Minutes for the Pacific Scientific Review Group Meeting
Maui, Hawaii, 19-21 November 2008

The nineteenth meeting of the Pacific Scientific Review Group (SRG) was held at the Hawaii Humpback Whale Sanctuary facility on Maui, HI from 19-21 November 2008. All SRG members were present except for Robin Brown. Jim Carretta and Karin Forney served as rapporteurs. Michael Scott served as chairman of the SRG. The SRG members and other participants are listed in Appendix 1, review documents are listed in Appendix 2, and the agenda of the meeting is in Appendix 3.

General Topics

MMPA updates. Tom Eagle reported that there are no updates to the MMPA pending. A bill was introduced to streamline the MMPA Sec. 120 process (lethal removal), targeted at CA sea lions near the Bonneville Dam, but it was not passed. The earliest expectations for MMPA revisions would be 2010. Eagle reviewed the recent Supreme Court decision to allow the Navy to continue using sonar in southern CA waters while they prepare an EIS.

GAO Review of the Take Reduction Teams. Tom Eagle reported that GAO, under a request from the House Resources Committee, was investigating our implementation and success of TRTs. Preliminary findings include that data were insufficient to make informed decisions regarding the formation of TRTs and that TRT deadlines for meeting PBR and ZMRG goals were not being met. More realistic timeline development for TRTs is one solution. NOAA will likely be asked for an analysis of what appropriate timelines for implementation of MMPA goals would be. [The GAO Report subsequently was published in December 2008.]

List of Fisheries. Melissa Andersen presented the proposed LOF changes for 2009. There is an addition of high-seas fisheries (*e.g.*, portions of HI longline fisheries that operate outside the EEZ) to the LOF. The majority of the high seas fisheries are added as Category II based on insufficient information to determine marine mammal take levels, while the deep-set portion of the high seas longline fishery will be added as a Category I (the same Category the fishery is classified within the EEZ). Within the EEZ, the Hawaii longline fishery is split into a deep-set fishery (that remains Category I due to false killer whale interactions) and a shallow-set fishery (recategorized as a Category II). US west coast pot and trap fisheries were reorganized, with some being reclassified from Category III to II (based on interactions with humpbacks). The four recategorized fisheries were the CA spot prawn fishery, WA/OR/CA sablefish pot fishery, OR Dungeness crab pot, and CA Dungeness crab pot. The CA halibut/white seabass fishery was reclassified from a Category I to Category II to reflect the ban on fishing north of Pt. Arguello and the subsequent reduction of harbor porpoise interactions to zero in this fishery.

Separation of high-seas and EEZ fisheries is based on the different permitting processes, but the same vessels may fish in the same fisheries on the high seas and in U.S. waters. The SRG briefly considered the implications of this change: for example, would there

eventually be SARs and PBRs for high-seas stocks, and eventually more management? The SRG decided to discuss this in more detail at its next meeting. Tom Eagle noted that MMPA Sec. 102 prohibits the taking of marine mammals on the high seas, so including these vessels on the LOF process can provide these vessels with an incidental take authorization.

The SRG suggested that the WA Dungeness crab pot fishery be included with the CA and OR fisheries because of observed marine mammal entanglement. The SRG asked NMFS to analyze for next year's meeting the effect of Marine Protected Areas (MPAs) on marine mammal entanglement due to shifting fisheries effort out of the MPAs.

Serious Injury Workshop Report. Melissa Andersen reviewed the 2007 workshop and the resulting Technical Memorandum. The goal was to update the existing guidance for determining serious injury to marine mammals. Suggestions included establishing and improving national consistency in serious injury determinations, convening a national panel to review serious injury determinations, and developing and using consistent terminology. The next steps will be to: 1) assess the table developed at the workshop by applying it to actual cases to see where disagreements exist between staff responsible for serious injury determinations, and recommended revisions to the table; 2) develop a nationally agreed-upon serious injury determination process and nationally agreed-upon guidelines; and 3) publishing a serious injury determination policy (similar to the GAMMS report). The SRG suggested its current process (proposed determination by NMFS followed by a review by the SRG) could be expanded to include review by veterinarians at the NMFS Office of Protected Resources (*e.g*. Teri Rowles or Janet Whaley) prior to SRG review.

