UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Alaska Fisheries Science Center
National Marine Mammal Laboratory
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MEMORANDUM FOR: The Record

FROM: Brian Fadely
National Marine Mammal Laboratory Alaska Ecosystems Program

SUBJECT: 2011 Steller sea lion research coordination workshop report

Researchers conducting field studies of Steller sea lions in Alaska meet annually to ensure coordination of field activities, a meeting also attended by researchers conducting field studies in Russia or Canada, at captive facilities, and by other interested parties (Appendix 1). The main purpose of this coordination is to minimize potential disturbance to Steller sea lions, and to maximize collaboration and sample or data sharing opportunities[1]. The 2011 meeting was held in association with the Alaska Marine Science Symposium in Anchorage, Alaska.

After a brief introduction providing background, context, and objectives for this meeting, a synopsis of the FY11 and FY12 budget processes was presented by Arne Fuglvog, Legislative Aide to Senator Murkowski. Investigators then narrated brief overviews of their calendar-year 2011 research plans assuming complete funding is obtained and all logistics accommodated. Overviews of activities authorized by six permits were presented: 14326 – National Marine Mammal Laboratory (NMML, Gelatt) and University of Alaska Fairbanks (Wynne as a co-investigator); 14325 – Alaska Department of Fish and Game (ADFG, Rea); 14337 – University of British Columbia (UBC, Trites); 14324 - Alaska SeaLife Center (ASLC, Maniscalco); 14335 – ASLC (Mellish); and 14334 – ASLC captive studies (Polasek). Additional information was provided about field work in Russia (Burkanov, presented by Andrews) and of activities conducted by The Alaska Sea Otter and Steller Sea Lion Commission (TASSC, Jack). Locations and timing of activities are listed in Table 1.

14326 – National Marine Mammal Laboratory – presented by Tom Gelatt
Two field camps will be attended as in past years during May-August at Marmot and Ugamak Islands for vital rates estimation, reproductive behavior, and impacts of research disturbance. The aerial survey (for pups) is a top-priority project, and will focus on western stock rookeries in Alaska (west of Prince William Sound). This focus should maximize opportunities to survey Aleutian Island rookeries west of Kiska Island, and time and weather-permitting additional sites will be visited that were not photographed during the 2010 non-pup survey. A series of land and vessel-based observational and scat collection trips will be conducted for vital rates and diet

[1] Reports of meetings held since 2007 can be found on the Alaska Fisheries Science Center website at: http://www.afsc.noaa.gov/nmml/species/species_steller.php.

determination. These include land-based observations at Cape St. Elias on Kayak Island in early June to continue investigations of trans-stock boundary movements, a vessel survey in Prince William Sound in mid-late May or June (likely it will be funded by NMML but operated ADFG), and a two-week vessel survey through the central-eastern Gulf of Alaska in June. Continuing our long-term effort to estimate survival and reproductive rates as well as monitor pup condition we will brand pups at the Ugamak Island rookeries, and also at a rookery (or rookeries) in the western Aleutian Islands to initiate vital rate studies in that area. About 10 years of observational effort will be required to obtain survival and reproductive rate data, but movement information would be obtained relatively sooner. In addition to logistic difficulties of working in the western Aleutians (for rookery work but also dedicating effort to continued observational studies), there are only three rookeries remaining and pup numbers are very low. Captures of adult females will be attempted sometime during October-November in the western-central Aleutian Islands with the primary objective of describing winter foraging behavior and movements (scats would also be collected for diet studies). At that time of year most sea lions should be completing molt, thus allowing for greater tag retention to obtain winter foraging data. NMML (in addition to the NMFS Alaska Regional Office and Alaska SeaLife Center) is providing money to support 2011 field work in Russia.

14326 – National Marine Mammal Laboratory/University of Alaska – presented by Kate Wynne
As a co-investigator on the NMML permit, Kate Wynne conducts surveys based out of Kodiak. During January-May land-based observations for marked animals will be conducted at Long Island. If funding is available, then scat collections would be conducted quarterly. Monthly aerial surveys for other marine mammals are being conducted to document indicators of recent changes in the Kodiak marine food web, and quarterly sea lion counts can be obtained during those surveys.

