Humpback Whale Protections Working Group Recommendations Report

Submitted to:

Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council

November 6, 2011

Working groups are subunits of the sanctuary advisory council. The council is an advisory body to the sanctuary management. The opinions and findings of this document do not necessarily reflect the position of any individuals or agencies including the sanctuary, the National Oceanic and Atmospheric Administration, or the State of Hawai'i.

Need for Action

The main Hawaiian Islands are the primary mating and calving ground for humpback whales in the North Pacific Ocean. At the time of the Hawaiian Islands Humpback Whale National Marine Sanctuary's (sanctuary) was established in 1992 there were an estimated 4,000 humpback whales seasonally utilizing Hawaiian waters. Since that time the sanctuary's mission has been to protect this endangered population of humpback whales and their primary habitat around the Hawaiian Islands. Today the Hawaiian population represents approximately 12,000 animals, having grown at a healthy rate of around 4-6% annually. NOAA Fisheries' Office of Protected Resources (OPR) is currently reviewing the status of humpback whales, and may delist or down list the Hawaiian population. However, threats, like entanglement and ship strikes, still exist, and are considered a major anthropogenic threat to humpback whales. In addition, new information and emerging potential threats have been identified which may have unanticipated and/or undesirable impacts.

Desired Outcome

The sanctuary needs to identify current and potential emerging threats, and determine their continuing impact on Hawaii's humpback whales. In doing so, only then, might the sanctuary identify its continued role in protecting these extremely important and endangered animals.

Recommendations

<u>Topic - Whale vessel contacts (ship strikes):</u>

1. Support a pilot study or otherwise test implementation of a 14-knot speed limit, specific to whale season and while maintaining the thrillcraft ban[1], in the four-island region (Maui, Molokai, Lana and Kaho'olawe).[2] In considering speed limits, whether 14 knots or otherwise, the following variables should be investigated:

    a. What is a reasonable, safe speed? Does it represent 14 knots?
    b. Reasonable speed may depend on conditions.
    c. Any speed limit should be based on latest research.
    d. Island or regional specific issues/ differences should be considered (e.g. shipping, military).

[1] A state law banning thrillcraft (e.g. parasails, jet skis) during whale season from Dec. 15 through May 15.
[2] Some members of the working group thought that a 14-knot speed limit should be implemented throughout sanctuary waters during the whale season, as opposed to a partial implementation that would represent a pilot study or test of the speed limit's mitigation.

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e. Differences in type and size of vessel, as well as, amount of vessel traffic, whale density, and how whales use an area (e.g. mother and calves using an area as a nursery) should be considered.
f. What is the determined impact to the animals?
g. Make sure speed limits that are implemented have adequate monitoring and enforcement provisions.

2. Continue supporting research, whether through sanctuary or by partnering with others, to better understand the habitat usage of the animals and risks of vessel-whale contacts. In considering research, the following were recommended:

   a. Use shore and/or boat-based surveys to help gather information/ data.
   b. Provide GIS mapping to better illustrate habitat usage and risks.
   c. Investigate whether vessel corridors (i.e. shipping lanes) are feasible.
   d. As above, investigate the impact and feasibility of speed limits.
   e. Determine whether there are high-risk areas and/or animals (e.g. calves).
   f. Examine humpback whale detection capability (i.e. response to vessel noise).
   g. Examine ways to improve mariners' detection of animals and whether these technologies can be piloted.
   h. Provide better inter-agency cooperation and communication, including dissemination and sharing of data.
   i. Implement research efforts to follow up on health of a whale that has been struck by a vessel.
   j. Not only partner with existing researchers, universities, technology experts, but consult with people who live in the areas and the non-scientific community (e.g. traditional ecological knowledge).

3. Continue outreach/awareness (as to increase caution around whales and reporting of incidences). Recommendations included:

   a. Publicly announce (e.g. press releases) prior to and during whale season the presence of humpback whales and recommendation that boaters should slow down. Also, provide more information on what areas represent high density/ high-risk areas and the research that has been done on the issue of whale-vessel contacts.
   b. Offer captain certification program (e.g. proper operation around whales); not just for whale watch operators, but also for charter tours (e.g. fishing). Such a program would likely be valuable to the tourist industry to show/display certification.[3]

[3] It was noted that NOAA Fisheries' Pacific Islands Regional Office is working on a similar program – DolphinSmart, so a model is in place.

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c. Encourage continued inter-vessel communication about the locations of whales (i.e. vessels can help other vessels know whale locations).
d. Work with respected community members by enlisting respected community leaders to conduct outreach as means to get the message to the local contingent. Provide training to these community members - "train the trainers".
e. Conduct a follow-up survey of mariners to determine public's perception of whether most collisions are reported. [4]

4. Continue response efforts to assess animals reported or suspected of being involved in a strike, including necropsies.

