This memorandum recapitulates the presentations and discussions from NOAA Fisheries’ March 28, 2013 Killer Whale Protection Workshop held in Roche Harbor, San Juan Island, Washington. The focus of the workshop was vessel regulations in Puget Sound for the protection of the Southern Resident killer whales. The workshop was open to the public. Participants included whale watch operators, state and local government officials and resource managers, researchers, and representatives from stewardship organizations and conservation groups. The topics included monitoring and boater education efforts, enforcement activities, and economic and industry information related to the vessel regulations. In addition to reviewing these topics for the participants, the purpose of the workshop was to provide a forum for stakeholder input to explore next steps for addressing vessel effects on killer whales.

This memorandum first provides an overview of the key discussion points and feedback for NOAA Fisheries from the workshop. It then provides a chronological summary of the presentations and follow-on discussions.

SECTION 1 SUMMARY OF KEY DISCUSSION POINTS

Throughout the workshop a number of issues were raised repeatedly and stand out as key concerns with respect to killer whale protective regulations. Exhibit 1 distills the key issues and questions raised, as well as feedback from the participants with respect to addressing these issues. The presentations and discussions are then presented in further detail in Section 2.

EXHIBIT 1. KEY ISSUES AND FEEDBACK

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| **INCREASE ENFORCEMENT:** Participants expressed concern that NOAA developed regulations for which there are limited resources for effective enforcement. | • **Presence on the water is the key:** A well-marked enforcement vessel from June through September would make a big difference and target private boaters, which are the real issue with respect to non-compliance.  
• **Focus on addressing egregious offenses:** There should be less time spent on monitoring the number of incidents of non-adherence to guidelines and regulations and more time focused on addressing egregious offenses.  
• **Collaborate with whale watchers and the public:** The WDFW indicated that there has been success with citizen help in enforcement. The |
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<td>agency has received photos and videos from the public and followed up on these cases. Officer observation is best, but if citizens have evidence (e.g., video), the officers can investigate citizen-reported infractions.</td>
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- **Ensure that enforcement actions are widely broadcast:** Consider press releases about the level of enforcement.
- **Consider the penalty:** The amount of the penalty may affect compliance. A greater probability of incurring a smaller fine may have a greater impact on compliance than a low probability of a large fine.
- **Consider shore-based enforcement:** It may be less expensive than on-water enforcement. Certified, qualified officers would be required to recognize infractions from the shore.

<table>
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<th>INCREASE EDUCATION AND OUTREACH:</th>
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<td>Participants suggested it would be premature for NOAA to develop additional regulations until everybody is aware of the existing regulations and guidelines, and NOAA can determine if they are being effective.</td>
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- **Distribute informational materials more broadly:** Consider local kayaking organizations, etc. In addition, there is the need for another printing of the Be Whale Wise Guidelines for 2013.
- **Incorporate information in boater safety training:** The nature of the existing killer whale protective regulations and guidelines should be incorporated into boater safety training and license requirements. San Juan County tries to do this but it should be incorporated more broadly. Washington State Parks administers the program and most people complete the course online. Deputy Sheriff Crowe committed to reaching out to the State Parks Department to see what could be done about getting the information included in the licensing curriculum.
- **Soundwatch and Whale Watch Industry partnering:** With limited resources, it is difficult for Soundwatch to decide between spending more time on the water, or on shore disseminating information. One whale watch operator noted that he has offered empty seats on his trips to Soundwatch monitors so they can get out on the water more, and he is happy to continue to do that.
- **Consider Whale Watch Industry funding:** Whale Watch operators may consider a “stewardship tax” on tickets dedicated to outreach and education. Some companies do this already, but region-wide implementation would be more effective.
- **Target private boaters:** Private boaters are the main problem with respect to noncompliance. Private boaters are also associated with the most egregious offenses. Education and outreach should be focused on these boaters, for example at private docks and marinas.

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<th>IMPROVE UNDERSTANDING OF EFFICACY OF EXISTING REGULATIONS:</th>
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<td>Participants suggested that NOAA has limited understanding of the effectiveness of the current regulations and that understanding whether and how the whales are benefitting should be paramount.</td>
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- **Soundwatch data are currently inconclusive regarding effect of the regulations on compliance:** The number of total incidents of non-adherence to the guidelines/regulations observed per hour increased in 2011 and 2012 (the years post regulation). It is difficult to say anything definitively about the effect of the regulations on behavior with the limited data available, however, without controlling for external factors and increasing education about the existence of the regulations.
- **Need to focus on the effect of the regulation on whale behavior and population level:** The appropriate measure of the effectiveness of the regulation is not extent of compliance or non-compliance but the changes in behavior or number of killer whales. NOAA should focus on evaluating this.
- **Gather additional economic data on effects:** The RIR indicates that existing research is insufficient to quantify the extent to which the
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<td>regulations have changed or will change decisions to participate in whale watching. These data are needed to understand the negative effects of these regulations.</td>
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| IDENTIFY OPPORTUNITIES FOR ADDITIONAL PROTECTIVE MEASURES OUTSIDE OF NEW REGULATIONS: Whale watch operator participants indicated they were not supportive of a regulated No Go Zone but suggested there were other protection opportunities for NOAA to consider. | - Extend voluntary No Go Zone to other vessels: The whale watching industry currently has in place additional voluntary guidelines for killer whale protection, including a No Go Zone a quarter mile around the west side of San Juan Island. This could be extended to other vessel types (private boaters, fishing boats) perhaps by incorporating it into the Be Whale Wise Guidelines.  
- Shut off engines when whales are passing: A participant stated that this used to be common practice but now vessels need to be constantly moving to try to get away from whales so they are not out of compliance with the approach and park-in-path regulation. Participants suggested that the regulations may therefore have the confounding effect of increasing vessel noise. NOAA should consider requiring engines be shut off when whales are present rather than the current regulations. |
| IMPROVE ANALYSIS OF THE REGIONAL ECONOMIC VALUE OF THE COMMERCIAL WHALE WATCHING INDUSTRY AND ECONOMIC IMPACT TO THE INDUSTRY OF THE REGULATIONS: The RIR underestimates the value of whale watching activity to the regional economy. In addition, it underestimates the effect of the regulations on whale watching. | - Analysis underestimates spending per whale watching trip participant: The assumption that individuals spend $145 in the regional economy per whale watching trip is very low. Participants suggested this could be thousands of dollars per trip. Furthermore, the regional economic value of the industry estimated at $13.8 million is an underestimate.  
- Revisit method of calculating affected individuals: The RIR should not assume that the only individuals that are affected are those who were not adhering to the guidelines. All individuals engaged in whale watching are affected by these regulations.  
- NMFS needs more information on the economic impacts of the regulations: The RIR states that data are not available to quantify impacts to whale watching of the regulations. In particular, data are needed to determine how the regulations affect individual’s decisions regarding whether to participate in whale watching. NOAA needs this information to compare impacts against the potential benefits of the regulation. The whale watching industry may have some data that they can provide (e.g., annual revenues and ridership over time) if they can do so anonymously. |
| FOCUS ON SALMON CONSERVATION: Participants suggested that salmon conservation is the key issue with respect to killer whale protection and not vessel traffic. | - Whale watch companies partnering on salmon restoration: Whale watch companies would be interested in supporting salmon research and would like to hear from NOAA about ongoing or needed projects. |
I. WELCOME AND INTRODUCTIONS - BROCK BERNSTEIN, WORKSHOP FACILITATOR
Dr. Bernstein provided a brief overview of the purpose and objectives of the workshop. The agenda was organized into three sets of presentations by topic, with time allotted for discussion in between. Individuals could also ask questions following each presentation, as time allowed.

II. REVIEW CURRENT REGULATIONS, GUIDELINES, AND ASSOCIATED ANALYSES - LYNNE BARRE, NOAA FISHERIES
Ms. Barre presented background information on the status of killer whales in Puget Sound, including the regulatory history and ongoing and future conservation and recovery efforts.

A. Presentation Notes
Ms. Barre first provided an overview of the regulatory history and conservation for the Southern Residents, as follows:

- **Listed as endangered in November 2005** – Listing factors included: prey availability (endangered salmon); pollution and contaminants accumulation; vessel traffic and sound; and, to a lesser extent, oil spills and small population size.

- **Recovery Plan completed in 2008** – The Recovery Plan established a broad approach to address all threats, noting that data gaps still exist with respect to threats and conservation needs. NOAA Fisheries will evaluate and incorporate new research as it becomes available. Recovery actions within the current plan include minimizing disturbance from vessels by:
  - Monitoring vessel activity;
  - Continuing to evaluate and improve upon voluntary guidelines; and
  - Evaluating the need for regulations or vessel restrictions.

