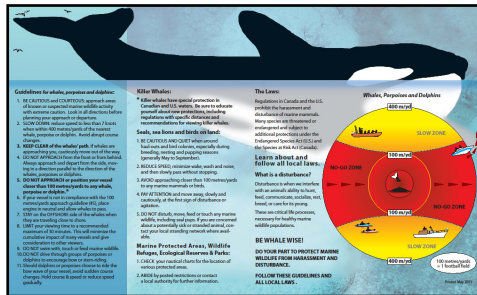
Soundwatch observed vessel trends from 1998-2012 show continued boating pressures and noncompliance with best practice guidelines and vessel regulations for killer whales throughout the Salish Sea, the inland waters of Washington State and British Columbia. Long-term trends demonstrate the need for the continuation and expansion of shore and water-based boater education and outreach efforts as well as an increase in enforcement patrols and enforcement action on the water. Sustainable funding mechanisms for both education and enforcement efforts are critical. In addition, the development and implementation of a collaborative U.S. and Canadian effort to manage both commercial and recreational whale watching as well as other vessel traffic near whales is needed to reduce potential threats to the whales from vessel presence, behavior and underwater noise.

During both the NOAA SRKW Recovery Plan and Proposed Vessel Regulations public input processes, overwhelming support for increased enforcement effort as well as the continuation and expansion of the Soundwatch program was expressed through written and verbal public comments. The Whale Museum and Soundwatch are struggling to secure funding and other resources to continue to consistently collect and analyze this important annual monitoring data. The effort required to collect and analyze this data annually, as well as prevent countless disturbances to endangered whales, is under-valued and in many cases is the only data set available. Continued monitoring remains critical in order to assist in the evaluation of the effectiveness of the guidelines, regulations and enforcement efforts.

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

The Whale Museum staff (Museum Executive Director Jenny Atkinson, Operations Manager Julie Hanks, and Research Curator & Soundwatch Coordinator Eric Eisenhardt) administered grant funds, including accounting and disbursement, from award RA-133F-12-CQ-0057. The Soundwatch Coordinator/driver (Eric Eisenhardt), seasonal Soundwatch driver/educator staff (Nicole Brandt), academic interns (Patrick Charapata, Celsey Duritsa, Kelly Mackarous, Jolyn Tan, and Suzy Roebling) and over 40 regular volunteers were responsible for the outreach, monitoring and data collection activities as well as data entry. Soundwatch staff undertook the bulk of data compilation, assessment and report compilation. Other individuals who made major contributions to the outreach activities, data collection and data analysis include Kayak Monitoring Program Investigators Shannon Buckham and Breanna Walker; help was given from long-term collaborators Johanna Smith (former Soundwatch Program Assistant), John Calogero (Safety Trainer and Former Driver), ; the Straitwatch South Team: Megan Baker, Leah Thorpe, and Bo Garrett; the U.W. Conservation Biology Conservation Canine Program: Jessica Lundin (PI), Elizabeth Seely (dog handler, research assistant), Debbie Giles and Kari Koski (vessel drivers, research assistant; former Soundwatch Director) and interns. GIS Map work was done by The Whale Museum's Research Associate (previous research director), Dr. Jason Wood, Patrick Charapata (TWM's Database Specialist) and the Conservation Canine Program's Elizabeth Seely. We could not begin to conduct such a successful program without the fantastic staff and Board of Directors of The Whale Museum, the vision of the former Soundwatch Program Directors, Rich Osborne and Kari Koski, and the help and dedication of the nearly 600 past and present interns and volunteers who have collectively contributed more than 62,000 volunteer hours to Soundwatch activities since 1996! Special thanks also go the numerous Soundwatch supporters along with the following organizations that help support and collaborate with our efforts: NOAA Fisheries Northwest Region, Northwest Fisheries Science Center, Fisheries and Oceans 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, North Cove Technical Solutions (data-base support), Snug Harbor, Roche Harbor Marine, the Washington Department of Fish and Wildlife ALEA Fund, the Pacific the Whale Watch Association, the San Juan Kayakers Association and the numerous, generous contributions from regional foundations, business and individuals over the years.

With deep gratitude,
THANK YOU!