5. Consider the pros/cons of encouraging propeller guards; realizing more information is needed.[5]

6. Recommend observers be placed on board vessels to monitor whale watch vessels, fishing boats, vessels in high-whale density areas.[6]

<u>Topic - Entanglement (by-catch):</u>

1. Continue to work with all partners, universities, and ocean user communities (network) to increase capacity to respond to entangled large whales, and in doing so provide experienced, authorized, and safe response by working with community to free some animals from life threatening entanglements. Continually evaluate the safety and success of large whale entanglement response.

2. Continue to study entanglement impacts and risks in order to improve response efforts, and gather, disseminate, and share information as to reduce entanglement risk for large whales (i.e. whale safe gear locally, regionally, national, international).

3. Increase awareness and outreach on topic of large whale entanglement threat and response efforts. Do so by improving and building entanglement information system (i.e. social media), and other means of increasing information and availability for shared information (e.g. Facebook, iPhone app, real-time updates).

[4] Original survey done by Lammers *et al,* 2003 report
[5] Some working group members asked that speed exemptions for "novel", "whale safe" hulls and drive designs be considered.
[6] Some working group members noted that the use of observers was not necessary. They believed that vessels would end up monitoring each other.

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4. Work with local fishermen to investigate their techniques to avoid entanglements.

5. Coordinate with marine debris program to remove reported debris from sanctuary waters.

Topic - Intentional Approach (Harassment):

1. Provide better education / outreach on protection (e.g. 100 yard rule), especially for recreational users. Recommendations included the following:

    a. Provide outreach (PSAs) that focus on recreational / general public in regard to intentional close approaches to humpback whales. Addresses the idea that "close approach rules" applies to all.
    b. Develop mandatory outreach / education to ocean user community (boat operators, kayakers, stand-up paddlers, everyone) on close approach and safe operation around humpback whales (e.g. ocean user workshops, action-reaction workshops, with vessel registration, charter and rental agreements, ocean awareness training).

2. Understand through continued research impact (i.e. effects upon) on animal, but also larger picture of impacts on ocean users. For instance, re-do/ do more surveys of "near misses/ surprise encounters" like those done in past by Trilogy Excursions and more recently by Pacific Whale Foundation.
3. Investigate means of reducing impact of harassment to animals. Recommendations included:

    a. Investigate / pursue technologies that would assist in avoiding close approaches (e.g. range finders).
    b. Encourage greater information sharing between operators / users that might reduce incidence or likelihood of close approach.
    c. Support recommendations on the number of boats and time spent with humpback whales, including current industry-determined standards (self-regulation e.g. 3 vessels on an animal at any one time).

4. Support current enforcement "attitude" which recognizes that the use of Hawaii's waters by ocean users results in unintentional "close approaches" (<100 yards).

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Topic - Anthropogenic noise: [7]

1. Support research efforts (e.g. boat time, letters of support, access, permitting) to better understand: (a) mysticete hearing, (b) thresholds for avoidance, tolerance, harm, (c) changes in whale song, social sounds and behavior (navigation, mating) with different levels of sound exposure.

2. Characterize the soundscape of sanctuary waters, as determined through research, to establish baselines and monitor change using long-term monitoring (e.g. sentinel sound sites). Include in the biogeographical assessment, sound sources such as from shipping/ vessel traffic corridors and other high-use areas, military operations and offshore development. Comparative studies could be conducted using areas that are used by whales and at the same time are subject to extremes in levels of noise.

3. Limit sound within the sanctuary during whale season to comply with the precautionary principle; the National Marine Sanctuary Noise Policy (2007) and Dr. Jane Lubchenco's 2010 letter[8] stating that in NOAA's view, we must do more to "address uncertainties and protect marine mammals from sonar impacts". Suggest that the determination of sound limits be determined based on (a) measured levels singing whales expose each other to, (b) the noise levels recorded outside Hanalei Bay during the melon-headed whale stranding in 2004 and other significant noise events, (c) research on sound levels that have resulted in behavioral disruption in humpbacks and other species. These 3 lines of evidence collectively suggest that harm can be avoided if noise is kept below 140-145 dB. Recommendations included:

   a. Considering the seasonal limits of boat speed in the sanctuary, which might improve the soundscape.
   b. Define current impacts and how limiting sound mitigates threat.
   c. Consider the creation of seasonal quiet zones (pilot areas) with lower decibel levels at highly frequented areas for humpback whales, such as Penguin Banks, Ma'alaea Bay, and Auau Channel. [9]

[7] Several working groups members voiced opinion that noise was least significant threat to humpback whales. That the population of humpback whales was increasing and that unless there was a defined impact this recommendation should not be implemented.
[8] Jane Lubchenco's has been the Under Secretary of Commerce ofr NOAA since 2009.
[9] There was strong objection from several working group members to Ma'alaea and Auau being used as "quiet zones".