- **Voluntary guidelines** – Voluntary guidelines for killer whale conservation include:
  - Be Whale Wise (updated in 2011);
  - KELP for kayakers;
  - San Juan County (SJC) Marine Stewardship area, which includes a “whale watch exclusion zone”; and
  - Aircraft – avoid flying lower than 1000 feet or circling over marine mammals.

NOAA Fisheries is undertaking a multipronged approach to address the various activity threats to the killer whales. The focus of the 2011 regulations and this meeting is the threat from vessel traffic. The timeline for existing protective regulations was as follows:

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1 This memorandum integrates notes taken during the workshop by Jennifer Kassakian and Maura Flight (IEc) and Kristy Long (NOAA Fisheries).
- **March 2007** – Advanced Notice of Proposed Rulemaking: scoping the issue, finding out what regulations might be appropriate, holding public meetings, considering public input

- **2007 San Juan County ordinance** - 100 yard approach

- **2008 WA State Law** - mirrored SJC approach ordinance

- **July 2009** – NOAA Proposed Rule for vessel traffic regulations

- **April 2011** - NOAA Final Rule for vessel traffic regulations under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA); the regulations establish an approach distance of 200 yards and prohibit vessels from parking in the path of whales

- **2012 Washington State Regulations** – State approach regulation revised to match the 2011 NOAA 200-yard approach regulation

Prior to the 2011 vessel traffic regulations, the primary protections for the whales in the Sound were those offered by MMPA and ESA (include no take), and the Be Whale Wise Guidelines. Based on monitoring data, while many vessels were complying with the Guidelines, many were not. This, combined with research indicating that impacts from vessel traffic negatively impacts the whales, led NOAA Fisheries to conclude that current protections were not adequate.

Ms. Barre summarized NOAA’s approach to developing the April 2011 Puget Sound Vessel Traffic Regulations. As part of an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA), NOAA considered a suite of alternatives for the vessel traffic regulations, including multiple approach distances, no-go zone areas, as well as vessel speed limits, prohibitions on parking in the path of whales, and a no action alternative (no change from existing regulations). The EA considered impacts of the regulations on the whales and on the economy.

The regulations pertain to the inland waters of Washington (similar to designated critical habitat) and to all killer whales in the area (as boaters are not able to distinguish between types of killer whales). The regulations pertain to all vessels regardless of size that spend time in close proximity to whales (although some exceptions apply). The rulemaking authorities are section 112(a) of the MMPA and section 11(f) of the ESA.

Ultimately the final regulations incorporated a 200-yard approach limit, and prohibitions on positioning vessels in path of whales to 400 yards. Ms. Barre reviewed the scientific basis for the final regulation, describing that behavioral disturbance has been documented from vessels at 100 yards and between 200 and 400 yards, including changes in swimming patterns, increases in surface activity/behaviors, and reductions in time spent foraging. Research has established acoustic effects of vessels on the whales. Vessel strikes, though rare, are also a concern.

The benefits of the vessel traffic regulations are increased fitness of the whales; both the approach and park-in-path restrictions are likely to reduce all of the vessel threats NOAA identified, including reduced behavioral impacts, reduced making impacts, and reduced risk of vessel strike.

NOAA also worked with Industrial Economics (IEc) on an analysis of the costs of the regulations. The analysis considered potential costs to different groups of boaters. The analysis considered that the increased viewing distance for whale watching may reduce enjoyment and willingness-to-pay for participation in whale watching. The regulation may also increase costs to the whale watching industry.
for investments to mitigate any negative effects of the increased distance from whales on the whale watching experience (e.g., shifting to larger vessels). The analysis indicated that the regulatory alternatives that were ultimately selected maintained the opportunity for whale watching, while increasing recovery potential for the whales.

NOAA weighed the benefits of the regulations against the potential costs. Ultimately, the combination of the approach and keep clear of path regulations benefit the whales and support the long-term sustainability of whale watching. The tradeoff for the economic and recreation costs is the increased chance of recovery for the whales.

Ms. Barre closed with a description of the following ongoing efforts and next steps:

- **No Go Zone Evaluation** - The Final Rule did not incorporate a No Go Zone because of the volume of comments received with respect to this element. In the Final Rule, NOAA Fisheries committed to analyzing further the possibility of a No Go Zone regulation. As part of this, NOAA is summarizing the No Go Zone alternatives submitted during the public comment period on the proposed rule (70 suggestions were submitted) and gathering new research on how to design a protected area.

- **Education and Outreach** - NOAA Fisheries is also working on education and outreach with respect to the new regulations, working with Soundwatch (US monitoring organization) and Straitwatch (Canadian monitoring organization), the Washington Department of Fish and Wildlife (WDFW), and the Department of Fisheries and Oceans in Canada (DFO). The Be Whale Wise Guidelines have been updated and include an insert on the new regulations.

- **Enforcement** - NOAA Fisheries has also established a joint enforcement agreement with WDFW, although focus is more on outreach to ensure people are aware of the regulations. NOAA has also committed to community engagement in the regulatory process, including hosting this workshop.

- **Monitoring** – NOAA Fisheries is monitoring the effectiveness of the regulations to determine whether the expected impacts (positive and negative) are being realized and whether the regulations are being effective. This includes collecting data on vessel activity/compliance and economic impacts (were the assumptions correct? were there impacts NOAA didn’t anticipate?).

- **Establishing Partnership** – NOAA Fisheries is coordinating with Canada and exploring partnerships, especially following up on offers for assistance, coordination, and data sharing. NOAA is also participating in other efforts for marine protection such as Puget Sound Partnership Marine Protection Workshop.

### B. Comments and Questions

**Ken Balcomb (Center for Whale Research (CWR)):** Years ago CWR was asked by the Federal government to count whales. They found that there were lots of fishing vessels and that the locations of these vessels were hot spots for whales. You could predict where whales were going to go based where

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2 This memorandum provides commenters names and organizations where possible but otherwise references “commenters” or “participants” generally.
the boats were. From 1976 to 1982 the whales went to Seattle once a month, and to every Seafair. There were hydrofoils, military boats, sportfishing boats, etc. and whales went there.

A WDFW report says that in the 1970s and 1980s, millions of pounds of Chinook were taken out of Puget Sound each year. Then the patterns of the whales changed. They didn’t care about the boats. Now salmon are endangered and there are managers trying to recover them with harvest regimes. Recovery is slow and the whales evolved on this prey.

The commenter appreciates efforts to be respectful to whales to promote recovery, but the whales are not recovering and are an important, iconic species. The whale watch community has done its fair share and been proactive in respecting whales. We should all get behind wild salmon recovery and take the fish farms out of the water. The hatcheries are what is really destroying the habitat and preventing recovery of the whales.

**Response:** Ms. Barre agreed that salmon recovery is an important component of killer whale recovery, but not the only one. NOAA evaluated the threats and our ability to address those threats and is moving forward down multiple paths.

**Comment:** The commenter stated he did not hear anything in the presentation about salmon. Not everyone has seen the Be Whale Wise guidelines. Private boaters don’t necessarily know what to do. Education is not sufficient on what to do to be protective of whales. There should be flyers going to everybody on the islands about them. Economically it’s a big deal. People come out to the San Juan Islands, spend money on ferries, whale watch, lodging, etc. The whale watch industry is a big economic contribution.

**Comment:** A commenter stated he is a second-generation whale watcher and is wondering why there is nothing in guidelines about depth finders or forward-looking RADAR.

**Response:** Ms. Barre noted that it is something that is identified as an issue but there is not a lot of research on the topic.

**Comment:** The commenter questioned whether there is research of the effects of a moratorium on whale watching. It is difficult to separate effects of contributors to noise levels in the water. Has anybody modeled how a moratorium on whale watching would change sound and, if whale watching is eliminated and over time whales do not recover, what then?

**Response:** Ms. Barre is not aware of anyone having been able to do this. The threats to the whales are not simple, individual things to consider. They all work together to contribute to the population decline. NOAA is therefore trying to address as many threats as it is able.

### III. PRESENTATIONS: MONITORING AND BOATER EDUCATION EFFORTS

The second session of the workshop comprised three presentations describing ongoing monitoring and education efforts in the U.S. and Canada, as well as ongoing research focused on better understanding vessel effects on killer whale behavior.
Mr. Eisenhardt summarized ongoing Soundwatch activities, including contacting people on the water to educate them about the whale watching regulations and guidelines and monitoring incident trends of non-adherence to vessel guidelines and regulations. The focus of these efforts is to mitigate the effects of private boaters on the whales. If funding allows in the future, Soundwatch would like to distribute educational materials, such as the Be Whale Wise Guidelines, more broadly. Soundwatch staff and volunteers communicate with boaters and kayakers both on the water and on shore to discuss the kayaker code of conduct and the Be Whale Wise Guidelines.