WHO do the new rules apply to? All commercial and recreational fishers, including those who employ others to harvest their molluscs and/or fish for certain types of fish. Commercial vessels in the coastal waters of Alaska, California, Oregon, Washington, and the U.S. Virgin Islands, and commercial and recreational vessels in the Gulf of Mexico and the waters of the United States are also covered. Recreational fishing that is actively pursued, harvesting, or selling is not covered.

WHAT do the new rules apply to? Except for specific exemptions, all valuable fish any person subject to federal jurisdiction in the United States.

WHAT are the new rules? The new rules:

1. Cause a vessel to stop in the path of any vessel carrying 300 pounds (132 kg) or fewer killer whales.
2. Position a vessel to be in the path of any vessel carrying 300 pounds (132 kg) or fewer killer whales.
3. Position a vessel in any point bearing 400 yards (365 m) or less of the path of any vessel carrying 300 pounds (132 kg) or fewer killer whales.

WHERE do the new rules go into effect? May 14, 2013.

WHERE are the new rules applied? In federal waters, including the coastal waters of Alaska, California, Oregon, Washington, and the U.S. Virgin Islands, and the Gulf of Mexico and the waters of the United States.

WHO did NOAA adopt new regulations? Southern Resident killer whales were listed as endangered in 2002. Several species were identified as one of the "threats." These new regulations implemented an action plan to recover species and were designed to protect all killer whales by reducing impacts from vessel strikes. Additional background information on the rationale and analysis is available at www.nmfs.gov.

Appendix C: 2011 Soundwatch Whale Watching in the Salish Sea Brochure, Folded, Double-sided (Available at <http://www.whalemuseum.org>).

WHOLE WATCHING IN THE SALISH SEA

1. The whale watching season in the Salish Sea is from May 1st to September 30th. This is the best time to see whales because they are most active during this period.

2. The whales that are most commonly seen in the Salish Sea are Humpback whales, Gray whales, and Orcas. Humpback whales are the largest whales in the world and are known for their breaching behavior. Gray whales are the second largest whales and are known for their feeding behavior. Orcas are the smallest whales and are known for their hunting behavior.

3. The best time to see whales is during the day, between 10:00 AM and 4:00 PM. Whales are most active during this time and are more likely to be seen.

4. The best place to see whales is from a boat. A boat allows you to get closer to the whales and see them in their natural habitat. However, it is important to follow the rules of whale watching to ensure the safety of the whales and the environment.

5. The rules of whale watching are as follows:

- Do not approach whales within 100 yards.
- Do not feed whales.
- Do not touch whales.
- Do not use binoculars or other optical devices to look at whales.
- Do not use flash photography.
- Do not use loud music or other loud noises.
- Do not use alcohol or drugs.
- Do not smoke.
- Do not litter.
- Do not use any weapons or explosives.
- Do not use any other dangerous or illegal items.

6. If you see a whale, please report it to the Soundwatch program. You can do this by calling 1-800-562-8832 or by visiting the Soundwatch website at www.whalemuseum.org.

7. The Soundwatch program is a volunteer-based program that monitors whale activity in the Salish Sea. Volunteers are trained to identify whales and to report sightings to the program.

8. The Soundwatch program is a great way to learn about whales and to help protect them. By reporting sightings, you are helping scientists learn more about whale behavior and distribution.

9. The Soundwatch program is a great way to enjoy the Salish Sea and to see some of the most amazing wildlife in the world.

10. The Soundwatch program is a great way to give back to the community and to help protect the environment.

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3. The best time to see whales is during the day, between 10:00 AM and 4:00 PM. Whales are most active during this time and are more likely to be seen.

4. The best place to see whales is from a boat. A boat allows you to get closer to the whales and see them in their natural habitat. However, it is important to follow the rules of whale watching to ensure the safety of the whales and the environment.

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- Do not feed whales.
- Do not touch whales.
- Do not use binoculars or other optical devices to look at whales.
- Do not use flash photography.
- Do not use loud music or other loud noises.
- Do not use alcohol or drugs.
- Do not smoke.
- Do not litter.
- Do not use any weapons or explosives.
- Do not use any other dangerous or illegal items.

6. If you see a whale, please report it to the Soundwatch program. You can do this by calling 1-800-562-8832 or by visiting the Soundwatch website at www.whalemuseum.org.

7. The Soundwatch program is a volunteer-based program that monitors whale activity in the Salish Sea. Volunteers are trained to identify whales and to report sightings to the program.

8. The Soundwatch program is a great way to learn about whales and to help protect them. By reporting sightings, you are helping scientists learn more about whale behavior and distribution.