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d. Use scientist-recommended "natural experiments". For instance, was pointed out that both Penguin Bank and Auau Channel have a large number of whales despite likely differences in anthropogenic noise. These regions could act as "natural" studies areas to address impact of noise on the animals.
e. Look at how speed relates to noise, with regard to boat type, etc.

4. Adjust boundaries to include the moku of Na Pali, coincident with whale distribution and cultural boundaries, and engage cultural practitioners, local fishers and the military in the determination of adjusted boundaries. Was also recommended by some members of working group that all or other boundaries needed to be adjusted, not just this one. However, others recommended that unless there was a defined impact, that boundary adjustments for the purpose of reducing or regulating sound should not be implemented.

<u>Topic - Competition for Habitat (e.g. offshore development):</u>

1. Obtain additional information on potential threat and socio-economic impacts. Recommendations included:

   a. Pursue investigation of habitat and use by humpback whales to identify key characteristics to better inform management decisions.
   b. Develop knowledge base in offshore development and mariculture, and contribute to the community's knowledge.
   c. Utilize CMSP to locate proposed developments in appropriate sites, preferably outside sanctuary waters.
   d. Coordinate with partners and communities CMSP workshops to determine preferred areas for offshore development.
   e. Develop worldwide information repository for whale interactions with offshore development.

2. Stay current on federal and state regulations and permitting requirements, and actively participate in state and federal permitting processes (ability to act within timeline).

3. Implement NMSA Section 304(d).[10]

4. Provide greater protection inside sanctuary than outside.

5. Pursue a precautionary approach when it comes to offshore development.

[10] Section 304(d) requires Federal agencies to consult with the ONMS whenever their proposed actions are *likely to destroy, cause the loss of, or injure a sanctuary resource.*

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Topic - Water Quality:

1. Continue to partner with existing stranding network (PIRO, HPU, MMHSRP) to identify diseases and pollutants of concern in tissues of humpback whales.

2. Sanctuary should partner and work collaboratively to support land and sea-based monitoring programs. Recommendations included:

   a. The expansion of water quality testing through partnerships with agencies (DOH, DLNR), university, and communities, to include additional pathogens.
   b. The sanctuary should evaluate effectiveness and adaptability of water quality programs in other sanctuaries.

3. Investigate vessel discharge. Based on study results and testing, sanctuary to consider encouraging commercial tour operators statewide to pump out holding tanks in pump-out facilities.

4. Support education and outreach efforts towards improving water quality, and towards sharing findings from joint agencies.

5. Support beach cleanups, marine debris removal projects and management of marine debris in sanctuary waters in partnership with NOAA and others.

6. Support DOCARE / OLE partnerships to enforce regulations in sanctuary, and identify gaps in enforcement and regulations.

7. Pursue ecosystem-based sanctuary.

Topic - Research:

1. Sanctuary to help identify and fill humpback whale research gaps. We can't protect what we don't understand. Where humpback whales mate, preferred birthing habitat (aside from depth and temperature), night-time behavior, how distribution of females drive distribution of males, dynamics of humpback whale distribution, recent aerial surveys, humpback whale association with other species, migratory route changes in response to climate change, place-based demographics, mating system and dynamics, residency, who are the humpback whales in PMNM, vocal communication beyond song, use of water column and ocean bottom, and function of song.

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2. Sanctuary to be a catalyst for collaboration of humpback whale research in Hawaii and internationally. Collaborate with other sanctuaries internationally; orientation for SAC members and staff about other whale sanctuaries internationally. Pursue a follow up to SPLASH (SPLASH II).[11]

3. Identify and secure financial resources to support humpback whale research.

Topic - Financial:

1. Sanctuary should expand its fundraising capacity to support priority projects (beyond federal government funds).

2. Explore getting donations from visitors / tourists (consider developing a foundation specifically for HIHWNMS).

Process or methodology

Considering the fact that understanding, protecting, managing and responding to humpback whales, and their habitat has been the sanctuary's primary mission over the past 14 year; and the collective knowledge within the sanctuary, amongst its many partners and the community, it was decided that that an effective means of developing management recommendations towards humpback whale protection and the Management Review Process (MPR) was to establish working group made up of these very constituents. The Humpback Whale Protections working group was created by the Sanctuary Advisory Council (SAC) in December 2010 in order to discuss the issues, identify gaps in current resource protection efforts, and to develop potential management recommendations to be approved by the SAC, which will then be presented to sanctuary management. Working group members included marine mammal researchers, tour boat operators, fishers, and representatives from conservation organizations, federal agencies, enforcement offices and other stakeholders. It was believed that the working group would most effectively accomplish this task by conducting an invitational two-day workshop in which members could review current knowledge about humpback whales, identify potential threats, and articulate ways to address concerns. The workshop would also be structured to allow non-invited observers, who were also considered important in the MPR process. On September 8 and 9 the sanctuary hosted at its Hawaii Kai office a two-day workshop for the Humpback Whale Protections Working Group. Over 65 recommendations were determined, and collectively, they aim to enhance humpback whale protection and increase our understanding of these endangered animals and their environment.