Mr. Eisenhardt summarized Soundwatch’s efforts for the 2012 whale watching season:

- 66 days on the water with the whales;
- 306.5 hours monitoring vessels (613 vessel counts);
- Contacted 525 vessels on the water, totaling 1,844 passengers;
- They missed most of June due to funding issues; and
- Kayak Education and Leadership Program (KELP) and shore-based kayak monitoring.

When Soundwatch approaches private boaters, they ask if they’ve been approached previously. Approximately 95 percent say no or not this season and only five percent say yes. This indicates there are many more people to reach. Approximately 78 percent of vessels were associated with an incident of non-adherence to the guidelines/regulations before they were contacted by Soundwatch. Generally, if Soundwatch talks to them, they are less likely to have an incident; although 22 percent of incidents occurred subsequent to contact with Soundwatch.

Mr. Eisenhardt presented a series of maps and charts summarizing the data gathered in 2012. Following are key findings of these data:

- Private boaters generate the most incidents of non-adherence to the guidelines/regulations. With respect to the regulations, 73 percent of vessels under power within 100 yards of the whales were private boats; 69 percent of vessels under power between 100 and 200 yards of whales were private boaters. Similarly, more than half of the vessels stopped within 200 yards of whales were private boaters. Canadian and US commercial whale watching vessels accounted for five and three percent of vessels under power within 100 yards of whales, and nine and three percent of vessels under power between 100 and 200 yards, respectively.

- The number of active boats (U.S. and Canadian) in the commercial whale watching fleet in the boundary waters of Haro Strait has increased slightly in recent years (between 2009 and 2012).

- The number of incidents of non-adherence to the guidelines/regulations observed per hour that Soundwatch is on the water increased a bit in 2011 (the first year of the regulations) but really went up in 2012 (second year the regulations were in place). This is true for both guideline and regulation incidents. There was also a big jump in the number of boaters on the water overall. Soundwatch was not in the water in June, however, which may result in an overestimate of the average number incidents per hour in 2012.
Soundwatch contacts with boaters have been mostly on the west side of San Juan Island. This result is unlikely to be a function of the location of Soundwatch’s base of operations on the west side of San Juan Island.

There are similar patterns for all types of incidents of non-adherence to the regulations/guidelines in terms of location and density.

For kayaks, the number of incidents of non-adherence to the regulations has gone down significantly since pre-regulation (2010).

The majority of kayaks seen with whales are commercial as determined by shore-based monitoring. Of kayak incidents of non-adherence to the regulations, 22 percent were paddling within 200 yards, fairly evenly split between commercial and private kayakers. Not “rafting up” (tying kayaks together, per guidelines) was the primary incident associated with kayaks.

B. Comments and Questions on Presentation 1

Comment: Has increased use of social media resulted in drawing more people to the whales (i.e., individuals alerting others to where/when the whales are present)?

Response: Mr. Eisenhardt indicated probably, yes.

Comment: How was the park-in-path protection described pre-regulation? Was it within 100 yards?

Response: Kari Koski (formerly with Soundwatch) indicated that incidents of non-adherence to the park-in-path guideline has always been measured beyond 100 yards so as to avoid being within 100 yards as the whales are moving, but with no specific distance defined. Now the regulation specifies 400 yards.

Comment: So this means that parking-in-path can mean anywhere within a quarter of mile from a whale. Whales can be far underwater and also changing directions and it is difficult to premeditate where they will be. A boat may be sitting perfectly still and as soon as a whale surfaces, all of a sudden the boat is out of compliance. If the whales are surfacing and foraging and changing direction, it is likely that the boater will end up out of compliance. Any regulation that is based on as far away as a quarter mile will be difficult to determine with certainty by the observers. This makes the findings of the Soundwatch data useless.

Response: Mr. Eisenhardt responded that the Soundwatch boat includes a driver, three or four volunteers to collect data, and himself.

Comment: Are these people with science degrees?

Response: Yes, Master’s degrees and scientific backgrounds.

C. Presentation 2: Straitwatch Program - Megan Baker and Leah Thorpe, Straitwatch Program

Straitwatch is the Canadian equivalent of Soundwatch, based in Victoria, British Columbia. Ms. Baker and Ms. Thorpe presented a summary of the data Straitwatch gathered during the 2012 season. The
monitoring undertaken in 2012 was relatively very light compared to previous years due to funding cuts. Straitwatch contacted 60 percent fewer boaters in 2012 than in 2011. Specifically in 2011 Straitwatch participated in 631 boat contacts, compared to 274 in 2012.

Straitwatch generally conducts vessel counts every half hour within 400 meters and 1000 meters of the whales. The average and maximum numbers of vessels around whales have been relatively constant from 2010 to 2012. The most vessels within 1000 meters of whales tend to be around noon. Similar to Soundwatch, Straitwatch observed the most vessels within 1000 meters of the whales off of the west coast of San Juan Island.

Straitwatch takes a different approach of recording incidents of non-adherence to guidelines/regulations. Every 2 hours, they stop all activities and perform a 20-minute scan to count the total number of incidents they observe. They multiply this number by three to estimate the number of incidents per hour. By this method, the average number of vessel traffic interactions that an individual whale would experience over a 12-hour day is 76. As with Soundwatch data, the greatest number of incidents are associated with private boaters; there are fewer associated with commercial whale watch boats.

The rates of vessel interactions should be considered a minimum number of potential disturbances to whales. Straitwatch only records incidents it is certain have occurred and monitoring only occurs over 12 hours a day and there are other conditions that may affect whale behavior that Straitwatch does not track (e.g., acoustic).

Straitwatch described a research paper (by Rob Williams, Erin Ashe, Doug Sandilands, and David Lusseau) focused on the whales’ reaction to kayaks. The study found that killer whales responded to kayaks by increasing their probability of switching to travel (i.e., they spent more time travelling in the presence of kayaks than if kayaks were absent). Kayaks were less like than motorized vehicles to disrupt feeding but increased the whales’ energetic demand by increasing travel.

Straitwatch did not receive funding from Environment Canada for the 2013 season. It is uncertain whether they will be able to get out on the water at all. The typical budget for a season is $300,000. They have requested $100,000. With this limited budget (if received), they would likely focus their efforts in July and August and on the weekends.

D. Comments and Questions on Presentation 2

Comment: Brian Goodremont (Pacific Whale Watch Association) pointed out that there is a difference between the total incidents of private boaters versus commercial whale watch boats; more incidents involve private boaters. Also, private boaters are more frequently responsible for more egregious violations. How often are commercial whale watch boats associated with more serious violations? Mr. Goodremont thinks it would be telling to track the more egregious offenses separately and to have a discussion of the differences in the types of incidents involving each type of vessel because the numbers alone don’t tell whole story. Intent should also be considered. The commercial whale watchers are good stewards. Bad behaviors on the part of private boaters are more likely to have been intentional than an incident of non-adherence associated with a whale watch boat.

Response: Ms. Koski responded that the reports and descriptions of the incidents that Soundwatch keeps are more nuanced and do attempt to account for this sort of thing. The presentation was just an overview. One thing that is confusing for the monitoring program is that,
ultimately, they are trying to record what is happening to the whales, although the information that they collect can be used for enforcement. Although an infraction committed by a private party may have been intentional and by a whale watch company accidental, the behavior still affects the whales the same way.

E. Presentation 3: Vessel Descriptive Statistics as Related to Compliance - Juliana Houghton, UW DTAG Study
Ms. Houghton described how this data gathering effort differed from the Soundwatch and Straitwatch monitoring efforts. The study involves a focal follow of tagged whales, documenting vessels within one kilometer, and the effects of the vessels on whale behavior. The objectives of the study are:

- Quantify noise levels to which the whales are subject;
- Quantify the relationship between vessel noise to which the whales are exposed and the vessel activity on the surface;
- Investigate acoustic behavior of the whales during different activities like foraging; and
- Determine potential effects of the vessels/noise on the whales’ behavior.

“Digital Acoustic Recording Tags” were attached to whales by suction cup, and they stay in place for a few hours to record exposure to noise. During that time, the researchers collect position in space and time of all whales and all vessels, as well as other information like orientation, speed, and type of boat. Data was collected between 2010 and 2012, including 82 hours of data from the three field seasons. They collected vessel information relative to one whale, rather than the whole “Scene” which is different than other approaches. Once a whale is tagged, they follow that particular whale.

