

I. TITLE OF APPLICATION

Application for a Scientific Research Permit under the Endangered Species Act and Marine Mammal Protection Act

II. DATE OF APPLICATION

1 December 2006

III. APPLICANT AND PERSONNEL

A. Applicant/Permit Holder and Principal Investigator, primary contact

Kate M. Wynne (PI)

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Ms. Wynne, Professor of Marine Biology, has been involved in bona fide research of pinniped and cetacean populations since 1981. Ms. Wynne has assisted National Marine Mammal Lab researchers as a Co-Investigator (Scientific Research Permits No. 782-1532 and 782-1768) during aerial surveys, brand reporting, scat collections, and captures of Steller sea lions in the western DPS during multiple field seasons, 1991 to present. In 2002, Ms. Wynne worked with the Aleutians East Borough to obtain NMFS Scientific Research Permit No. 1010-1641 to conduct research on the seasonal diet and distribution of Steller sea lions in the western Gulf of Alaska. As the Principal Investigator on this permit, she has assisted the Co-Investigator (C. Foy) in the design and conduct of aerial surveys and sample collections and analysis. Ms. Wynne also has a thorough and first-hand understanding of the research and management needs associated with recovery of Steller sea lions; she is a past or current member of the NMFS Steller Sea Lion Recovery Team (2001- present), NMFS Steller Sea Lion Research Coordination Committee (2001), and ADFG Alaska Steller Sea Lion Restoration Team (2000-2001).

Co-Investigators

Catherine Foy (née Hegwer)(CI)

Project Manager, Aleutians East Borough Steller Sea Lion Project

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catherinefoy@ak.net

Ms. Foy, MSci Marine Biology, has studied Steller sea lions and their diets since 2000. In 2003, she completed her thesis, "Seasonal abundance and diversity of nearshore fishes around Steller sea lion haulouts of Kodiak Island", and was hired as the Steller sea lion Project Manager for Aleutians East Borough. She gained firsthand experience and training using Steller sea lion research protocols through work with K. Wynne (aerial surveys and scat collection, 2003) and in an ADFG Steller sea lion Brand Resight Training Workshop (2004). Since 2004, Ms. Foy has been responsible for coordinating and conducting ongoing scat collection, aerial surveys, and brand resight activities in the Shumagin Islands under authorization of Scientific Permit 1010- 1641. As Co-Investigator under this permit she has analyzed and presented data, produced reports, and ensured compliance with all necessary access and research permits.

Briana Witteveen (née Lawson) (CI)

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Ms Witteveen, MSci Fisheries, has conducted graduate level research on cetaceans in the central and western Gulf of Alaska since 2000 and has assisted as a technician on a variety of pinniped research projects involving aerial surveys, brand resighting, and scat collection.

Dr. Jane McKenzie (CI)

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Dr. McKenzie has studied the ecology, conservation and management of pinniped species for the past 10 years. She has conducted research on population demographics of New Zealand fur seals and their interactions with the marine ecosystem and fisheries in southern Australia. She has assisted in the collection of population data and diet samples from pinnipeds, supervised and conducted mark-recapture of New Zealand fur seal pups, and collected data on the reproduction and foraging ecology of Hawaiian monk seals.

Cherilyn Lundgren (CI)

Project Technician, Aleutians East Borough Steller Sea Lion Project
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Ms Lundgren is a resident of Sandpoint, AK. As a technician on the Aleutians East Borough Steller sea lion project, she has assisted on Steller sea lion aerial surveys, vessel-based brand resighting surveys, and scat collections in the western Gulf of Alaska.

Peter Devine Jr. (CI)

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Mr Devine is a resident of Sandpoint, AK. As a technician on the Aleutians East Borough Steller sea lion project, he has assisted on Steller sea lion aerial surveys, vessel-based brand resighting surveys, and scat collections in the western Gulf of Alaska.

B. Qualifications and Experience

See curricula vitae for the qualification of the PI and CIs (Appendix A)

IV. PROPOSAL

A. Summary

The endangered western stock of Steller sea lions (*Eumetopias jubatus*) is recovering at regionally variable rates following drastic declines in the past 30 years. These trends have been monitored by the National Marine Fisheries Service (NMFS) through range-wide aerial surveys conducted biennially during the breeding season. Long-term seasonal monitoring of Steller sea lion abundance and distribution is needed to detect their numerical response to natural and anthropogenic changes that vary annually, seasonally, and regionally. Likewise, seasonal and regional diet studies are needed to document regional prey use by Steller sea

lions and their potential for localized competition with fisheries, especially in regions with geographically variable population growth rates and fishery removals.