[11] SPLASH: Largest whale study done to date. Represented comprehensive study of North Pacific humpback whales. Lead by sanctuary's efforts and stands for Structure of Populations, Levels of Abundance, and Status of Health.

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Contributing Members

Chair: Jim Coon (Trilogy Excursions, Sanctuary Advisory Council Whale Watching Seat)
Staff lead: Edward Lyman (Hawaiian Islands Humpback Whale National Marine Sanctuary)

Hannah Bernard (Hawaiʻi Wildlife Fund, Sanctuary Advisory Council Research Alternate)
Phil Fernandez (Sanctuary Advisory Council Fishing Seat)
Marsha Green (Ocean Mammal Institute)
Lou Herman (University of Hawaiʻi emeritus professor)
Makaʻala Kaʻaumoana (Hanalei Watershed Hui, Sanctuary Advisory Council Conservation Seat)
Eric Kingma (Western Pacific Regional Fishery Management Council Representative on Sanctuary Advisory Council)
Elizabeth Kumabe (Sea Grant Hawaii, Sanctuary Advisory Council Education Seat)
Gordon LaBedz (Sanctuary Advisory Council Ocean Recreation Alternate)
Marc Lammers (Hawai'i Institute of Marine Biology)
Bobby Luʻuwai (Maui County Fisherman)
Daniela Maldini (Pacific Whale Foundation)
Kevin Millet (Holo Holo Charters)
Nina Monasevitch (Kohola Mana ʻOhana)
Adam Pack (University of Hawaiʻi at Hilo, Sanctuary Advisory Council Research Seat)
Solomon Pili Kahoʻohalahala (Sanctuary Advisory Council Lana'i Island Representative)
Sharon Pomroy (Sanctuary Advisory Council Kaua'i County Representative)
Eric Roberts (U.S. Coast Guard Representative on Sanctuary Advisory Council)
Tetsuzan Benny Ron (University of Hawaiʻi Aquaculture Program, Sanctuary Advisory Council Business/Commerce Seat)
Alex Sheftic (Sanctuary Advisory Council Hawaii County Representative)

Resource experts:
Alexa Cole (NOAA General Counsel for Enforcement and Litigation)
Sarah Mesnick (on detail from NOAA Southwest Fisheries Science Center)
Take Tomson (NOAA Office of Law Enforcement Representative on Sanctuary Advisory Council)
David Schofield (NOAA Fisheries Service, Protected Resources)
David Mattila (Sanctuary staff currently on detail with International Whaling Commission)
Frank Parrish (NOAA Pacific Islands Fisheries Science Center)

Other Hawaiian Islands Humpback Whale National Marine Sanctuary staff in attendance:
Brenda Asuncion
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Definition of Terms

CMSP: Coastal and Marine Spatial Planning
DLNR: Hawaii's Department of Land and Natural Resources
DOCARE: State of Hawaii's Department of Conservation and Recreation
DOH: Department of Health
ESA: Endangered Species Act
HIHWNMS: Hawaiian Islands Humpback Whale National Marine Sanctuary
HPU: Hawaii Pacific University
MMHSRP: NOAA Fisheries' Marine Mammal Health and Stranding Response Program
MMPA: Marine Mammal Protection Act
MPR: Sanctuary's Management Plan Review process
NMFS: National Marine Fisheries Service
NMSA: National Marine Sanctuary Act
NOAA: National Oceanic Atmospheric Administration
OLE: NOAA's Office of Law Enforcement
ONMS: NOAA's Office of National Marine Sanctuaries
OPR: NOAA's Office of Protected Resources
PMNM: Papahānaumokuākea Marine National Monument
PIRO: NOAA Fisheries' Pacific Islands Regional Office
PSA: Public Service Announcement
SAC: Sanctuary Advisory Council
SPLASH: Structure of Populations of, Levels of Abundance, and Status of Health of humpback whales in the North Pacific

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Appendix A – Humpback Whale Protections working group workshop agenda:

Thursday, September 8, 2011

OPENING / INTRODUCTIONS
Jim Coon (working group chair), Ed Lyman (working group staff lead), and Malia Chow (sanctuary superintendent) provided welcoming remarks and an introduction to the workshop, including context for the sanctuary's management plan review process.