9. The Soundwatch program is a great way to enjoy the Salish Sea and to see some of the most amazing wildlife in the world.

10. The Soundwatch program is a great way to give back to the community and to help protect the environment.

Appendix D: 2011 Kayaker Code of Conduct Brochure, Folded, Double-sided (Available at <http://www.whalemuseum.org>).

KAYAKER CODE OF CONDUCT

1. The purpose of this code of conduct is to ensure the safety of kayakers and the protection of marine mammals in the Salish Sea. This code of conduct applies to all kayakers who are participating in the Soundwatch program.

2. The Soundwatch program is a volunteer-based program that monitors whale activity in the Salish Sea. Volunteers are trained to identify whales and to report sightings to the program.

3. The Soundwatch program is a great way to learn about whales and to help protect them. By reporting sightings, you are helping scientists learn more about whale behavior and distribution.

4. The Soundwatch program is a great way to enjoy the Salish Sea and to see some of the most amazing wildlife in the world.

5. The Soundwatch program is a great way to give back to the community and to help protect the environment.

6. The Soundwatch program is a great way to learn about whales and to help protect them. By reporting sightings, you are helping scientists learn more about whale behavior and distribution.

7. The Soundwatch program is a great way to enjoy the Salish Sea and to see some of the most amazing wildlife in the world.

8. The Soundwatch program is a great way to give back to the community and to help protect the environment.

9. The Soundwatch program is a great way to learn about whales and to help protect them. By reporting sightings, you are helping scientists learn more about whale behavior and distribution.

10. The Soundwatch program is a great way to enjoy the Salish Sea and to see some of the most amazing wildlife in the world.

SAN JUAN COUNTY MARINE STEWARDSHIP AREA

1. The purpose of this map is to show the boundaries of the San Juan County Marine Stewardship Area. This area is located in the Salish Sea and is home to many marine mammals.

2. The map shows the following areas:

- Marine Biological Reserve
- Voluntary Bottomfish Recovery Zone
- Voluntary Edible Fish Recovery Zone
- Voluntary Motor Boat Exclusion Zone

3. The map also shows the locations of several key features, including:

- San Juan Island
- San Juan County Park
- San Juan County Sheriff's Office
- San Juan County Health Department
- San Juan County Library
- San Juan County Museum
- San Juan County Courthouse
- San Juan County Jail
- San Juan County Police Station
- San Juan County Fire Station
- San Juan County Transfer Station
- San Juan County Landfill
- San Juan County Water Treatment Plant
- San Juan County Sewer Treatment Plant
- San Juan County Solid Waste Transfer Station
- San Juan County Recycling Center
- San Juan County Transfer Station
- San Juan County Landfill
- San Juan County Water Treatment Plant
- San Juan County Sewer Treatment Plant
- San Juan County Solid Waste Transfer Station
- San Juan County Recycling Center

4. The map is a great resource for anyone who is interested in the San Juan County Marine Stewardship Area. It provides a clear and concise overview of the area and its key features.

Appendix E: Soundwatch Data Sheet Vessel Contact.

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

[illegible][illegible]

San Juan County Parks & Recreation <div style="border: 1px solid black; padding: 2px; text-align: center; margin-top: 5px;"> Complete & deposit with payment </div>	<h2 style="margin: 0;">Vessel Launch Permit</h2> <p style="margin: 5px 0;">(May 27-September 5, 2011)</p> <p style="margin: 5px 0;">I have attended the required Vessel Code of Conduct training and am advised of the current laws and guidelines for marine wildlife. In the presence of federally protected killer whales, I will adhere to the laws:</p> <ul style="list-style-type: none"> Do not approach within 200 yards Keep clear of the whales' path Stop engines if unexpectedly within 200 yards of whales <p style="margin: 5px 0;">Add'l guidelines to assist in adhering to the laws:</p> <p style="margin: 5px 0;"><i>Human-powered craft</i></p> <ul style="list-style-type: none"> Move inshore of whales; paddle near shore to keep clear of whales' path; avoid approaching within 200 yards. If unexpectedly approached by whales within 200 yards, stop paddling, group up and remain in shore. <p style="margin: 5px 0;"><i>Motorized & Sailing Vessels</i></p> <ul style="list-style-type: none"> Move offshore of whales to keep clear of whales' path & avoid approaching within 200 yards. Respect the ¼ mile and ½ mile voluntary no go zones <p style="margin: 5px 0;">Respect Marine Protected Areas and</p>
--	--

Date permit issued _____

Permit issued by _____

Primary vessel operator _____

City/ST/Zip _____

Number of people _____* (list on back of flap)

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 returned-San Juan County resident

***Affix colored TAG**

to bow of vessel in clear view.