Magnuson-Stevens Reauthorization Act (MSRA) Confidentiality Issues. Tom Eagle and Karin Forney discussed recent NMFS efforts to reconcile the confidentiality requirements of the MSRA with laws governing the management of species under the MMPA and ESA. Despite the similarity of the language between MMPA and MSRA, some language changes may impact the type of information that can be disclosed. Until national guidance is provided, the different NMFS centers and regions are being precautionary in what information is released. In some cases, a traditional approach is followed (data are only confidential when it reveals the identity or fishing practices of individual vessels or companies), while others interpret the new language more strictly to prohibit plotting of fleet-wide fishing locations or bycatch locations. Internal NMFS discussions are ongoing and a resolution of the remaining questions is expected during 2009.

Joint Meeting Recommendations. Tom Eagle reviewed the potential recommendations and minutes of the joint meeting of the SRGs held in January 2008. The SRG discussed its own recommendations from that meeting: consistency in the SARs, a global warming workshop (being planned by the IWC), an SRG website (already established by the SWFSC), and alternative ways to monitor abundance (already described in a letter from the Alaska SRG). The SRG decided to include the first recommendation (on SAR format) in the recommendations from this meeting.

SRG website. Jim Carretta and Michael Scott reviewed the availability of PSRG minutes and recommendation documents at the SWFSC website. The SRG discussed creating additional links at the website for SAR references and a section describing who the SRG members are.

Pacific Islands Fisheries and Management

Personnel changes at PIFSC and PIRO. Bud Antonelis and Lisa Van Atta described these changes. Erin Oleson will replace Dave Johnston as cetacean program lead. PIFSC is hiring a new monk seal mortality mitigation coordinator. At PIRO, Chris Yates moved to the Long Beach office in August and candidates are currently being interviewed. A stranding and response assistant coordinator will be hired to increase the size of that program to 2 persons. The assistant position will be based in Oahu. A monk seal recovery coordinator is the next-highest priority for PIRO. The SRG expressed concern that, while the lack of cetacean personnel has been balanced by heroic efforts of PIFSC and PIRO cetacean staffs, this effort cannot be sustained by so few individuals.

False killer whale interactions. Lisa Van Atta reported that 2008 interactions in the Hawaii fishery are still above PBR and a TRT still has not been convened due to lack of funds. Michael Marsik described observer data form changes designed to prompt the observers to collect required information. There were 3 deep set and 1 shallow set false killer whale interactions in 2008, all inside the EEZ. Marsik reviewed the American Samoa albacore longline fishery. There is only 6% observer coverage in this fishery and the observer program has already documented one injury and one mortality of false killer whales, and one injury of a rough-toothed dolphin.

Longline effort in international waters. Karin Forney described efforts to examine international fishing data to assess the amount of total longline fishing effort and relate it to how many false killer whale interactions may be occurring. Michelle Yuen reported that Japan, China-Taipei, and Vanuatu are the major countries whose longline effort overlaps with U.S. fishing.

HI monk seal management. Michelle Yuen reviewed an addendum to HI monk seal recovery plan that is in progress, pupping events, rescue efforts, and a petition to revise critical habitat.

Human interactions with spinner dolphins. Melissa Andersen reported that harassment by dolphin-watch tour operators, kayaks, and private swimmers have become increasingly problematic for spinner dolphins. An EIS is being drafted, suggesting time/area closures as one potential solution. The SRG supported NMFS intentions to establish regulations to reduce harassment and will monitoring progress on this issue. Tour operators based in Oahu will be able to get certified under a Dolphin SMART Program after being educated on proper boat handling near dolphins and evaluated by Dolphin SMART staff. The SRG suggested that NMFS involve Maui tour operators from inception of any Dolphin SMART Programs as these operators already operate under voluntary guidelines.