The researchers deployed 23 tags (nine in September 2010, five in June 2011, and nine in September 2012). The mean duration the tags remained on the whales was 3.5 hours (though it ranged from 43 minutes to 7.5 hours). The total tag time recorded is 81.6 hours. While measuring effects of the vessel regulations on the whales was not the purpose of the study, data were collected pre- and post-regulations (2010-2012), which may allow for some useful comparison.

Initial findings of the study:

- Most vessel types stayed outside of 200 yards from the whales, but the whale watch vessels and enforcement vessels sometimes get closer than that. Research vessels generally get closer to the whales than other types of vessels, but they are doing so under permit. Fishing vessels, ferries, military vessels, and shipping vessels are generally farther than 400 meters from the whales.
- There is a slight trend that smaller boats get closer to whales.
- Most classes and types of vessels have increased their distance from whales between September 2010 and September 2012.
- The whales’ behavior was affected by the presence of vessels.
- This analysis is a continuing effort.
IV. DISCUSSION SESSION: MONITORING AND BOATER EDUCATION EFFORTS

Following the three presentations, the workshop participants engaged in a discussion on the general topic of monitoring and boater education. Mr. Bernstein provided the following focal questions to the group to guide discussion:

- What general observations can we make when comparing 2011 and 2012 monitoring data to pre-regulation data?
- What does this comparison suggest about focusing or improving effectiveness of monitoring efforts in the near term?
- Are there additional data (types, sources) that could aid in evaluating effectiveness of the regulations?

A. Education Efforts

One commenter stated that there was a lot of talk about boater behavior; however, education of boaters is the key to changing behavior. The on-water part of boater education is important and if the educators do not have enough presence on the water there is a big problem. What creative solutions are there for better outreach and education? By what metrics can we measure success (e.g., numbers of people contacted)? If people know what to do, they will try to do the right thing.

Straitwatch responded that they have a lot of information on how many people they have spoken with on the water. At very least, even in the case they do not receive funding, they will continue land-based outreach. Straitwatch agrees that most boaters are not aware of how they are supposed to be behaving around the whales, or that the guidelines exist.

One participant stated that it is difficult for Soundwatch to do the monitoring and outreach at the same time. The commenter suggested that monitoring should be a concentrated effort that is repeated every few years and that the Soundwatch data should not be used to look at rates of compliance.

B. Monitoring Efforts

A commenter expressed concern that there are so many different people doing the monitoring and suggested that they do not have the experience to know how to judge distances. He suggested that they should mark down only incidents they are sure of. It is too difficult for most people to accurately judge distance. Mr. Eisenhardt responded that Soundwatch monitors receive extensive training in all of these things and that they are confident in their judgments.

C. DTAG Study

Another commenter stated that the tagging process Ms. Houghton described in her presentation seems that it would be stressful to the whales. The commenter asked if the researchers have checked the stress hormone levels of the whales when they do this tagging. Ms. Houghton responded that they monitor the whale’s behavior first, then tag, and then observe behavior again. These data do not suggest that there is a huge impact of the tagging on behavior. They do collect fecal material from all whales and have provided these samples to other researchers for analysis.

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3 The discussion section notes are organized by topic and therefore not necessarily a chronological accounting of the discussion.
One participant commented that a lot of the whales that are the focus of the DTAG study are swimming on their own without vessels nearby, and that the researchers are collecting data generally at off-peak times. The data gathered are therefore not ideal in terms of looking at compliance. Ms. Koski suggested maybe they could do more tagging and recording during peak vessel times. Ms. Houghton responded that they are aiming to be back on the water in September. They will use the data points they have to predict what vessel activity would be like at other times of the year.

Another commenter stated that he would be interested in the results of the analysis that relates noise levels to behavioral changes, and believes that vessel regulations should wait for the results of that research, as well.

D. Effects of Enforcement on Compliance

One commenter asked whether anyone has looked at the difference in compliance rates with regulations/guidelines when enforcement is present versus when it is not. Ms. Koski responded that one researcher based thesis research on this question, but the research is not yet published. The results indicated that, generally, compliance improves when enforcement is present, but not to the extent expected. A possible explanation is that people do not immediately recognize enforcement boats. Generally speaking, the enforcement boats stay some distance away from where whales and vessels are aggregating.

Another participant offered that he has done some research on this topic in the past that suggested that, in general, commercial boaters follow rules all the time when enforcement is present but are less compliant when enforcement is not around. Around Lime Kiln there is shore-based monitoring and compliance is generally better because people are watching.

Another participant highlighted that this study is now ten years old. He suggested that a repeat this study would get vastly different results. Another commercial whale watch operator said that they welcome enforcement, but that enforcement is woefully underfunded. On his boat, he encourages people to report things that they see and don’t like. Enforcement presence should not make a huge difference in compliance levels.

A whale watch operator stated that his company frequently alerts Soundwatch or enforcement officials to the non-compliant behavior of others. He suggested that there be some way to recognize those companies that are acting cooperatively with enforcement. Someone asked if there is a radio channel that enforcement officials can use to communicate with the whale watch vessels. Mr. Eisenhardt said yes.

V. PANEL PRESENTATIONS: ENFORCEMENT ACTIVITIES

The third session of the workshop involved a panel of enforcement officials. The officials first described ongoing and future enforcement actions and then responded to questions. The panelists included:

- Jay Dyer: NOAA, Bellingham, WA
- Deputy Herb Crowe: San Juan County Sheriff’s Office
- Russ Mullins: WDFW Northern Puget Sound Supervisor
- Brian Corrigan: U.S. Coast Guard, Living Marine Resources
A. Notes on Panel Presentations

**Mr. Dyer** stated that NOAA enforcement is very understaffed with two officers stationed in Bellingham and one boat. They encourage partnerships in order to benefit from additional support and manpower. NOAA has the budget to spend about 16 days on the water for enforcement this coming season.

**Deputy Sheriff Crowe** described that the County Sheriff’s office’s primary concern is boater safety. During boater safety courses (which are required to obtain boating licenses for anybody born in 1955 or later that has a boat that is 15 horsepower or greater), they try to cover the killer whale protection rules. The Sheriff’s office also tries to show presence when the whales are around. A few years ago they received a grant from NOAA specifically for whale watch monitoring, which they felt was extremely productive. The Sheriff’s office is mostly present from May to September, most days of week. Deputy Sheriff Crowe agrees that the problem related to whales seems to be private boaters.

**Mr. Mullins** said that the WDFW has five officers plus him in his detachment. Three officers are based in Anacortes and three in Bellingham (co-located with the NOAA Office of Law Enforcement and they often patrol together). Mr. Mullins stated that it is a goal of his for new officers to get the training they need regarding marine mammal enforcement. Over the last few years funding has been reduced. They currently have funding for 10 to 12 days of dedicated patrols in the coming year. A “dedicated patrol” means they stay with the whales for the whole day, and do not focus on any other enforcement issues. In 2011, WDFW enforcement consisted largely of NOAA referrals (i.e., letting NOAA know of violations and allowing cases to be dealt with at the Federal level). In 2012 WA law was made to mirror federal law, and they started prosecuting their own violations. In 2011, WDFW made eight referrals to NOAA and issued ten written warnings, in addition to dozens of verbal warnings. In 2012, WDFW issued seven citations, five written warnings, and dozens of verbal warnings. The majority of the citations and warnings were related to private, recreational boaters. The fine for a violation was initially $1,025 and has decreased to $550 recently. There is a movement now to get it back up to somewhere in the middle (e.g., $750). His office has no control over the value of the fine; that is handled within the courts. Mr. Mullins feels that the commercial operators have done a good job adapting and complying with the new regulations.

**Mr. Corrigan** is from District 13 and is a civilian employee dealing with the USCG Living Marine Resources. The group mostly deals with federal offshore fisheries. They don’t monitor much in the Sound for fisheries as there are no federal fisheries occurring there; therefore, when they are in the Sound, the focus is on the orcas. Their program has two missions: 1) limiting the impact of their own activities on marine resources, and 2) enforcement. They only responded to one case related to orcas last summer.

B. Questions and Comments

**Comment:** One participant suggested that the USCG sometimes just position their boat in a busy area to scare everyone.

**Comment:** Can there be more coordination between these authorities in order to get enforcement out on the water more frequently?

**Response:** The panelists agreed that they try to coordinate but, with multiple competing responsibilities, it can be very difficult. Mr. Corrigan noted that the USCG is very busy because
of their multiple missions. When they are on the water for one purpose they do try to watch out for other things that may be happening, however.