14325 – Alaska Department of Fish and Game – presented by Lorrie Rea
Two vessels will conduct surveys in the northern and southern parts of Southeast Alaska for two weeks in early July to estimate survival and reproductive rates and collect scats. There will also be multiple visits at sites within Glacier Bay National Park. In May ADFG will conduct vessel-based surveys (funded by NMML) and collect scats in Prince William Sound. Land-based observations will be made of Sugarloaf Island during 10-30 July, and the Forrester Island field camp will be staffed during May-July (includes small skiff surveys of surrounding rocks). The U.S. Forest Service flies aerial surveys to monitor eulachon runs, and under the ADFG permit also collects sea lion data. Using Coastal Impact Assessment funding ADFG will provide training and cameras for ADFG Refuge staff to conduct land-based observations at Round Island. Surveys for branded sea lions will be conducted in the northern Bering Sea/Bristol Bay/Cape Newenham area, and at Saint Lawrence Island (coordinated with the community to know when sea lions arrive). ADFG will continue development of a pole deployment attachment technique for satellite tags at Lowrie Island (and elsewhere dependent upon funding), and will support NMML branding and captures in the western/central Aleutian Islands with people and laboratory analyses.

14337 – University of British Columbia – presented by Andrew Trites
Field work has been limited as funding dips into reserves leaving no buffer for resight work in Southeast Alaska and British Columbia. Though funding limitations have curtailed an ability to

do field work, UBC will continue to develop DNA analysis-based prey analysis of scat techniques. If funding is obtained an August survey in the western-central Aleutian Islands would be conducted to collect scat to estimate diet composition.

University of British Columbia Captive Program – presented by David Rosen
Feeding trials featuring Atka mackerel will involve seasonal manipulations and changes in prey composition using both cod and mackerel, and we are continuing a long-term study of seasonal hormonal shifts and nutritional disruption. Funding has been sought for a joint project with the ASLC to make use of archived feeding trial samples to look at protein markers that may indicate sea lion nutrition status. We are also working with Marty Haulena at Vancouver Aquarium exploring cost-benefits for alternatives to isoflurane as a general anesthetic. Studies conducted at the open-water facility are exploring effects (and testing analytical models) of prey field density and depth on sea lion foraging decisions and energetics.

14324 – Alaska SeaLife Center – presented by John Maniscalco
Between February and May in the Kenai Fjords and Prince William Sound areas attempts will be made to biopsy-dart adult females of known reproductive history for genetic and diet analysis. Pups will be handled at Chiswell Island to collect milk samples, but will not be branded since pups have been marked there four out the past five years.

14335 – Alaska SeaLife Center – provided by Jo-Ann Mellish
Vessel-based capture trips will be undertaken in late May-early June to capture and transport up to six juveniles from Prince William Sound for temporary captivity. Acquiring this number could occur in just one trip, so timing compared to other PWS activities is unlikely to be an issue.

14334 – Alaska SeaLife Center Captive Program – presented by Jill Prewitt
Two new adult females (both 11-year olds) were acquired, and ASLC is continuing with breeding studies. ALSC is coordinating a breeding registry for captive Steller sea lions.

The Alaska Sea Otter and Steller Sea Lion Commission – presented by Liana Jack
TASSC is involved in many studies that do not require permitting, including a partnership with the U.S. Forest Service that covers charter time for Southeast Alaska eulachon studies, and the development of a biosampling monitoring program. However, TASSC is not intending to support the USFS survey in 2011. Some hair and whisker samples have already been collected from subsistence hunters, and TASSC is working to conduct training sessions and expand the number of villages participating in the program, though harvests seem to be declining due to costs of fuel and supplies.

North Pacific Wildlife Consulting (NPWC) Russia Field Studies – presented by Russ Andrews
Vladimir Burkanov and Don Calkins of NPWC and Russ Andrews of Alaska SeaLife Center conduct field studies in Russia with funding provided by NMFS and the Alaska SeaLife Center. During May-June they will conduct a brand-resight and scat collection survey through the east side of Kamchatka Peninsula and the Kuril and Commander Islands. For a continuing vital rates study, four of eight rookeries are planned for pup handling and marking in the Kuril Islands. There are no plans to conduct foraging ecology studies this year.

Additional Studies

The NMFS permit office is processing two new applications for Steller sea lion scientific field research. A series of aerial surveys would be conducted by ABR, Inc. in the lower Cook Inlet in waters around Kamishak Bay to monitor bird and mammal presence; and the Tribal Government of Saint Paul Island would collect scats at St. Paul and nearby islands throughout the year. Neither activity has conflict potential with research activities presented at this meeting.

Coordination and Collaboration

Only two potential temporal-spatial overlaps were apparent from this survey of 2011 research plans. First, several groups will be in Prince William Sound during May, though because of the short ASLC capture trip there is unlikely to be much potential for conflict or additive disturbance. Second, if NMML and UBC are funded for studies in the western-central Aleutian Islands additional coordination of activities may be necessary.

Table 1. Alaska Steller sea lion field studies anticipated to be conducted in 2011 under active permits.