Pacific Islands Research and SARs

Hawaii cetacean research updates. Robin Baird reported on survey, sampling, tagging, and tracking studies conducted over the last nine years. Five species have been satellite tagged: false killer whales, Cuvier's and Blainville's beaked whales, melon-headed whales, and short-finned pilot whales. Assessment of dorsal fin damage and healing has been done on pilot whales and Cuvier's beaked whales, with complete healing observed later. Baird showed some interesting island usage patterns for pilot whales and Blainville's beaked whales – they appeared to avoid portions of the windward side of Big Island.

Baird presented evidence for a decline in insular false killer whales, overlap between insular and offshore populations, and potential overlap between the insular population and the longline fishery. Historic group sizes of false killer whales reported by Reeves and Leatherwood were much larger than recently recorded group sizes. Baird reviewed continuing risk factors to false killer whales, including a decline in game fish biomass in the Hawaii region, which is probably impacts the false killer whale prey base. High levels of persistent organic pollutants are another risk factor.

Pacific Islands Photo-Identification Network Marie Chapla Hill described the start of a collaborative photo-ID catalog for cetaceans in the Pacific Islands region. Funding has been provided to several groups conducting research in the area.

Hawaiian monk seal (HMS) research. Charles Littnan reviewed methods being used to link ecosystem variability to monk seal foraging and subsequently, its effect on population dynamics. These include telemetry work, diet analysis, juvenile foraging success, and examination of spatial use patterns for foraging using telemetry and state space models. Genetic diversity of HMS population is extremely low, based on microsatellite analyses. Juvenile mortality remains high in the population. A shark-deterrence program has been attempted to reduce predation on juvenile seals.

Monk seal SAR. Jason Baker reviewed the HMS SAR and reiterated the population's extremely low genetic diversity. There was a genetic bottleneck in the population around 1870 when the population was reduced to perhaps a few dozen animals. The population recovered, but genetic diversity remained very low. The population decline in the Northwestern Hawaiian Islands continues at approximately -4% yr. Seals continue to interact with hook-and-line and gillnet fisheries. Continued declines in funding have been problematic for many aspects of the program, including population monitoring.

Spotted dolphin genetics. Sarah Courbis is finding evidence of population structure among 4-island, Hawaii, Oahu, and Kauai, Niihau, but no support for sex-biased dispersal. Differentiation is sufficient to consider separate stocks. It was suggested, however, that the program STRUCTURE should not be used to examine distance-based differences for animals.

Summary of cetacean information for Pacific Islands. Bob Brownell and Kathy Ralls reviewed the available information on marine mammals associated with Pacific Island EEZs that are not currently described in SARs and made recommendations for future research. For American Samoa, they recommended training of local researchers in the work of the PIFSC, expanding stranding programs, and observations of the albacore longline fishery. For Baker and Howland, they recommended examining cetacean data from historic coral reef surveys. For Guam and Northern Marianas area, abundance estimates from a 2007 survey exist for several species. For Jarvis, little is known about the cetacean fauna except that bottlenose dolphin were seen there in the 1960s. For Johnston Atoll, SWFSC sighting data exist on short-finned pilot whales, spotted dolphin, false killer whales, and rough-toothed dolphins. At Palmyra Atoll and Kingman Reef, abundance estimates are limited to false killer whales, although SWFSC sighting data exist in this area for sperm whales, spinner, spotted, and striped dolphin, short-finned pilot whales, rough-toothed dolphin and Bryde's whales. There have been 5 strandings of *Mesoplodon* at Palmyra since 2001/2002, which might be an undescribed species. Investigations are needed to determine the cause of this unusual cluster of strandings. Wake Island is the poorest known region for cetacean fauna. Smithsonian expeditions visited in the mid-1800s and there have been Cuvier's beaked whale strandings recorded from Wake. The SRG recommended that the background document be published as it provides basic data for new SARs. The highest priority for SARs would be American Samoa because of observed fishery mortality, and Guam because an anti-submarine warfare base is planned to be built there and sonar operations may prove to be an issue.

RIMPAC study. Marie Chapla Hill reported on a DTAG (digital acoustic recording tag) research cruise coinciding with RIMPAC exercises near Kauai. The primary objective was to deploy DTAGs on beaked, pilot, and melon-headed whales, and assess movements in relation to habitat parameters. DTAGs record sound, pitch, roll, heading, and depth; five were deployed on pilot whales and recovered off Hawaii, resulting in 31 hrs of recordings.