•Keep Vessel Launch Permit
with you on the water.

Appendix I: Soundwatch Serious Vessel Incident Form.

Date: _____	Start Time: _____	SW Crew: _____
Latitude: _____	End Time: _____	General location: _____
Weather/Cld Over: _____	Seastate: _____	Vessel Type: _____
Vessel ID #: _____	Vessel Name/ Description: _____	
Company Name: _____	Driver's Name: _____	Driver's Description: _____
Reported/ Observed? _____	Observed by: _____	Reported by: _____
Photos? _____ Video? _____		
Description of incident: (Motoring w/in 100, Parked In Path (Whales feeding in travel corridor) Fast near whales, Repeated etc.) Record distance to vessel, vessel to whales, any significant changes in situation.		
Did you previously contact vessel? Yes -> Did you fill out vessel contact log? _____ Vessel contact info: _____		
Did you contact vessel after incident? Yes -> Did you fill out vessel contact log? _____ Vessel contact info: _____		
List of witnesses (include vessel name & operator): _____		
Enforcement Follow-up:		
Date contacted: _____	Method contacted: in person phone email other: _____	Contacted by: _____
Description of Enforcement follow-up (including who you spoke with & their contact info): _____		

Please print out and staple any other written documentation to this report - thank you

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

	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 - SJIVNBZ 1	vessel w/in 1/4mile (440y/402m) of the SJI shoreline in the determined zone with whales present
40.2	area restriction - Lime Kiln	vessel w/in 1/2mile (880y/808m) of shoreline 1mile 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 - SJIVNBZ 2	vessel w/in 1/8mile (220y/201m) of ANY shoreline with whales present
40.7	area restriction - SJI Slow Zone	vessel > 7 knots w/in 1/2mile (880y/808m)SJI/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 2).

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 K: Soundwatch Data Sheet Vessel Incidents.

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 L: Soundwatch Data Sheet Vessel Count/Whale Survey.

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	MD	MY	OTHER	DERIVE
	Pod: J Jp K Kp L Lp T		Vessel Activity?		Whale Count/Min																		
Weekday <input type="checkbox"/>	Sea St.	DIR/NON DIR: N S E W			Fish																		
	Code: CTC TH L LOO SPD SHDGps: do th loo				Transit																		
	From: FUNK LIN NONLIN	Specific Behvs:			Resrch NonWhale																		
Holiday <input type="checkbox"/>	Spd: Mts Sio Med Fst Porp				Enforce Active																		
	BMST: Tvl Rst Mill Sod				Acoustic >1/2mi																		
Boating	Omms:				Other Descp:																		

Appendix M: Soundwatch Whale Survey & Behaviors Codes for Whale Scans.

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
laob	Pacific white-sided dolphin	Lagenorhynchus obliquidens
phvi	harbour seal	Phoca vitulina richardsi
euju	Stellar's sea lion	Eumatopius jubatus
enlu	sea otter	Enhydra lutris
brma	marbled murrelet	Brachyramphus marmoratus
syau	ancient murrelet	Synthliboramphus antiquus
arhe	Pacific great blue heron	Ardea herodias fannini

Common Behaviors		
Spy Hop	Aerial scan	Breach
Half breach	Belly flop	Pec slap
Pec wave	Inverted pec slap	Tail wave
Tail Slap	Inverted tail slap	Tail lift-headstunt
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 N: Soundwatch Marine Conditions & Vessel Codes for Vessel Counts.

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		
MO	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 O: Soundwatch Shore-based Kayak Monitoring Vessel and Incident Codes for Scans.