**Comment:** Is it possible to work killer whale protection training and education into boater licensing/safety programs in other areas of the state outside of San Juan County?

**Response:** Washington State Parks administers the program. Most people complete the course online. It seems like it would be very easy to include the information in the curriculum. Deputy Sheriff Crowe committed to reaching out to the State Parks Department to see what could be done about getting the information included in the licensing curriculum.

**Comment:** Will the sequester affect the expected level of enforcement activity for the upcoming season?

**Response:** The sequester will not affect enforcement at the state or county level directly, but NOAA will likely be affected. The extent to which NOAA will be affected is uncertain, however. The USCG may also be affected but it is expected to be minimal with respect to time spent in the Sound.

**Comment:** Mr. Goodremont expressed thanks to the enforcement officials on the water and noted that the Pacific Whale Watch Association (PWWA) supports law enforcement. Mr. Goodremont believes if there were 90 days of dedicated enforcement it would make a huge difference in compliance rates. He further stated that additional enforcement is needed before we start to talk about more regulation. The key question is, “how do we get more enforcement?”

**Comment:** How many of the fines actually end up “sticking”?

**Response:** The WDFW responded that usually people just pay the fine, as many are out of state or it is otherwise not worth their time to go to court to contest the ticket.

**Comment:** One participant offered that he has heard that a lot of private boaters say they rely on the presence of commercial whale watch boats as an indicator of whale presence, and then when they get into trouble for non-compliance, they say they didn’t know the whales were there. The commenter asked whether, now that the commercial whale watch vessels are farther away, that excuse is still being given.

**Response:** The knowledge of whales being there or not has no bearing on whether or not a violation has occurred. You either are in violation or are not, regardless of whether or not you knew that you were.

**Comment:** Does the money received via these fines go back into the enforcement budgets?

**Response:** NOAA does not receive this money. It gets split up in a pre-determined way across many state agencies and budgets. MMPA fines are $11,000 maximum and ESA fines can be up to $32,000 but the offense would have to be egregious and well-documented before the NOAA Office of Law Enforcement could move such a case forward.

**Comment:** When NOAA indicates its enforcement officials will spend 16 days on the water, is there flexibility as to when and where those days will happen?

**Response:** The timing and location of those enforcement efforts are flexible. Also, 16 days is only a general estimate of effort for the coming year.
Comment: Is there interest in citizen observations? Would that be helpful?

Response: The WDFW said there has been success with citizen help. The agency has received photos and videos from the public and followed up on these cases. Officer observation is best, but if they have evidence to work with, they can certainly investigate citizen-reported infractions. Mr. Dyer added that video evidence is particularly good.

Comment: What is the level of education in the USCG in general regarding whales and the regulations? There are documented cases of the USCG undertaking firing operations with killer whales in the area.

Response: The level of knowledge varies significantly across the agency, but individuals working in an area with special issues such as in Puget Sound are trained about killer whales, as well as other local issues. The incidents the commenter is referencing were heavily investigated. In all cases it was determined that no illegal activity occurred and that there were no negative impacts on the whales.

Comment: A participant asked whether drones are used in the area.

Response: The USCG will look into this.

Comment: What is the level of involvement of the USCG auxiliary on killer whale issues?

Response: The USCG is considered a valuable asset in disseminating information on the regulations and guidelines.

Comment: Ms. Koski suggested that enforcement officials’ help would be appreciated in pushing the licensing folks to make sure that information gets disseminated with boat registrations and/or in the licensing process.

Response: Currently, each county determines individually what information is disseminated with registrations, but the panel agrees that it should be more universal.

VI. PRESENTATIONS: ECONOMIC AND INDUSTRY INFORMATION

The fourth session of the workshop included two presentations describing the potential economic consequences of killer whale protections. The presentations included a summary of the findings of the Regulatory Impact Review developed to inform the 2011 vessel regulations and perspective from the commercial whale watch industry.

A. Presentation 1: Economic Impacts - Maura Flight, IEc

IEc is an economics and public policy consulting firm that developed the Regulatory Impact Review (RIR) for NOAA Fisheries in order to inform the vessel regulations. Analysts at IEc (one based in Cambridge and one in Seattle) worked with two experts from the University of Washington, School of Marine Affairs: Drs. David Fluharty and Daniel Huppert. A draft of the RIR was made available for public comment in 2009 and a final RIR published in April 2011 that updated the analysis with newer data and incorporated information provided during the public comment period.

The general framework of the RIR is:
1. **Provide economic context for the regulations**: This includes a characterization of the human uses of the Puget Sound, including estimating the regional economic contribution of commercial whale watching.

2. **Identify number of vessels of each type (e.g., commercial whale watch, commercial fishing, kayak, private recreational vessels) that may be affected by proposed regulation**: This evaluation relied on data provided by Soundwatch and by San Juan County, as well as available literature.

3. **Estimate average number of passengers per vessel**: These assumptions relied on information provided by Soundwatch, as well as a NOAA Fisheries whale watch industry study developed by Suzanne Russell.

4. **Calculate total individuals affected by each proposed regulation (i.e., alternative) by activity (vessels times individuals per vessel by vessel type)**: We assumed that the number of individuals who were not in compliance with the guidelines were the individuals most likely to be affected by the regulations (i.e., these individuals would be required to change their behavior if the guideline were to become a regulation).

5. **Qualitative evaluation of potential economic impacts that may result from implementation**: Data were lacking to quantify the relationship between the regulatory alternatives and enjoyment of, or participation in, whale watching. The RIR accordingly included a qualitative description of potential economic consequences of the regulatory alternative, citing available literature on the subject.

To provide context for the analysis, the RIR began by characterizing various activities occurring in the Sound, including recreation, commercial fishing, shipping, military vessels, and ferry traffic. This presentation focused in particular on the characterization of whale watching. The study estimated the value of whale watching to the regional economy. According to a study by the International Fund for Animal Welfare (IFAW), approximately 425,000 individuals participated in whale watching in Puget Sound in 2008 (65 percent from out of state). Of these, approximately 150,000 were sea-based commercial whale watching participants departing from U.S. ports (Friday Harbor, Port Townsend, Anacortes, Port Angeles and Bellingham). The study estimated that participants spent about $145 per person per whale watching trip on food, lodging, transportation, and other trip costs. We applied IMPLAN, a commonly-relied upon regional economic model, to estimate the value added of these direct expenditures to the region economy. Overall, the expenditures of the 150,000 participants accounted for $13.8 million in regional economic activity (estimated for 2008) and about 200 jobs.

* [A number of comments and questions were raised during the presentation, as summarized here.]*

**Comment**: Are you aware of the San Juan County study that found whale watching contributed $60 million to the economy. How did we only end up at $13 million?
Response: Ms. Flight responded she was aware of a San Juan County study that estimated that kayakers contributed $6.5 million to the regional economy but was not aware of the $60 million estimate.4

Comment: The estimate of expenditure of $145 per trip seems low. What is the source?

Response: The estimate is from the 2009 IFAW report.

Comment: This is an expensive area and that estimate seems low. Families of four spend many nights in hotels, go to restaurants, and can spend thousands per trip.

Comment: The estimate of employment of 200 people also seems low

Response: The $145 is per person (not per family) and is not meant to reflect to all costs associated with a trip or vacation to the San Juan Islands. It is an estimate of the fraction of a visitor’s expenditures associated with the whale watching activity. This method assumes that individuals will not forgo visiting the San Juan Islands if they could not whale watch; it assumes that individuals will still travel to the area and spend money, just less money. The employment estimate of 200 people is only associated with the spending of the 150,000 people participating in whale watching who are departing from those specific U.S. ports. It is not total employment associated with the whale watching industry and other support businesses (restaurants, hotels, etc.).

Comment: Multiple participants questioned how the analysis estimates a regional economic value of $13.8 million when 150,000 people multiplied by $145 per person is greater than that.

Response: Ms. Flight described that the $13.8 million estimate is a “value added” estimate and not simply the total spending on whale watching or total revenues of the companies. It accounts for the fact that some of that money is leaked out of the regional economy when the businesses that receive those expenditures spend on goods and services outside of the county to support their businesses.

Ms. Flight then summarized the Soundwatch and other data applied to estimate the average number of incidents of non-adherence to the regulatory alternatives and how that was translated to an average number of individuals affected by each of the regulatory alternatives in a given year. The key assumptions in the analysis are:

- Individuals most likely affected are those who will be required to change their behavior as a result of the regulations.
- Individuals that were already adhering to the corresponding guidelines would not be affected by the regulation (i.e., no change in behavior means no effect).