Pacific Islands Cetacean Bycatch. Karin Forney described new bycatch estimates for cetaceans in the Hawaii-based longline fisheries, based on methods developed last year by Marti McCracken that take into account the probability of sampling each trip (Horvitz-Thompson estimator). Bycatch estimates for 2007 are 8 false killer whales in the Hawaii EEZ, 2 in Palmyra, and 3 outside the EEZ. There was also bycatch of short-finned pilot whales, Risso's and bottlenose dolphins. A complication is which stock to assign the false killer whale bycatch to given the Baird et al. tracking information.

False Killer Whale SAR. Karin Forney reviewed the changes in the false killer whale SAR that include new text to reflect telemetry study and pollutant data, updating of bycatch estimates, and text discussing a possible long-term decline in abundance. The HI pelagic stock is strategic, while the HI insular and Palmyra Atoll stocks are not. If a "high seas" stock were to be considered, the levels of mortality and serious injury would exceed the PBR, which would make this stock strategic. Similarly, a transboundary (HI EEZ and high seas) pelagic stock would also be strategic. A general discussion ensued about efficient ways to assess the insular stock of false killer whales: 1) continued

satellite tagging; 2) getting additional biopsies; and 3) shifting observer resources to better assess the insular stock area.

The SRG believes that the division of takes between insular and pelagic stocks of false killer whales in Hawaii should be done in a manner that recognizes that there is likely an area of overlap between these two stocks and that both stocks likely occur in areas of potential pelagic long-line takes. The satellite tag data can be used to establish the boundary and area of overlap based on the farthest distance from shore the insular stock has been detected and the closest distance to shore the pelagic stock has been detected. The SRG suggested defining an area of overlap within which any mortality could be prorated between the insular and pelagic stocks. Karin Forney agreed to explore this with alternate methods for defining the area of stock overlap and apportioning mortality. The SRG will review these methods when they are completed. The SRG also urges that more information about near-shore fisheries that may potentially take false killer whales be collected to determine whether fishery mortality has played a role in the apparent decline in the insular population.

American Samoa Humpback SAR. Bob Brownell presented a new SAR for this species. Based on photo-id work begun in 2002, a minimum population size of 92 southern hemisphere animals has been estimated within the American Samoa EEZ. This is part of a larger population of unknown size and the population's complete area of use is unknown. The current hypothesis is that this is a breeding and migration area, not a feeding area.

CA/OR/WA Fisheries and Management

Observer Program Update. Jim Carretta updated the SWR observer program activities. In 2007, four fisheries were observed (swordfish drift gillnet, halibut set gillnet, squid and sardine purse seine, and deep set longline). Observer coverage was 16% in the swordfish fishery and 18% in the set gillnet fishery. Declines in funding have reduced the observer program to only 7 observers and only the swordfish drift gillnet fishery and the 1-vessel deep set longline fishery are currently observed.

2007 CA Bycatch Estimates. Jim Carretta reported that the estimated bycatch in the swordfish drift gillnet fishery in 2007 was 54 short-beaked common dolphin, 6 Pacific white-sided dolphin, 6 northern right whale dolphin, 48 California sea lions, and 1 northern elephant seal. For the halibut set gillnet fishery, estimated bycatch was 190 California sea lions, 11 harbor seals, and 5 unidentified pinnipeds.

Blue whale ship strikes and SAR. John Calambokidis reported five blue whale deaths attributed to ship strikes, including a female with a fetus at San Miguel Island. Mitigation measures have been implemented by NMFS, including broadcasts to mariners, discounts for vessels that travel at slower speeds, and weekly overflights to document the small-scale distribution of blue whales. As a possible strategy to mitigate serious injury and/or mortality to large whales from ship strikes in the Santa Barbara Channel, the SRG discussed whether NMFS could partner with the Ventura Country Air Pollution Control District and the shipping industry to develop an incentive program to reduce vessel speed.

For example, a portion of the ship's fuel costs during the Santa Barbara Channel transit in return could be rebated in return for reducing ship speed to a 10 knot maximum, thereby reducing injury to large whales as well as reducing emissions and improving the Ventura District's air quality.