REVIEW OBJECTIVES FOR THE WORKSHOP
The working group was reminded of the objective for the workshop, which was to develop management recommendations to submit to the full sanctuary advisory council for review.

REVIEW HUMPBACK WHALE BIOLOGY AND POTENTIAL THREATS/ CONCERNS
A variety of presentations were given to provide workshop participants with background information on humpback whale biology and perspectives on potential threats and concerns to humpback whales. Presentations are available on the sanctuary website.

PRESENTATIONS:

- General background of humpback whales in Hawaii and beyond – David Mattila (Hawaiian Islands Humpback Whale National Marine Sanctuary/ detail with International Whaling Commission)

- North Pacific Humpback Whaling – Lou Herman (University of Hawaiʻi emeritus professor)

- Intentional approach / enforcement – Elia Herman (Hawaiian Islands Humpback Whale National Marine Sanctuary)

- Whale-vessel contact (ship strikes) – Adam Pack (University of Hawaiʻi at Hilo)

- Anthropogenic noise (e.g. SONAR, vessel traffic) – Marc Lammers (Hawaii Institute of Marine Biology)

- Entanglement – Ed Lyman (Hawaiian Islands Humpback Whale National Marine Sanctuary)

- Competition for habitat/ space (e.g. offshore development) – Phil Fernandez (Sanctuary Advisory Council Fishing Seat)

- Water quality – Joseph Paulin (Hawaiian Islands Humpback Whale National Marine Sanctuary) with Sarah Mesnick (on detail from NOAA Southwest Fisheries Science Center)

Enforcement - Take Tomson (NOAA Office of Law Enforcement), Eric Roberts (U.S. Coast Guard), Alexa Cole (NOAA General Counsel for Enforcement and Litigation)

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Presentations were conducted using the following general format:

- *Background on threat/ concern (incl. biological, cultural, socioeconomic)*
- *Potential impacts on:*
  - *Population level (e.g. magnitude of threat, trend, high-risk areas)*
  - *Individual whales*
  - *Cultural/ socioeconomic aspects*
- *Potential sources or causes*
- *Existing authorities*
- *Current mitigations (incl. effects upon Hawaiian culture, socioeconomic aspects)*
  - *Broad scope (global)*
  - *Local (partner agencies - grass-root)*
  - *Hawaiian Islands Humpback Whale National Marine Sanctuary*
- *Possible recommendations (i.e. examples)*
- *Questions/ discussion*

PUBLIC COMMENT PERIOD
Members of the public in attendance were given opportunity to provide comments. No comment provided.

Friday, September 9, 2011

OPENING
Sol Kaho'ohalahala offered foundational cultural perspectives on the working group's efforts, emphasizing that an effective way forward can be found by looking to the past: I ka wa ma mua, ka wa ma hope.

DEVELOPMENT OF DRAFT RECOMMENDATIONS
Facilitated small breakout groups were formed to develop recommendations on the following issues: Anthropogenic Noise, Whale-vessel contacts, Entanglement and Competition for habitat, Intentional Approach, Other. Participants were free to stay at one group for the duration of the activity (which lasted approximately 2.5 hours), or participate in other groups.

Topics and their facilitators were as follows:
- Anthropogenic noise – Sarah Mesnick
- Whale-vessel contacts – Joseph Paulin
- Entanglement and Competition for habitat – Justin Viezbicke
- Intentional approach – Ed Lyman
- Other (incl. water quality and research) – Jean Souza

SHARING / DISCUSSION OF DRAFT RECOMMENDATIONS
Draft recommendations from each of the five breakout groups were collectively reviewed by all workshop participants. This discussion included any recommendations which were included from

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presentations given on the first day of the workshop. Representatives from each topic breakout group gave short overviews of their group's discussion, as well as explanations for draft recommendations which they provided to the larger group. Participants were given the opportunity to pose questions to each other and discuss the recommendations.

PUBLIC COMMENT PERIOD
Members of the public in attendance were given an opportunity to provide comments. No comment provided.

Appendix B – Original compiled recommendations from September 8 and 9 Humpback Whale Protections working group workshop:

All recommendations provided during the Humpback Whale Protections working group workshop will be forwarded to the full sanctuary advisory council for review. However, workshop working group members were given the opportunity to indicate what they considered to be the 10 recommendations of highest priority. Each participant received a hard copy of all recommendations that were provided during presentations, discussion, and during breakout groups, in addition to 10 stickers by which they could indicate their support. They were also encouraged to indicate disagreement and accompanying comments on any recommendation by writing directly on their hard copy. The results of the working groups efforts are provided below. Recommendations are sorted by each threat as prioritized by the working group's support towards. Recommendations in **bold** typeface represent the top recommendations as established by members of the working group.