4 Following the workshop, Ms. Flight reviewed this study and found that it estimated that the 24 businesses listed in the State of Washington under the Whale Watching industry category generated $64M in sales in 2008. Revenues are a different measure than value added. Specifically, revenues are not net of operating costs and, for a given business, may be associated with more than the whale watching trips to the extent that the businesses are involved in other revenue-generating activities.
• Soundwatch data on observed incidents of non-adherence to guidelines are complete. Ms. Flight noted that the RIR acknowledges that the Soundwatch data are not comprehensive as the monitoring is not occurring continuously throughout the season. The RIR assumes, however, that these data do provide a sense of the relative impacts across alternatives of the number of individuals affected.

• The regulation will result in total compliance.

• For the 200-yard approach regulation for which Soundwatch data were not available on adherence, the RIR scaled estimates of affected individuals from the Soundwatch monitoring data of the 100-yard approach using observed vessel distribution data from another study.

Comment: Using the Soundwatch data to determine how many people would be affected by park-in-path incidents is a “far stretch.” If you were to enforce the park-in-path regulation, it would affect everyone and close down everyone. So assuming the Soundwatch estimate of incidents associated with non-adherence does not make sense.

Comment: Does the RIR assume the people who are “affected” are necessarily negatively affected.

Response: The RIR does assume that individuals who would have to change behavior as a result of the regulation are negatively affected. We do caveat that there may be individuals who are positively affected, however, for example shore-based watchers or individuals who feel it is better for the whales.

Comment: Is the assumption regarding the number of individuals affected based on counts of people associated with an infraction at any given time, or for the trip entirely? And are we counting Canadian vessels subject to U.S. rules?

Response: The number of affected individual includes individuals on Canadian vessels. The estimate is just total incidents, as Soundwatch does not follow any one vessel around for its entire trip.

Comment: Why are we not assuming that all people engaged in whale watching were within 200 yards prior to the regulation and would thus be negatively affected by the regulation? The guideline was 100 yards prior to the regulation so everybody would have been getting that close, and now that behavior (between 100 and 200 yards) would be in violation.

Response: Ms. Flight noted that not all vessels observed on the water were closer than the 200 yards during the monitoring times. It is likely, however, that the individuals affected are most likely somewhere between the number quantified in the economic analysis and the total number of people on the water. Ms. Barre emphasized that the EA DOES assume that the full 425,000 individuals annually are affected by the 200 yard approach, and that is the assumption they considered in the evaluation.

The RIR considered the potential “welfare effects” of the regulation, which are changes in the level of “enjoyment” associated with whale watching experiences. All of the individuals required to change their behavior as a result of the regulation are expected to experience a reduced level of enjoyment associated with whale watching. Data, however, are not available to quantify the specific reduction in the level of
enjoyment. Ms. Flight described that existing survey research indicates that, while proximity to whales is important to whale watchers, it is not the most important element of a whale watching trip.

The RIR also discusses the potential for regional economic impacts. To the extent that the reduced level of enjoyment associated with whale watching trips results in a reduction in trip participation, we would expect a reduction in revenue for whale watching operations and potentially reduced spending in the broader regional economy. As data were not available to estimate the potential reduction in participation in whale watching, this potential effect is described qualitatively in the RIR.

The final category of potential economic impacts discussed was increased costs to industry. This may occur, for example, to the extent that whale watch operators shift to larger vessels with more passengers or purchase special equipment to offset negative effects of the approach restrictions.

To determine how well the RIR predicted the number of individuals affected by the regulation, Ms. Flight described that IEc considered the changes in the numbers of incidents of non-adherence to the regulations pre- and post-regulation. As Mr. Eisenhardt described, there was an increase in the number of incidents of non-compliance with the approach regulation, although the extent of the effect varied by vessel types and year (2011 and 2012). Ultimately, Ms. Flight indicated that two years of data are not sufficient for a detailed assessment of the impacts of regulations for a number of reasons:

- It is unlikely that effects would be realized so soon after implementation of the regulations. Not all boaters are yet aware of the regulations and more education is needed before we can expect greater compliance.
- Additional years of monitoring data are needed to determine trends and account for external factors affecting activity levels (e.g., economic conditions).
- Data are limited and the available Soundwatch data for 2012 are still preliminary.
- The Soundwatch violation categories described in the monitoring data have changed over this time, which limits a direct comparison between years.
- The limited enforcement thus far may be construed by boaters as there being no real penalty for not complying. In this case, there may be a confounding effect of the regulation that there is actually a competitive advantage for vessels that do not comply.

Ms. Flight indicated that additional data would be helpful to inform a quantitative, retrospective impact analysis of the regulations, including:

- Total levels of relevant activities in the Sound (i.e., fishing, whale watching)
- Continued monitoring, using consistent incident categories, to track changes in behavior (i.e., adherence to the regulations)

**Industry Data**

- Estimates of annual or monthly ridership/ticket sales (WW)
- Estimates of annual or monthly revenues (WW, commercial fishing)
- Costs of changes in infrastructure or other direct costs on operations (e.g., need for vessel upgrade/retrofit) (WW)
Survey of Whale Watch Participants

- Economic survey to estimate demand for whale watching as a function of trip attributes (examine changing experience of repeat customers pre- and post-regulations)

As Lynne mentioned in her introductory presentation, NOAA committed to evaluating the potential for a No Go Zone further. With respect to the No Go Zone alternatives, the RIR noted that the extent to which people are willing to pay for whale watch trips is related to travel distance, and the relative attractiveness of substitute sites, are unknown. Additional consequences of a No Go Zone regulation may include vessel crowding at edge of closure and increased crowding at land-based viewpoints. There may also be positive effects for land-based viewers to the extent that they prefer the decreased density of vessels surrounding the whales.

San Juan County provided an analysis in response to the Draft RIR. The analysis assumes that current kayak tourists forgo visits to region entirely as a result of the No Go Zone regulation. This means that 10,000 kayakers forgo trips to region and $6.5 million in regional income is lost annually. The San Juan County analysis further assumes that 50 percent (5) local outfitters will go out of business as a result. The information from San Juan County is provided for NOAA’s consideration in the Final RIR.

The following data would be helpful in evaluating impacts of a regulatory No Go Zone:

- Frequency of trips to No-Go Zone areas absent additional regulation, by vessel type (fishing, whale watching)
- Estimated revenue/catch associated with these trips
- Survey of whale watch participants comparing relative willingness-to-pay for trips within the No-Go Zones versus outside of these areas
- Survey of whale watch participants to determine level of migration from water- to shore-based viewing, and relative preference for these methods of viewing
- Estimated difference in revenue/catch associated with trips to alternative locations during whale watching season

B. Presentation 2: Whale Watch Industry Perspectives - Brian Goodremont, PWWA

Mr. Goodremont stated his intention to present anecdotal information about the effects of the regulations on whale watching based on the experience of the members of the PWWA. Mr. Goodremont first acknowledged the limit of reliability on PWWA collecting their own data. That said, he wants to share what he’s heard from his members regarding effects of the regulations. There are a lot of confounding variables that make it difficult to determine what may generate changes in ridership/business, and they cannot definitively attribute reduced ridership to regulation.

Anecdotes from whale watch operators:

- Several operators have said that repeat customers, individuals that have watched with them for decades, have said they won’t return because experience has changed. These people are not having same “wow” experience as prior years. Those return customers are the advocates of the whale watch company, so it is particularly rough to have them stop coming. They will tell everyone to go, or not go on a whale watch trip.
• Loosely everyone feels they have lost about five to ten percent of their business due to the regulations; however, they cannot back that up with any specific data.

• Four to six operators have gone out of business in the last year, and several have decreased their fleet size, which means there are now fewer jobs in the industry.

• Fewer jobs in the whale watching industry are fewer jobs for naturalists and for future biologists. The whale watch operators are real professionals and not just entry level positions. Mr. Goodremont emphasized that these are individuals that end up as active members of the community in jobs that are important (e.g., teacher, educators, and recreation programs).

• The San Juan County data shows that whale watching accounts for about 34 percent of the economy. Mr. Goodremont has heard that maybe up to 55 percent of the local economy comes directly from tourism.

There are also voluntary guidelines that most whale watch companies adhere to. Commercial WW folks already have a voluntary, quarter-mile No Go Zone around the west side of San Juan Island. Their guidelines also specify going slow within a half mile of the whales. Mr. Goodremont would rather see a “go slow around whales” type regulation than anything related directly to a specific geographic location.