Discussion of the blue whale SAR focused on the observed differences between line-transect (LT) and mark-recapture (MR) abundance estimates. Explanations for these differences include the fact that a LT estimate is a density estimate based on the number of animals within the U.S. EEZ, while the MR estimates reflect the entire population. John C. asked the question of whether or not it would be more appropriate to use either the LT or MR estimate, since they are measuring different things. Jay Barlow favored using the MR estimate and adjusting this estimate to reflect the fraction of animals using the EEZ at any one time.

Other marine mammal mortality. Jay Barlow reported that SWFSC sardine research surveys in 2008, utilizing trawl gear, resulted in the incidental mortality of CA sea lions (11), northern fur seals (3), Pacific white-sided dolphins (15), and northern right whale dolphins (6). These mortalities occurred even after acoustic pingers were used in the trawls. The SRG thought it peculiar that so few carcasses were brought back when the mortality occurred during a NMFS research cruise.

CA/OR/WA Research and SARs

ORCAWALE 2008. Jay Barlow reviewed the visual line-transect, acoustic towed array, biopsy, and oceanographic sampling operations during the ongoing cruise. Preliminary information indicates that beaked whales were more abundant during the 2008 cruise than in past years, as well as fin whales. One sighting of a large group of short-finned pilot whales (a strategic stock) was made, which should increase future abundance estimates. Several sightings of long-beaked common dolphins should also have the same effect.

Humpback Whales and SAR. John Calambokidis presented the results of SPLASH humpback genetics, which shows the CA/OR/WA stock as having many more haplotypes when compared with other stocks. The SRG plans to re-examine current stock boundaries in light of this new evidence.

Harbor porpoise abundance and SARs. Jim Carretta reviewed abundance estimates for harbor porpoise in WA/OR/CA coastal waters that were revised to reflect a shift in the stock boundary to near Lincoln City, OR. The SRG then reviewed the harbor porpoise SARs. The observed growth rate of the Morro Bay stock of harbor porpoise is approximately 10% annually. The Monterey Bay stock showed a decline however. The harbor porpoise SARs currently use an R_{max} of 4% for harbor porpoise populations and the SRG asked if 10% would be more appropriate. Alternatively, the stock boundary between the Monterey Bay and Morro Bay populations may not be real and the combined growth rate would not be as high.

Southern sea otter SAR. Lilian Carswell (via phone) reported that the most recent 3 yr average is 2,826 otters. The annual population growth rate on the mainland range is

~3%. Stranding levels remain high, at 9.9% of spring count. The latest spring 2008 count was 2,760 otters, which is less than the spring 2007 count of 3,026 otters. Non-fishery anthropogenic mortality is ~6.8 annually. The final SAR is scheduled to be published on December 5, 2008. N_{min} is calculated as the 20th percentile of log-normal distribution of average counts from 2006-2008, or 2,680 otters. Concern remains over interactions with trap fisheries. The San Nicolas Island population is not included in N_{min} and PBR calculations, as it is considered part of the transplanted 'experimental population'. An SRG suggestion to include information about interactions with purse seines in future SARs was made.

WA sea otter SAR. Deana Lynch (via phone) reported that the SAR was finalized and made publicly available in October 2008. A couple of strandings each year are attributed to canine distemper/morbillivirus. River otters in the same range suffer from canine distemper and there may be a link to the distemper observed in sea otters.

Southern Resident Killer Whale SAR. Brad Hanson (via phone) reported that as of July 2008, there were 85 whales, which is one fewer animal than recorded in 2007. Known mortalities included one sub-adult male and two post-reproductive females during the July 2007 – 2008 period. One calf, J43, was first sighted in November 2007 but not present during the summer of 2008. Mortalities since July 2008 include one calf (L111, only alive for a couple of weeks) and 2 reproductive age females (J11, L67). Current MNPL is ~3.5 % yr. Links between killer whale survival rates and salmon abundance are being studied. Biopsy sampling reveals high levels of PBDE pollutants. Development of procedures to apply satellite tags to SR killer whales was discussed, touching upon the scar-healing results from Hawaiian pilot whales fitted with such tags. Hanson reported that 3 transient killer whales had been satellite-tagged, as a precursor to eventually tagging southern residents. Initial efforts to satellite tag SR killer whales will target only sub-adult and adult males. Other issues include education and outreach partnerships, on-water monitoring, Section 7 consultations on fisheries, and a vessel approach proposed rule being finalized.