<u>Whale-vessel contacts (Ship strikes):</u>

1. Implement (potentially), pilot study, and/ or test a speed limit less than 14 knots specific to whale season and maintain a thrill craft seasonal ban in the four-island region (Maui, Molokai, Lana and Kaho'olawe). Breakout group members characterized area as having:

- **Largest whale concentration**
- **Largest calf concentration**
- **Preferred by mothers with calves**
- **Seasonal ban of thrill craft**
- **Majority of strikes occur here (9 support, 0 disagree)**

Additional comments:

- *Note: recreational community was not represented in workshop and they represent a large segment of boat traffic*

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2. Continue supporting research by:

- **Partnering with research groups that have conducted shore-based and/or boat based surveys and offer GIS mapping assistance of their data to better understand habitat usage by whales (are there high risk and low risk areas or times of day?)**

- **Examine humpback whale's detection capability/ response to vessel noise?**

- **Examine ways to improve detection of animals and whether these technologies can be piloted (9 support, 0 disagree)**

3. If considering speed limits, the following should be examined:

- **Island specific issues**
- **Type and size of boats**
- **Reasonable speed (what does that mean?)**
- **Vessel traffic**
- **Whale density**
- **Use of an area by humpback whales (type of use)**
- **Any speed limit should be based on latest research**
- **Reasonable speeds may differ depending on conditions**
- **Mother-calf pairs (8 support, 0 disagree)**

Additional comments:

- *Note: Also [consider] determined impact to whales*

4. Publicly announce (e.g. press releases and outreach efforts) prior to and during whale season the presence of humpback whales and recommendation that boaters should slow down (message conveyed over and over – everyday). In doing so, provide:

- More information
- Which areas to avoid
- Which areas represent high-density areas
- Science (6 support, 0 disagree)

5. Continue outreach/awareness (as to increase caution around whales and reporting of incidences). (5 support, 0 disagree)

6. Work with respected community members, "train the trainers", for fishermen and extend to other groups. (5 support, 0 disagree)

Additional comments:

- *Note: this doesn't capture what was said; because local communities of ocean users do not trust officials, training respected community leaders to conduct outreach would be a way to get the message to the local contingent*

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7. Make sure speed limits that are implemented have adequate monitoring and enforcement provisions. (4 support, 0 disagree)

8. Continue response efforts to assess animals reported or suspected of being involved in a strike, including necropsies (often blunt force trauma is not evident from initial assessment). (3 support, 0 disagree)

9. Conduct a follow-up survey of mariners to determine public's perception of whether most collisions are reported. (3 support, 0 disagree)

10. Provide better inter-agency cooperation and communication, including dissemination and sharing of data (2 support, 0 disagree)

11. Consider encouraging speed limits during height of whale season (note: thrill craft ban in place during whale season. (3 support, 1 disagree)

Additional comments:

- *Wait until detail study of various boat and locale info*

12. Offer captain certification program (e.g. proper operation around whales); not just for whale watch operators, but also for charter tours (e.g. fishing). Might be valuable in tourist industry to show certification. (2 support, 0 disagree)

Additional comments:

- *Note: PIRO is working on DolphinSmart Program like this, so the model is in place*

13. Implement research efforts to follow up on health of a whale that has been struck by a vessel. (1 support, 0 disagree)

14. Encourage continued inter-vessel communication about the locations of whale pods (i.e. vessels can help other vessels know whale locations). (0 support, 0 disagree)

15. Partner with existing universities / NGOs with existing survey databases to determine if vessel corridors are implementable. In order to reduce any impacts if a vessel-whale contact occurs, also consult with people who live in the areas and the non-scientific community (e.g. traditional ecological knowledge). Note: navigation issues will likely involve the Army Corps. (1 support, 1 disagree)

16. Consider the pros/cons of encouraging propeller guards; realizing more information is needed. (0 support, 1 disagree)

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Additional comments;

- *Note: consider also speed exemption for "novel" whale safe hull and drive designs. not for whales, made for swimmers*

17. Recommend observers on board vessels to monitor whale watch vessels, fishing boats, vessels in high-whale density areas. (0 support, 2 disagree)

Additional comments:

- *Not needed; use other vessels to monitor*

Entanglement:

1. Continue to work with all partners, universities, and ocean communities to increase capability for life-threatening entanglement response. (7 support, 0 disagree)

2. Continue to study entanglement impacts and risks in order to improve response efforts and prevent entanglements (i.e. whale safe gear, regional / national / international) (7 support, 0 disagree)