Date Range	Region[1]	Description
14326-National Marine Mammal Laboratory		
May–Jul	EAI, CGOA	Land-based observations at Ugamak and Marmot Islands (vital rates & reproductive behavior.
May	EGOA	Vessel-based surveys for 2-3 days, likely to be operated by ADF&G (vital rates).
24 Jun–15 Jul	Western DPS (AK)	Aerial survey; all major haul-outs and rookeries in Gulf of Alaska and EAI (pups), and all SSL sites in WAI and CAI (population abundance).
1–7 Jun	EGOA	Land-based observational studies at Cape St. Elias, Kayak Island (vital rates, animal movements).
1–15 Jun	EGOA-CGOA	Brand sighting and scat collections (vital rates and diet studies).
20 Jun–7 Jul	EAI	Branding pups at Ugamak, brand sighting and scat collections (vital rate, condition and diet studies).
20 Jun–7 Jul	WAI-CAI	Branding pups at Agattu Gillon Point/Cape Sabak, or Yunaska, or Ulak; possibly collect pup weights at other sites (vital rates, diet, condition).
Oct–Nov	WAI-CAI	Capture and tag attachment on adult females (foraging ecology, condition, etc).
14326-National Marine Mammal Laboratory-University of Alaska Fairbanks (Wynne)		
Jan–May	CGOA	Kodiak: Land-based brand resights on Long Island, up to 2x/month.
Oct–Dec	CGOA	Kodiak: Land-based brand resights on Long Island, up to 2x/month.
Jan–Dec	CGOA	Quarterly scat collection, haulouts in Kodiak area: Long Is, Sea Otter Is, Cape Ugat.

Table 1, continued.

Date Range	Region[1]	Description
14325 – Alaska Department of Fish and Game		
1 Feb–30 May	SE AK	Aerial surveys of Akwe and Alsek rivers (up to 10 surveys within date range).
1 May–30 Sep	SE AK	Vessel and land-based observations in northern SE AK (Lynn Canal, Icy Strait, Cross Sound) at 1 rookery (Graves Rock) and several haulouts for vital rates estimation.
1 May–20 Aug	BERING	Land-based observations at Round Island for vital rates estimation. Work based out of Round Is field camp.
15–31 May	BERING	Land-based observations at Cape Newenham for vital rates estimation. CIAP funding.
15 May–20 Jul	SE AK	Land and vessel-based observations of Forrester complex/Lowrie Island rookery for vital rates estimation, breeding behavior, and scat collection. Field work based out of Lowrie Is. field camp.
15 Jun–15 Jul	SE AK	Vessel and land-based observations at haul-outs and rookeries throughout SE AK for vital rates estimation, breeding behavior, and scat collection. Two vessel trips (north and south), dates usually ~24 June – 14 July.
1 Jun–30 Aug	BERING EAI/WGOA	Vessel and land-based observations at haulouts and rookeries in Bering/E Aleutians/W Gulf (approx. 3-8 days of surveys, likely in June; CIAP funding). To be closely coordinated with NMML resight cruises.
10–30 Jul	CGOA	Vessel and land-based observations of Sugarloaf Island rookery for vital rates estimation and breeding behavior.
5–25 Jul	EGOA	Vessel and land-based observations of haulouts and rookeries in Prince William Sound for vital rates estimation and breeding behavior.
15 Oct–30 Dec	BERING	Land-based observations at Sivuokok, St. Lawrence Island, for vital rates estimation. CIAP funding.
15 Jan–31 Dec	SE AK	Opportunistic vessel and land-based observations at haulouts and rookeries in SE AK when opportunity arises.
Apr /May	SE AK	Land- and skiff-based trials of the pole-deployment method.
Jun/Jul	SE AK	(tentative) Land- based trials of the pole-deployment method at Lowrie Island.
Nov	SE AK	(tentative) Land- and skiff-based trials of the pole-deployment method.

Table 1, continued.

Date Range	Region[1]	Description
14337 – University of British Columbia (Trites)		
Aug	WAI-CAI	Boat-based sea lion survey, land-based scat collecting.
Year-round	Captive	Bioenergetics of Atka mackerel diet feeding trials.
14324 - Alaska SeaLife Center (Maniscalco)		
1 Jan–31 Dec	EGOA	Remote video monitoring of Steller sea lions in the Kenai Fjords area for vital rates, breeding behavior, disturbance monitoring.
21 Feb–13 May	E/CGOA	Remote biopsy darting of Steller sea lions >1 yr old for blubber (diet/QFASA), skin (genetics), and hair (contaminants). Might venture as far west as Outer Island.
29 Jun–2 Jul	EGOA	Single day during this period to capture, sample, and temporary mark pups at Chiswell Island for health, condition, and maternal diet from milk collected via stomach intubation.
14335 – Alaska SeaLife Center (Mellish)		
31 May–7 Jun	EGOA	Vessel-based juvenile capture and transport of up to 6 to ASLC for temporary captivity (Glacier, Perry, Cape Resurrection, The Needle, Point Elrington, Procession Rocks).
5 Jun–Jul 30	EGOA	Temporary captivity for research purposes (health and condition assessment, LHX implantation) and local release in Resurrection Bay.
14334 – Alaska SeaLife Center (Polasek)		
Year-round	Captive	Breeding project to study maternal investment.