Predictive modeling of marine mammal density SEDRP. Jay Barlow described new methods to model and predict cetacean density based on habitat variables. He described software development that would allow users to select small areas (such as military operating areas) to evaluate the densities of marine mammals in that area. Duke University collaborators developed the web-based software. Karin Forney has received funding from NASA to support a post-doc, Elizabeth Becker, to continue model development and improvement in collaboration with Duke and SWFSC's Environmental Research Division.

Topics, Timing and Location for Next Meeting

It was tentatively decided that the next meeting would be in November-December 2009 at La Jolla, CA. Topics would include:

1) Review of false killer whale research, management, and SAR.

2) Implications for fishing effort changes that may have occurred in response to establishment of Marine Protected Areas in California.
3) Implications of including high-seas fisheries in the List of Fisheries.
4) Re-examination of humpback whale stock boundaries in light of recent genetic information.
5) Review of SARs that include new abundance information from the 2008 ORCAWALE survey.
6) Discussion of potential options for Hawaiian SARs when the abundance estimates get too old.
7) Re-examination of the Monterey Bay/ Morro Bay harbor porpoise stock boundary due to the apparent difference in population trends.
8) Review information from the IWC workshop on climate change.
9) Discussion of the effects of prey limitation on the Southern Resident killer whale population.
10) Review Hawaii spinner dolphin harassment issue.

Review of Previous Research and Management Recommendations

The SRG recommends the Pacific Islands Fisheries Science Center (PIFSC) Protected Species program continue to build its small cetacean research program. The SRG notes that a cetacean survey should be conducted in Hawaiian waters by 2010, and that planning for such a survey should be initiated soon, given the complex planning and extensive resources required for such a survey.

Turnover in personnel has recently occurred in both PIRO and PIFSC. Declining resources and shiptime make it likely that a cetacean survey of Hawaiian waters will not occur until at least 2011.

The SRG continues to recommend that the USFWS publish its Stock Assessment Report on Washington and southern sea otters so that the USFWS can meet its statutory responsibilities under the MMPA.

The SARs for both these stocks have been published in the Federal Register.

The SRG supports continued studies of movements and genetics of false killer whales and other cetaceans around Hawaii and in the Central Pacific to better understand stock structure.

New information on movements, stock boundaries, population trends, and contaminant loads of false killer whales was presented.

Beaked whales are notoriously difficult to study and census, but small-scale studies in favorable localities have been successful. The SRG recommends that studies utilizing photo-identification, radio- and satellite tracking, and biopsies for genetic analysis be conducted where possible on beaked whales.

Blainville's and Cuvier's beaked whales were satellite tagged and tracked off of Hawaii.

RESEARCH AND MANAGEMENT RECOMMENDATIONS
Pacific Scientific Review Group – 19-21 November, 2008

The SRG recommends the Pacific Islands Fisheries Science Center (PIFSC) Protected Species program continue to build its small cetacean research program. The SRG notes that a cetacean survey should be conducted in Hawaiian waters by 2010, and that planning for such a survey should be initiated soon, given the complex planning and extensive resources required for such a survey.

The SRG urges continued studies of movements, abundance, and genetics of false killer whales and other cetaceans around Hawaii and in the Central and Western Pacific to better understand stock structure, population trends, and potential fisheries takes.

Beaked whales are notoriously difficult to study and census, but small-scale studies in favorable localities have been successful. The SRG recommends that studies utilizing photo-identification, radio- and satellite tracking, and biopsies for genetic analysis be conducted where possible on beaked whales. This is particularly important given evidence that naval sonar exercises have had negative impacts on beaked whales, the U.S. Navy plans to expand its activities at Guam, and the recent unexplained strandings of beaked whales at Palmyra.