Kayak Type Code	Description	ZONES / Area Location
EKP	Comm Eco Kayak Permitted	1-San Juan County Park North
EKNP	Comm Eco Kayak Not Permitted	2-San Juan County Park
PKP	Private Kayak Permitted	3-Lime Kiln North
PKNP	Private Kayak Not Permitted	4-Lime Kiln
GHPP	Group Permitted	5-Deadman's Bay
GHNP	Group Not Permitted	6-Land Bank Preserve
OHPCP	Other Human Powered Craft Permitted	
OHPCNP	Other Human Powered Craft Not Permitted	
Tag Color	Don't Need to Record 2011	Kayak Activity
Pink	Day Use	W-Whale Oriented
Orange	Camp/Multi-day	F-Fishing
Green	Seasonal	T-Transiting
NID	Tag Color Not Identified	S-Staging
		O-Other with description
COMMON COMMERCIAL COMPANIES Don't Need to Record 2011		SCAN TYPE
DSK	Discovery Sea Kayaks	FS - Full Scan, 8-10 Minutes
CSK	Crystal Seas Kayaks	PS - Partial Scan, 5-7 Minutes
OO	Outdoor Odysseys	NS- No Scan, < 5 Minutes
SQ	Sea Quest	
SJIO	San Juan Island Outfitters	
SJEX	San Juan Expeditions	
Kayak Regulation Incident Types & Distance 0-50yds A, 50-100yds B, 100-150yds C, 150-200yds D		Adjustment USE ONE
80.2 Paddling w/in 100 yards		D.N.A. Did Not Adjust
5.1 Stopped w/in 100 yards		No or not enough adjustments made before 200yds or 400yds
80.6 Paddling w/in 200 yards		C.N.A. Could Not Adjust
6.1 Stopped w/in 200 yards		Not room inshore to adjust, whales surprised, milling etc.
3.1 In Path 200-400yds (Includes Crossing in Path)		Weather & Conditions
Kayakers Code Incident Types: Record When Regulation Incident Occurred		W weather, wave, currents etc. prevented adjustments
80.1 Not raised when whales present		
80.3 Launching with whales present		
80.4 Paddled offshore > 1/4 Mi, whales present offshore		
80.5 Parked on headland or offshore kelp bed in expected travel corridor		
Record info about Incident, record if photos/video taken to go back to later, etc.		

Appendix P: Soundwatch Shore-based Kayak Monitoring Whale Survey & Behavior Codes for Scans.

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
basac	minke whale	Balaenoptera acutorostrata
phvi	harbour seal	Phoca vitulina richardsi

Common Behaviors/Overall Behavior State		
Spy Hop	Aerial scan	Breach
Half breach	Belly flop	Pec slap
Pec wave	Inverted pec slap	Tail wave
Tail Slap	Inverted tail slap	Tail lift-headstunt
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	Milling
Tail-Lob	Sharking	Other-describe:
Fast Non-Directional	Long-dives	
Behavior States: TRAVEL REST MILL SOCIALIZE		

Sea State	Effect of Combined Wind And Currents on Sea State
0	like a mirror (flat)
1	small waves 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	long waves up, white foam breaking crests 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

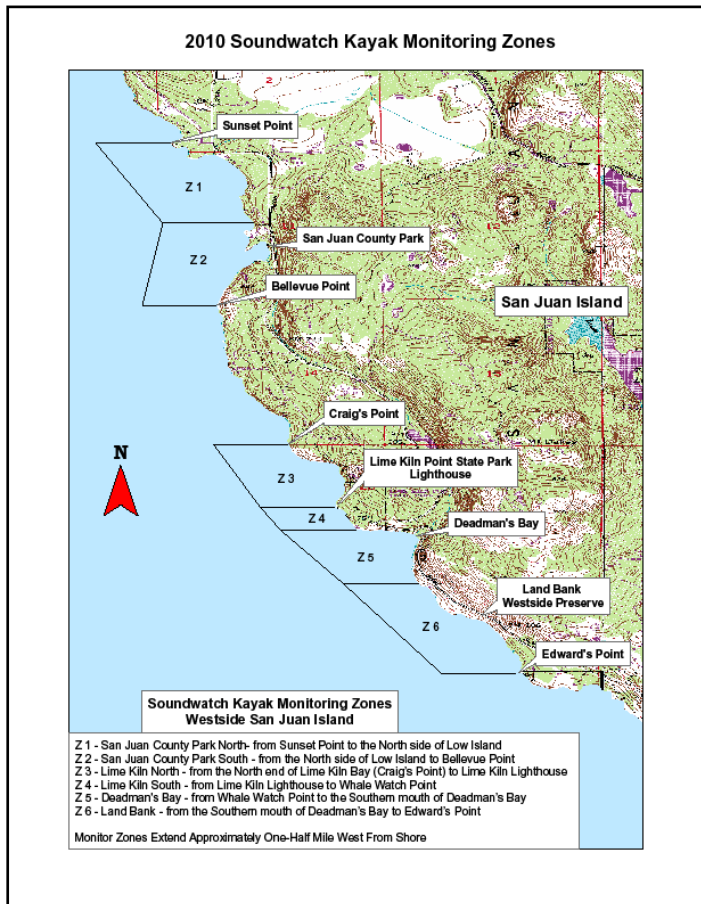
Formation (Overall Group)	
Flank: side-to-side-to-side	
Linear: head-to-tail	
Non-linear: no particular orientation within group	