[1]WAI-western Aleutian Islands; CAI-central Aleutian Islands; EAI-eastern Aleutian Islands; WGOA-western Gulf of Alaska; CGOA-central Gulf of Alaska; EGOA-eastern Gulf of Alaska; SE AK-southeast Alaska; BERING-eastern Bering Sea (regional divisions shown in Figure 1).

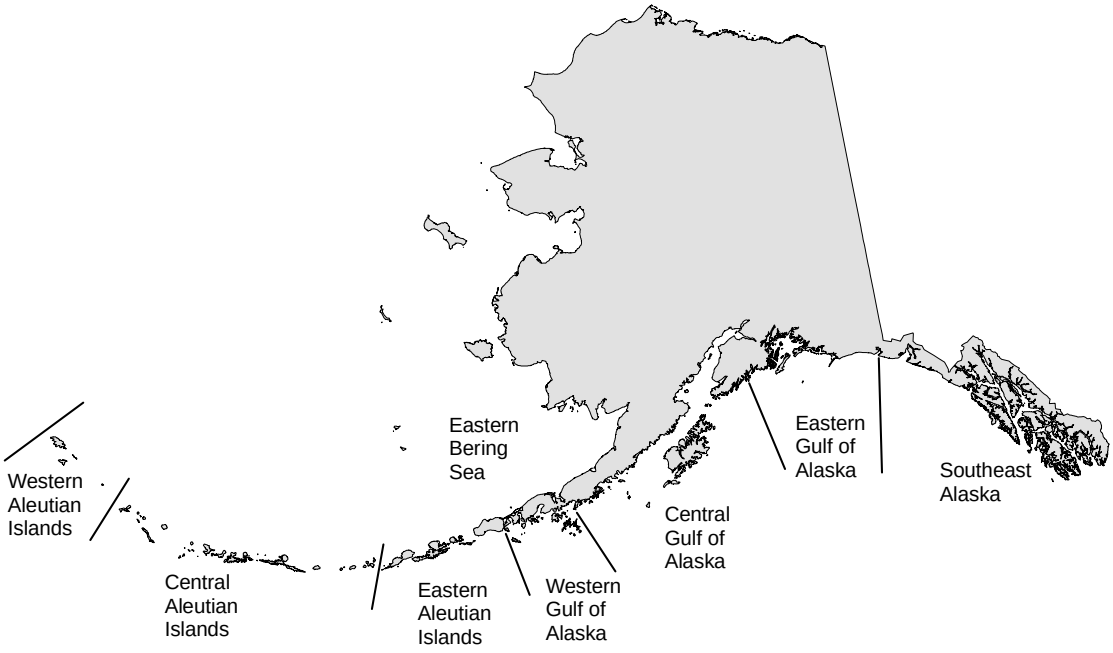

Figure 1. Approximate locations regional divisions used in Table 1, based on metapopulation structure of York et al. (1996. An analysis of the Steller sea lion metapopulation in Alaska. Pages 259-292 *in* D.R. McCullough (ed.) *Metapopulations and Wildlife Conservation*, Island Press, Washington DC).

Appendix 1. Attendees of the 2011 Steller sea lion research coordination meeting held in Anchorage, Alaska, on January 21, 2011.

Name	Affiliation
Brian Fadely	NOAA AFSC National Marine Mammal Laboratory
Mike Rehberg	Alaska Department of Fish and Game
Kate Wynne	University of Alaska Fairbanks
Lorrie Rea	Alaska Department of Fish and Game
Jill Prewitt	Alaska SeaLife Center
John Bengtson	NOAA AFSC National Marine Mammal Laboratory
David Rosen	University of British Columbia
Chad Nordstrom	University of British Columbia
Terry Johnson	University of Alaska Fairbanks – Marine Advisory Program
Russ Andrews	University of Alaska Fairbanks – Alaska SeaLife Center
Tom Gelatt	NOAA AFSC National Marine Mammal Laboratory
Andrew Trites	University of British Columbia
Lianna Jack	The Alaska Sea Otter and Steller Sea Lion Commission
Gerry Merrigan	North Pacific Research Board
John Gauvin	Alaska Seafood Cooperative
Arne Fuglvog	Office of Senator Lisa Murkowski
Bill Wilson	NOAA
John Maniscalco	Alaska SeaLife Center