3. Improve and build entanglement information system (i.e. social media)
Increase information and availability for shared information and increased education communication (e.g. Facebook, iPhone app, real-time updates). (7 support, 0 disagree)

4. Work with local fishermen to investigate their techniques to avoid entanglements. (6 agree, 0 disagree)

5. Free some animals from life-threatening entanglements. (2 support, 0 disagree)

6. Coordinate with marine debris program to remove reported debris from sanctuary waters. (2 support, 0 disagree)

7. Evaluate the success of entanglement response. (2 support, 0 disagree)

8. Provide experienced, authorized, and safe response by working with community. (0 support, 0 disagree)

9. Increase capacity building (networking). (0 support, 0 disagree)

10. Increase awareness (outreach). (0 support, 0 disagree)

11. Gather, disseminate/share information to reduce risk. (0 support, 0 disagree)

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Intentional Approach (Harassment):

1. Provide better education / outreach on protection (e.g. 100 yard rule), especially for recreational users. Provide outreach (PSAs) that focus on recreational / general public in regard to intentional close approaches to humpback whales. Addresses the idea that "close approach rules" applies to all – whale lovers, supporters, etc…the Alexa Cole example. (8 support, 0 disagree)

2. Develop mandatory outreach / education to ocean user community (boat operators, kayakers, stand-up paddlers, everyone) on close approach and safe operation around humpback whales (e.g. ocean user workshops, action-reaction workshops, with vessel registration, charter and rental agreements, ocean awareness training). (7 support, 0 disagree)

3. Support recommendations on the number of boats and time spent with humpback whales, including current industry-determined standards (self-regulation e.g. 3 vessels on an animal at any one time). (4 support, 0 disagree)

4. Support current enforcement "attitude" which recognizes that the use of Hawaii's waters by ocean users results in unintentional "close approaches" (<100 yards). (3 support, 0 disagree)

5. Understand / research impact (i.e. effects upon) on animal, but also larger picture of impacts on ocean users. (3 support, 0 disagree)

6. Investigate / pursue technologies that would assist in avoiding close approaches (e.g. range finders). (2 support, 0 disagree)

7. Re-do/ do more surveys of "near misses/ surprise encounters" like those done in past by Trilogy and more recently by Pacific Whale Foundation (1 support, 0 disagree)

8. Encourage greater information sharing between operators / users that might reduce incidence or likelihood of close approach (potential for harassment). (0 support, 0 disagree)

Anthropogenic noise:

1. Characterize the soundscape of sanctuary waters to establish baselines and monitor change using long-term monitoring (e.g. sentinel sound sites). Include in the biogeographical assessment, sound sources such as shipping lane vessel traffic and other high use areas, military operations and offshore development (8 support, 0 disagree).

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Additional comments:

- *Note: conduct comparative study using areas that are used by whale and are subject to extremes in levels of noise*

2. Support research efforts (e.g. boat time, letters of support, access, permitting) to better understand: (a) mysticete hearing, (b) thresholds for avoidance, tolerance, harm, (c) changes in whale song, social sounds and behavior (navigation, mating) with different levels of sound exposure. (6 support, 0 disagree)

3. Limit sound within the sanctuary during whale season to comply with the precautionary principle; the National Marine Sanctuary Noise Policy (2007) and Dr. Jane Lubchenco's 2010 letter stating that in NOAA's view, we must do more to "address uncertainties and protect marine mammals from sonar impacts". Suggest that the determination of sound limits be determined based on (a) measured levels singing whales expose each other to, (b) the noise levels recorded outside Hanalei Bay during the melon-headed whale stranding in 2004 and other significant noise events, (c) research on sound levels that have resulted in behavioral disruption in humpbacks and other species. These 3 lines of evidence collectively suggest that harm can be avoided if noise is kept below 140-145 dB. Consider that seasonal limits of boat speed in the sanctuary will improve the soundscape. (7 support, 2 disagree)

Additional comments:

- *Use scientist-recommended "natural experiments"*
- *Define current impacts and how this mitigates*
- *Note: this recommendation is at times too vague and at other times too specific*

4. Adjust boundaries to include the moku of Na Pali, coincident with whale distribution and cultural boundaries, and engage cultural practitioners, local fishers and the military in the determination of adjusted boundaries. (6 support; 7 disagree)

Additional comments:

- *Don't waste effort or goodwill capital; noise is least significant threat (for humpbacks)*
- *Define current impacts and how this mitigates*
- *All boundaries need to be adjusted, not just this one*

5. Consider the creation of seasonal quiet zones (pilot areas) with lower decibel levels at highly frequented areas for humpback whales, such as Penguin Banks, Maalaea Bay, and Auau Channel. Several working group members expressed strong objection for seasonal quiet zones in Maalaea and Auau channel. Was also pointed out that there exists a high density of humpback whales in Auau and Penguin Banks, despite likely differences in anthropogenic noise. Look at how speed relates to noise, with regard to boat type, etc. (2 support, 6 disagree)