Overall, a decrease in whale watching is bad for the economy, and it is bad for whales. A decrease in visitors means a decrease in education about the whales, a decrease in ability of the whale watch operators to create conservation advocates and good stewards. A decrease in whale watching also means a decrease in professional outdoor jobs and a decrease in models of good behavior on the water.

VII. DISCUSSION: ECONOMIC AND INDUSTRY INFORMATION

To introduce the discussion session on this topic, Mr. Bernstein described that during the presentations he heard that there were questions about fundamental assumptions of the economic analysis, data gaps, and suggestions to maybe obtain additional industry data.

Comment: Assume there is a couple that is spending a lot of money in San Juan Island on a vacation. The commenter described how a couple may spend about $1,000 on a vacation on the island on restaurants, hotels, gifts, etc. So where did you get the $145 per trip in the economic analysis?

Response: The estimate of $145 per person is only associated with expenditures related to the whale watch, not all activities on the island. The $145 assumes that if people come and spend multiple days on the island, and whale watching is one activity they participate in, if they do not go whale watching, they will still come to the island, but will spend less money. We do not assume that nobody will visit San Juan Island if there is no on-water whale watching.

Comment: People will not come if they cannot go whale watching.

Comment: (Mr. Goodremont) mentioned that he feels like he is creating stewards when he takes people out on a whale watch trip. The commenter asked Mr. Goodremont what he is doing to optimize the chances that he is creating stewards. How does he track or know how many he is creating?
**Response:** Mr. Goodremont responded that he knows that he is by the way people behave but he does not have a way of knowing how many. There is anecdotal evidence of people that he took out on trips when they were young now applying for whale watching or naturalist jobs.

**Comment:** Kari noted that a lot of people she talked to on the water were kayaking and didn’t stay on the island or necessarily spend any money on the island. Can we account for that in the multiplier or tease that out somehow?

**Response:** The estimate of expenditures per person is an average. It is meant to account for the fact that some people may spend a lot and others little. With more data, we could model these things more specifically.

**Comment:** Brian mentioned that a lot of people will not come back for whale watching now because the experience is different. This is true in a lot of instances but what about the new people who come in and don’t know what it “used” to be like, so they think it is great. How big a deal is it that repeat customers do not come back if new ones do?

**Response:** Mr. Goodremont said he does not know and cannot quantify this. Because he knows some people won’t return, he is trying to focus on those people who are new and think the 200 yard distance is great. For his business, Mr. Goodremont has increased his marketing efforts to offset the effects of the regulation.

**Comment:** A representative of the commercial fishing industry asked whether it is correct that the economic analysis determined that the effect of a No Go Zone on fishing is unknown.

**Response:** Ms. Flight said that was correct. Some data were available from San Juan County and Soundwatch to describe fishing vessels present, and we did present that information. We were not able to identify data to relate the fishing trips to the proposed No Go Zone with catch or revenue estimates.

**Comment:** (Question to Ms. Barre) Given that finding, how did NOAA’s EA then find that the No Go Zone would not affect commercial fishing?

**Response:** Ms. Barre clarified that the EA did not conclude there was no effect; NOAA assumed that the effort/revenue was displaced, but not lost entirely.

**Comment:** The commenter offered to assist NOAA and WDFW with gathering the needed commercial fishing data.

**Comment:** After seeing presentations, it is unclear what the effect of the regulation on whale watching revenue really is. The commenter would like to see a survey that attempts to identify what this number really is.

**Response:** Ms. Flight indicated that while currently the data do not exist, it is certainly possible to design a survey to gather this information. The whale watching companies could be surveyed regarding participation levels, ticket prices, etc. pre- and post-regulation. Such a survey could be anonymous to avoid disclosing sensitive business information. Mr. Goodremont offered that whale watch operators would be interested in participating if they could do an anonymous survey. This would help with data gaps and be really useful. This is generally information the companies have.
Comment: Lots of people who are whale watching from other ports may see the San Juan Islands on their trip and decide to take their next vacation there. Don’t underestimate the marketing potential of folks seeing the islands while whale watching. If you put in a No Go Zone, you are going to miss this opportunity.

Comment: It seems obvious that NOAA should go to the people within the industry to try to find out from them if there is an increase or decrease in revenue. That is how you get raw data.

Response: Ms. Barre said that primary data collection is a resource issue. But before we talk about original data collection, however, the goal is to make sure we get all the data that are already available.

Comment: If data indicate at some point in the future that the regulation has had a huge negative economic effect, is NOAA willing to revisit the rule?

Response: Ms. Barre said yes, absolutely. That is why we are here. Evaluations of the effectiveness of the regulations will include the biological effects and benefits to whales, as well as the economics of what has happened.

Comment: What type of effect specifically would NOAA need to see in order to trigger a re-visitation of the regulation?

Response: Ms. Barre responded that she can’t answer that question. There are too many factors to consider together.

Comment: Why are we not talking about pollution, fish, etc.? These are the real threats to whales. Commercial whale watching trips are a platform for outreach and education regarding these threats and they are losing that.

Response: Ms. Barre responded that NOAA is absolutely considering salmon and pollution. This particular workshop and this group of people, however, are more relevant to the discussion of whale watching.

VIII. DISCUSSION: MOVING FORWARD

Mr. Bernstein presented the following questions to the participants to inform the content of the final discussion session of the workshop:

- How can we improve the effectiveness of the existing regulations and guidelines?
- How can they be implemented considering existing opportunities and constraints?
- Are there additional protective measures that could be explored?

A. Improving Effectiveness of Regulations via Enforcement

Mr. Eisenhardt offered that we need more enforcement: more money and more time on the water. Mr. Goodremont suggested that we can put money into education and not reach the people who are “driving

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5 The discussion section notes are organized by topic and therefore not necessarily a chronological accounting of the discussion.
over” whales. If we had one well-marked boat that was always out there, however, it seems we can almost certainly get these infractions down significantly.

Ms. Koski added that enforcement might be concerned about committing violations themselves so they stay too far out from the whales to really capture what is going on or for people to note their presence.

A participant questioned whether anyone knew the proportion of enforcement presence represented by NOAA versus the state and county. Mr. Eisenhardt responded that WDFW anticipated 12 days on the water this year, while NOAA said 16. The County is more focused on boater safety. WDFW applied for a grant from NOAA to obtain additional resources for enforcing orca regulations, but the program has had budget cuts and has not been funded in recent years.

Commercial whale watch groups have motivation to comply, but private boaters do not have the same motivation. Enforcement is needed to motivate these people to comply.

A participant asked what portion of total infractions turn into tickets and whether this is something that is tracked and can be reported to the community. Ms. Koski responded that it is really difficult to tell whether people talk about warnings they received with other boaters. A participant suggested that NOAA consider press releases about the level of enforcement. This may have a significant effect on compliance through education.

A participant suggested that in the kayak community if a guide received a ticket, that information would be all over the place and everyone would know. Another participant stated that there are two approaches to enforcement: issue a small number of very expensive tickets that might get a lot of publicity, or issue a lower fine to a lot of people and they will tell their friends about it. The participant indicated that studies suggest a lower fine issued more frequently is more effective. Ms. Koski noted that we are at the point where we can implement the “low fine, many tickets” approach because with the new Washington State laws the enforcement officials are able to write a ticket on the spot.

A whale watch operator expressed that he is getting tired of these meetings and that the discussion is repetitive. The money spent on these workshops should instead be spent on enforcement or given to Soundwatch instead.

Two commenters asked how much it would cost to have the needed level of enforcement. He asked whether someone living on the island could get deputized. Ms. Koski responded that this is what WDFW has requested the NOAA grant for. Another participant suggested that shore-based enforcement may be less expensive. Any shore-based enforcement would need to be careful that the officers are trained to clearly identify infractions on the water from the shore.

Ms. Koski mentioned whether a tax or fee on each whale watching ticket could help fund enforcement. Mr. Goodremont replied that the PWWA would be happy to do this and, in fact, have offered. However, it seems they cannot give money to law enforcement directly.

B. Improving Effectiveness of Regulations via Education and Outreach

It would be great to pass through some official channels to ensure that the information on the guidelines and regulations is distributed more broadly. There are clubs/groups that we can distribute the information to: e.g., Washington kayak club, Everett kayak club, etc.
Ms. Koski noted that with limited budget, it is difficult for Soundwatch to decide between spending more time on the water, or spending it on-shore disseminating information. One whale watch operator noted that he has offered empty seats on his trips to Soundwatch monitors so they can get out on the water more, and he is happy to continue to do that. Ms. Koski said they are happy to do that should organize a plan for this.

There needs to be real education on orcas tied to the licensing and boater education process. Ms. Koski noted that it is hard to get the national level groups like Power Squadron to pay attention and require these things; it needs to happen at the local level.