The SRG recommends that the division of takes between insular and pelagic stocks of false killer whales in Hawaii be done in a manner that recognizes that there is likely an area of overlap between these two stocks and that both stocks likely occur in areas of potential long-line takes. The satellite tag data can be used to establish, and refine over time, the boundary and area of overlap based on the farthest distance from shore the insular stock has been detected and the closest distance to shore the pelagic stock has been detected. Additional tagging should be focused to determine differences in ranging patterns on windward and lee sides of the islands and more information is needed about near-shore fisheries that may potentially take false killer whales to determine whether fishery mortality has played a role in the apparent decline in the insular population.

SRG recommends that NMFS develop SARs for Pacific Islands Territories where they currently do not exist. Priority for research and SAR development should be given to those areas and stocks where there is concern about potential human impacts.

The SRG recommends that continued investigations be conducted on the causes of large whale ship strikes and effective ways to mitigate them. For Southern California where there have been an increase in ship strikes of blue whales, efforts should be pursued to work cooperatively with local governments and the shipping industry to take advantage of potential ways to partner air-pollution control efforts that provide incentives for reducing ship speeds to also provide a potential benefit to reducing ship strikes in the Santa Barbara Channel.

The SRG recommends that harbor porpoise assessment surveys be conducted off Oregon and Washington and in Washington inland waters in light of the long duration since the

last surveys, the Unusual Mortality Event that occurred in this region since the last surveys, and the evidence for recent ecosystem changes and shifts in distribution of harbor porpoise into Puget Sound.

The SRG recommends that a brief statement should be added to the SARs that indicates the level of certainty about the key elements (abundance estimate, stock structure, human-caused mortality) used for determining the status of the stock) together with a prioritized list of information or research needed to improve the assessment for that particular stock.

Appendix 1

Attendees at the 19th Meeting of the Pacific Scientific Review Group

Scientific Review Group - Pacific Region:

Hannah Bernard	Hawai'i Wildlife Fund
Robin Brown	Oregon Department of Fish and Wildlife (*Not attending)*
John Calambokidis	Cascadia Research
Mark Fraker	Terramar Environmental Research
Doyle Hanan	Hanan & Associates, Inc.
Jim Harvey	Moss Landing Marine Laboratories
Chuck Janisse	Federated Independent Seafood Harvesters
Steve Jeffries	Washington Department of Fish and Wildlife
Katherine Ralls	Smithsonian Institution
Michael Scott	Inter-American Tropical Tuna Commission
Terry Wright	Northwest Indian Fisheries Commission

Invited Participants and Observers:

NMFS Southwest Fisheries Science Center
Jay Barlow
Bob Brownell
Jim Carretta
Karin Forney

NMFS Pacific Islands Fisheries Science Center
Bud Antonelis
Jason Baker
Marie Chapla Hill
Charles Littnan
Erin Oleson

NMFS Pacific Islands Region
Adam Bailey
Michael Marsik
Lisa Van Atta
Michelle Yuen

NMFS Northwest Fisheries Science Center
Brad Hanson (*via telephone*)

NMFS Office of Protected Resources
Melissa Andersen
Tom Eagle

Hawaiian Islands Humpback Whale National Marine Sanctuary
David Matilla

USFWS
Deanna Lynch (*via telephone*)
Lilian Carswell (*via telephone*)