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 Q: Soundwatch Shore-based Kayak Monitoring Zone Locations.



Appendix R: Soundwatch Shore-based Kayak Monitoring Data Sheet Vessel Count/Whale Survey.

Date:	Time:	< 1/4 Mi	1/4 to 1/2 Mi	> 1/2 Mi	Total Count:	Total EK:	Total PK:	Scan: FS PS NS	Incidents: Y N					
Crew:	ZONE 1-6:	Weather	Sea State	Visibility	K Type & Activity	EK PERMIT	EK NO PERMIT	PK PERMIT	PK NO PERMIT	GRP PERMIT	GRP NO PERMIT	OHPC PERMIT	OHPC NO PERMIT	OTHER
POD/SPECIES: J J P K KP L LP T OTHER:					#									
CONFRG: CTC THT LOO SPRD SPRD GRPS= ctc tht loo					Whale									
NON or DIR: N S E W					Transit									
FORMATION: FLANK LINEAR NONLINEAR					Fish									
SPEED: Motionless Slow Medium Fast Porpoising					Staging									
BEHAVIOR STATE: TRAVEL REST MILLING SOCIALIZE					Other									
OTHER BEHAVIORS:					DESCRIBE OTHERS:									
COMMENTS:														

Appendix S: Soundwatch Shore-based Kayak Monitoring Data Sheet Vessel Incident.

Date & Time	Zone 1-6	KYK Type & Act	INDV OR GRP	# of kayaks w/ Incidents	Regulation Incidents 0-50 Yds A 50-100 Yds B 100-150 Yds C 150-200 Yds D Circle all that apply	D.N.A.	C.N.A.	Weather	Kayakers Code of Conduct Incidents Occurred with Regulation Incident Circle all that apply	FS PS NS	Photo/Video?	Comments
1 2 3 4 5 6	EKP EKN PKP PKN GRPP GRPN OHPCP OHPCN	INDV GRP GRP GRP OHPCN			60.2 Paddle 100 A 5.1 Stopped 100 B 60.6 Paddle 200 C 6.1 Stopped 200 D 3.1 In Path				60.1 Not rafted 60.3 Launched 60.4 > 1/4 w/whales 60.5 Path Kelp or headland	FS PS NS		

Appendix T: Soundwatch L-90 Monitoring Sheet.

Date	Time	Lat	Long	Location Name:	Distance:	Dir:	Sea State:	Weather:	Visibility:
Left or Right ID Photos #s:			Head/Melon Photo #s:		Body / Back Photo #s:		Peduncle Photo #s:		Surfacing Photos #s:
Video Tape Logging, Respirations, Surfacing w/ Engine OFF if possible. Please Describe What Filmed and Tape #s:									
Other Individuals in Area? ID & Photos:			If With Others: Configuration: CTC THT LOO SPRD			Group Formation: FLNK LIN NONLIN		Est Distance to nearest Group?	
Travel DIR or NON ? N S E W			Travel Speed: Mnlis Slo Med Fst Porp Estimate Spd in Knts:				Overall Behavior State: Trvl Rst Mill Soci		
Observation of # Respirations, Dive Time, Behaviors Start Time: End Time: Observation Total Time:									
# of Surfacing/Respirations per 5 Minutes					Respiration/Surface Times:				
# of Surfacing/Respirations per 5 Minutes					Respiration/Surface Times:				
# of Surfacing/Respirations per 5 Minutes					Respiration/Surface Times:				
Observed Behaviors CHOOSE FROM BEHAVIOR LIST or DESCRIBE OTHERS:									
OTHER NOTES, Please Record Times Closer than 100 yards, if any samples were collected e.g.:									
CREW & PLATFORM:									