Straitwatch took the approach of educating some of the local educators.

Ms. Koski suggested training regarding educating people during the quick interaction Soundwatch has when they approach vessels on the water. Straitwatch responded that they are talking about spending more time talking to fewer boaters.

Whale Watch operators may consider a “stewardship tax” on tickets that would be dedicated to outreach and education. Some companies do this already, but region-wide implementation would be more effective. One participant expressed frustration that the whale watch operators were being asked to help educate people. The law is the law and in all other topics it just gets enforced and people have to figure it out.

Mr. Goodremont stated that NOAA should help the whale watch operators understand what message it wants them to be communicating. They’re very open to helping with education; they are good stewards and want to continue modeling good behavior.

Mr. Eisenhardt suggested that for 2013 season it would be good to undertake another printing of Be Whale Wise guidelines as The Whale Museum is almost out of them.

C. Effects of the Vessel Regulation/Economic and Industry Data

Mr. Goodremont stated that he would provide whatever information is necessary regarding the effects of the regulations on his business but noted that he is tired of this discussion. Even if you got rid of all of the vessels, if there aren’t enough salmon it doesn’t matter and is a waste of time. He wants to talk about salmon. Ms. Barre replied that she is reluctant to change the focus of this discussion to salmon because that is not the purpose of the workshop.

One participant stated that he has been on the water a long time working under permit for the Canadian government. He has not seen a difference between the 100 and 200 yard approach (note takers note: it is unclear whether the commenter is talking about a difference in terms of effects on whales or a difference in terms of ridership and level of enjoyment for whale watching). It is difficult to maintain the 200 yard distance, however, if you’re constantly afraid of a whale popping up closer than 200 yards from a dive. A respectful behavior at 100 yards was fine.

A participant asked what metric could be used to measure the efficacy of the regulations. Shouldn’t it be the population of killer whales and is anybody looking at that? It seems like the metric being relied upon is the number of infractions. If the correct metric is whale population number, we’re failing.

Ms. Koski responded that there are a lot of ways to look at it. She stated that there has been a lot of talk about considering economic hardship and that the economic burden is too big. Any burden has to be
compared against the good the regulations are doing for the whales. Ms. Koski stated that she personally does not think the regulation is generating an economic hardship. She noted that there are no data evidencing this, and that the whale watch companies have only been able to provide anecdotal evidence, which the whale watch operators would certainly not stand for in NOAA’s evaluations.

Another commenter asked what the whale population number is at which the loss of whale watching jobs is acceptable. What we really need to do is deal with the issue of salmon. These regulations are all about whale populations, which are all about salmon populations.

D. Potential Additional Protective Measures to Explore

One participant suggested that, instead of a regulatory No Go Zone, NOAA Fisheries should think about extending the existing voluntary no-go zone to others boaters (i.e., beyond the commercial whale watchers) and educating more people about the purpose of the voluntary protective measures.

Another commenter underscored that Mr. Eisenhardt’s presentation suggested that only five percent of boaters that he interacts with have heard of guidelines. Why would NOAA establish more regulations or guidelines if people don’t even know about the existing ones?

Ms. Koski asked if the No Go Zone came up again, would it be a flat “no” for the whale watch industry, or are there ideas that they would entertain. Mr. Goodremont said it is a huge flat “no” on a regulatory No Go Zone. First we need to see if there is a change in killer whale recovery when we moved from the 100 to 200 yard approach regulation. If there is no discernible change, we should go back to the 100 yard approach.

It used to be that there was a plan (guideline?) to shut off engines when whales are passing but now people are constantly moving to try to get away from whales so if you drop a hydrophone all you can hear are the boats moving off to the side. This may create more noise actually, instead of less, which is the goal.

A participant offered that it is one thing to have expanded the approach distance from 100 to 200 yards but the additional dimension of the 400 yards out front confuses the whole issue. The whale is moving all the time and the element of the regulation focused in not being “in front” of the whale is confusing. A circular 200 yard distance from whale overall would be easier to communicate.

Mr. Goodremont offered that if there are ways the whale watching community can help with salmon projects, they would be happy to talk about that. He suggested that PWWA would rather focus on salmon restoration and spend money on that than dealing with the media. PWWA’s mission is to put more food in the whales’ mouths and educate more people about whale conservation.

IX. CLOSING REMARKS

Mr. Bernstein suggested Ms. Barre close the meeting by summarizing the current status of killer whale conservation and recovery efforts, including those outside of the vessel traffic regulations, as there seems to be significant interest in other, ongoing efforts.
Ms. Barre described that NOAA Fisheries has a Recovery Plan in place for the killer whales that addresses all threats that may have contributed to population decline, including prey issues, contaminants, vessels, and sound. On the salmon front, NOAA had a scientific panel look at how salmon fishing affects prey abundance and they are now reviewing the scientific information provided by those panels. This includes all fisheries (Sound, Canadian, Treaties, and States). Salmon abundance in the ocean is linked to conservation and recovery of whales. Salmon is only one of the threats, however.

NOAA is working with Canadian and other partner agencies and organizations on salmon conservation and addressing habitat threats. In particular, NOAA is developing hatchery genetic management plans. NOAA is also addressing threats from hydropower operations on salmon; dams are coming down (the Elwha is a big example). Ms. Barre stated that she is not the expert on salmon recovery and offered that she can bring others at NOAA Fisheries to discuss this. She emphasized, however, that there is a huge infrastructure built around salmon recovery. Ms. Barre offered that she can bring that information to the whale watch operators if it is something they want to be involved in, but it is “a world unto its own.” Tremendous amounts of money are being brought to salmon recovery. It dwarfs killer whale budgets. The killer whale work brings even more money to salmon due to the connection.

Threats to killer whales from contaminants are a particularly tough issue. It is difficult to connect a change in contaminant levels with benefits to the whales. It is also difficult to evaluate costs of regulating contaminants associated with whale protection apart from all of the other regulations attempting to control contamination (pesticide policies, wastewater treatment, etc.). NOAA participated in a consultation on the Joint Base Lewis-McCord Wastewater Treatment Permit and is now putting together a technical group with the U.S. Environmental Protection Agency (USEPA) to think about how to reduce contaminants. Researchers are thinking about how to fill data gaps between management of contaminants and benefits to whales.

NOAA does not believe that oil spill issues were a cause of the whale population decline we saw in the 90s, but recognizes oil spills as a risk. Terminals and facilities for coal and oil are also concerns. There are criteria in the Recovery Plan focused on reducing risk and how to best respond. There is a meeting this Saturday regarding oil spill response with the WDFW and San Juan County government to do a drill and see if they can leap into action to get the whales to move if there is a spill.

On the research side, NOAA is learning more about data gaps (coastal movements, coastal feeding) and is making great strides. They have passive acoustic listening devices that are very helpful in combination with satellite tagging. They also collected prey and fecal samples from members of K and L pods. NOAA has not quite dealt with other types of threats, for example from alternative energy projects.

It is the combination of all of these things, and any not any one element, that is affecting the whale population level. Salmon is a big issue but if there are less salmon, anything that affects the whale’s ability to echolocate and access scarce prey (e.g., vessels) is a big concern. NOAA’s priorities are driven by where the greatest effects are and where there is potential to mitigate them.

Comment: If the Cherry Point coal facility lands in the Northwest, will NOAA take a position on it?

Response: NOAA is commenting on a NEPA document for this project. In its scoping comments, NOAA identified a number of issues with the impacts of the proposed project on fish
and marine mammals. If the project reaches a certain stage, NOAA would be involved in an ESA consultation regarding the project to consider potential effects on all listed species.

Comment: What is the status of the delisting petition for the whales?

Response: NOAA accepted a petition for delisting and is reviewing public comments. The majority of the comments are not substantive but express a desire to keep whales listed. NOAA is looking at the genetics, as requested in petition, as well as other issues brought up in petition.

Comment: A participant stated that he wanted to reiterate that determining if the regulations are being effective from the whales’ perspective is important. Have there been changes in the whales’ behavior since the regulations went into place?

Response: The DTAG data will give insights into how to use the Soundwatch data on vessel activity. There are opportunities to further analyze these data to learn more. NOAA is very hopeful that this will be useful. Some researchers in the room have a tremendous amount of data about changes in whales’ behavior over time. People are spending time on the water observing and talking about observations all the time. This information could be submitted for analysis and publication.

This workshop is very valuable to NOAA Fisheries. Ms. Barre expressed appreciation for the participation and continued engagement in discussions, and acknowledged that the whale watch operators spend a lot more time on the water with the whales and that is a helpful perspective.