Marine Mammal Commission
Bob Gisiner

Cascadia Research
Robin Baird

Hawaii Longline Association
Svein Fougner

Portland State University
Sarah Courbis

Appendix 2

FINAL DOCUMENT LIST
Pacific Scientific Review Group – 19-21 November, 2008

Review Papers

PSRG-2008-01 CA/OR/WA cetacean SARs. (Carretta)
PSRG-2008-02 OR/WA harbor porpoise SARs. (Muto)
PSRG-2008-03 Pacific Islands SARs (false killer whales, American Samoa humpbacks). (Forney/Brownell)
PSRG-2008-04 Southern Resident Killer Whale SAR. (Hanson)
PSRG-2008-05 HI Monk Seal SAR. (Baker/Littnan)
PSRG-2008-06 Southern Sea Otter Draft 2009 SAR. (Carswell)
PSRG-2008-07 WA Sea Otter - Final 2008 SAR and FR notice. (Lynch)
PSRG-2008-08 PIRO Management Updates. (Yuen/Atta)
PSRG-2008-09 Proposed 2009 LOF. (Andersen)
PSRG-2008-10 Re-sightings, healing and attachment performance of remotely deployed dorsal fin-mounted tags on Hawaiian odontocetes. (Hanson)
PSRG-2008-11 HI longline bycatch estimates, 2007. (McCracken/Forney)
PSRG-2008-12 Insular and offshore false killer whales off Hawai'i. (Baird)
PSRG-2008-13 Movements of satellite-tagged false killer whales in Hawaii. (Baird)
PSRG-2008-14 Persistent organic pollutants in HI false killer whales. (Baird/Ylitalo)
PSRG-2008-15 Cetaceans in the non-Hawaiian Pacific Islands. (Brownell)
PSRG-2008-16 Spotted dolphin genetics research overview. (Courbis)
PSRG-2008-17 CA Marine mammal bycatch for 2007. (Carretta)
PSRG-2008-18 CA harbor porpoise abundance 2002-2007. (Carretta)
PSRG-2008-19 SWR Summary - ship strikes, LNG, U.S. Navy. (DeAngelis)

Background Papers

PSRG-2008-B1 Serious Injury Technical Workshop Report. (Andersen)
PSRG-2008-B2 Reeves et al. 2009. (Baird)
PSRG-2008-B3 SERDP executive summary and model output (Appendices). (Forney)
PSRG-2008-B4 Carretta et al. 2008 Beaked whales & sound. (Carretta)
PSRG-2008-B5 Baird et al. (in press) Hawaii *Tursiops* stock structure. (Baird)
PSRG-2008-B6 McSweeney et al. - *Feresa* paper. (Baird)

Appendix 3

AGENDA
Pacific SRG Meeting, November 17-21, 2008
Hawaiian Islands Humpback Whale National Marine Sanctuary Office,
Kihei, Maui, HI

Wednesday, 19 November 2008
Introduction – *Scott*

General Topics
MMPA updates - *Eagle*
GAO Review Update - *Eagle*
List of Fisheries - *Andersen*
Serious Injury Workshop – *Andersen*
Magnuson Confidentiality Issues – *Forney / Eagle*
Joint meeting recommendations – *Eagle / Scott*
PSRG SAR website progress – *Carretta / Scott*

Pacific Islands Fisheries and Management
Personnel changes in PIFSC and PIRO - *Antonelis / Van Atta*
False killer whale fisheries interactions - *Van Atta / Marsik*
Longline effort information for international waters - *Yuen / Forney*
Monk seal management updates - *Van Atta*
Swimmer interactions with spinner dolphins – *Van Atta*

Pacific Islands Research and SARs
Hawaii cetacean research updates – *Baird*
Pacific Islands Photo Identification Network – *Chapla Hill*

Thursday, 20 November 2008
Monk seal research updates - *Littnan/Baker*
Monk seal SAR - *Baker*
Spotted dolphin genetics - *Courbis*
Review of Pacific Islands cetacean information - *Brownell*
Navy sonar exercises (RIMPAC) - *Chapla Hill*
Pacific Islands cetacean bycatch - *Forney*
Pacific Islands False killer SAR - *Forney*
American Samoa humpback SAR – *Brownell*

CA/OR/WA Fisheries and Management
Observer Program Updates - *Carretta*
2007 CA bycatch estimates - *Carretta*
Whale ship strikes –*Calambokidas / DeAngelis*
Other marine mammal mortality - *Barlow*

CA/OR/WA Research and SARs
ORCAWALE 2008 overview - *Barlow*
Harbor porpoise abundance - *Carretta*
CA/OR/WA Cetacean SARs - *Carretta*

Friday, 21 November 2008
Sea otter updates and SARs - *Carswell / Lynch (by phone)*
Southern resident killer whales and SAR - *Hanson (by phone)*
SERDP Models and NASA Project - *Barlow / Forney*

Recommendations

Topics, timing, and location for next meeting

Adjournment