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Additional comments:

- *Use scientist-recommended "natural experiments"*
- *Strong objections to Maalaea and Auau as being used as a quiet zone*
- *Unless there is a defined impact this should not be implemented. The population is increasing. Note: one specific vote for "look at how speed relates to noise, with regard to boat type, etc. Another comment related: This (speed and noise) will also be a function of sea state. For instance, travel into wind will involve higher engine speed (and more noise) and may have little to do with speed of boat travel.*
- *Conduct study of natural areas with different noise levels*

Competition for habitat (e.g. offshore development):

1. Pursue investigation of habitat and use by humpback whales to identify key characteristics to better inform management decisions. (7 support, 0 disagree)

2. Coordinate with partners and communities CMSP workshops to determine preferred areas for offshore development. (6 support, 0 disagree)

3. Pursue a precautionary approach when it comes to offshore development. (3 support, 0 disagree)

Additional comments:

- *Note: but open! Take the no out of NOAA.*

4. Develop worldwide information repository for whale interactions with offshore development. (3 support, 0 disagree)

5. Provide greater protection inside sanctuary than outside. (2 support, 0 disagree)

6. Utilize CMSP to locate proposed developments in appropriate sites, preferably outside sanctuary waters. (2 support, 0 disagree)

7. Actively participate in state and federal permitting processes (Ability to act within timeline). (2 support, 0 disagree)

8. Implement NMSA Section 304(d) *

9. Stay current on federal and state regulations and permitting requirements*

10. Develop knowledge base in offshore development and mariculture, and contribute to the community's knowledge*

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Water quality:

1. Continue to partner with existing stranding network (PIRO, HPU, MMHSRP) to identify diseases and pollutants of concern in tissues of humpback whales. (3 support, 0 disagree)

2. Based on study results and testing, sanctuary to consider encouraging commercial tour operators statewide to pump out holding tanks in pump-out facilities. (3 support, 0 disagree)

3. Sanctuary should expand water quality testing through partnerships with agencies (DOH, DLNR), university, and communities, to include additional pathogens. (2 support, 0 disagree)

4. Support beach cleanups, marine debris removal projects and management of marine debris in sanctuary waters in partnership with NOAA and others (2 support, 0 disagree)

5. Provide education and outreach opportunities to share findings from joint agency efforts. (1 support, 0 disagree)

6. Support DOCARE / OLE partnerships to enforce regulations in sanctuary. (1 support, 0 disagree)

7. Partner in monitoring programs. (0 support, 0 disagree)

8. Support collaborations (land-based pollution). (0 support, 0 disagree)

9. Identify gaps in enforcement and regulations. (0 support, 0 disagree)

10. Consider effectiveness of water quality programs in other sanctuaries (0 support, 0 disagree)

11. Support education and outreach efforts towards improving water quality. (0 support, 0 disagree)

12. Pursue ecosystem-based sanctuary. (0 support, 0 disagree)

13. Investigate vessel discharge (0 support, 0 disagree)

14. Evaluate effectiveness and adaptability of water quality programs in other sanctuaries. (0 support, 0 disagree)

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Other - Research:

1. Sanctuary to help identify and fill humpback whale research gaps.
We can't protect what we don't understand. Where humpback whales mate, preferred birthing habitat (aside from depth and temperature), night-time behavior, how distribution of females drive distribution of males, dynamics of humpback whale distribution, recent aerial surveys, humpback whale association with other species, migratory route changes in response to climate change, place-based demographics, mating system and dynamics, residency, who are the humpback whales in PMNM, vocal communication beyond song, use of water column and ocean bottom, and function of song. (11 support, 0 disagree)

2. Sanctuary to be a catalyst for collaboration of humpback whale research in Hawaii and internationally. Collaborate with other sanctuaries internationally; orientation for SAC members and staff about other whale sanctuaries internationally. SPLASH II. (5 support, 0 disagree)

3. Identify and secure financial resources to support humpback whale research. (5 support, 0 disagree)

Other - Financial:

1. Sanctuary should expand its fundraising capacity to support priority projects (beyond federal government funds).

Addition from discussion: Idea to collect from visitors for foundation, specific foundation for this sanctuary, facilitates process to make researchers more aware of opportunities, collaborate with other councils. (3 support, 0 disagree)

2. Explore getting donations from visitors / tourists (consider developing a foundation specifically for HIHWNMS). (3 support, 0 disagree)

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* Recommendations were provided by presenter, but overlooked in compilation sheet provided to working group for evaluation and voting.