To address these needs, we request a 5-year permit authorizing the take (by potential disturbance) of up to 13,000 Steller sea lions four times per year during quarterly aerial surveys in the central and western Gulf of Alaska (Table 1). The same number and individuals could be taken up to seven additional times in June 2008, 2010, and 2012 during biennial replicate surveys of these sites (Table 2).

We also request authorization to disturb up to 2,000 Steller sea lions four times per year on a subset of sites in Western Gulf of Alaska (Shumagin area) during quarterly scat collections (up to 1000 takes) and boat-based brand resighting (up to 1000 takes). In addition, we request authorization to disturb up to 1,000 Steller sea lions four times per year on a subset of Central Gulf of Alaska haulout sites (Kodiak area) during quarterly scat collections and 500 Steller sea lions up to 20 times annually during land-based brand resighting (Table 2). This research, previously authorized separately under Scientific Permits 782-1768 and 1010-1641, is specifically designed to support and complement NMFS' research activities and address research needs identified in the Steller Sea Lion Recovery Plans (NMFS 1992, 2006).

B. Introduction

1. Species

- a. **Target species.** We request permission to count and potentially disturb Steller sea lions (*Eumetopias jubatus*) from the western stock (or Distinct Population Segment, DPS) of Steller sea lions as defined by Loughlin (1997) and clarified by Baker et al. (2005). Our study area will cover a portion of the range of the western stock from the Barren Islands westward to Unimak Pass (49.5°N 163.5°W to 51°N 151°W) at known sea lion haulouts and rookeries as well as seasonal or temporary haulout locations as encountered (Figure 1).
- b. **Non-target species.** This research should not result in any lethal takes of non-target species. However several cetaceans including humpback (*Megaptera novaeangliae*, Central Pacific stock), fin (*Balaenoptera physalus*, Northeast Pacific stock), killer whale (*Orcinus orca*, Eastern North Pacific resident and transient stocks), and gray (*Eschrichtius robustus*, Eastern North Pacific stock) whales occur in waters traversed between Steller sea lion terrestrial sites and may rarely be disturbed by the survey aircraft. Takes so occurring would be authorized under Scientific Permit No.1049-1718 on which Ms Wynne is the Principal Investigator. Harbor seals (*Phoca vitulina*, Gulf of Alaska stock) use haulouts throughout this region but these sites are typically more protected and rarely juxtaposed to Steller sea lion sites. Therefore we are not requesting take authorization under this permit because we do not anticipate harbor seals will be affected by this research. Efforts will be made to minimize disturbance of sea otters (*Enhydra lutris*) and seabirds when approaching or landing on terrestrial sites during scat collection or brand resighting activities. None of the seabirds expected to be encountered (primarily glaucous-winged gulls (*Larus glaucescens*), black-legged kittiwakes (*Rissa tridactyla*), black oystercatchers (*Haematopus bachmani*), and tufted puffins (*Fratercula cirrhata*) is currently listed as threatened or endangered under the Endangered Species

Act. The southwest Alaska stock of sea otters however, is listed as Threatened under the ESA and a permit to incidentally disturb sea otters will be sought from the US Fish and Wildlife Service pending NMFS approval of this permit request.

- c. ESA, MMPA and CITES status** The Western stock of Steller sea lions is listed as Endangered under the ESA and Depleted under the MMPA. The Steller sea lion is not currently listed by CITES. The Gulf of Alaska stock of harbor seals is not currently listed as Endangered or Threatened (ESA) nor Depleted (MMPA). The Central North Pacific stock of humpback whales and Northeast Pacific stock of fin whales are listed as Endangered (ESA) and Depleted (MMPA). The Eastern North Pacific stock of transient killer whales and Eastern North Pacific Northern stock of resident killer whales are not currently listed as Endangered or Threatened (ESA), nor Depleted (MMPA). The Eastern North Pacific stock of gray whales is not currently listed as Endangered or Threatened (ESA), nor Depleted (MMPA). The Southwest Alaska stock of sea otters is currently listed as Threatened (ESA) (Angliss and Lodge 2002).

2. Background/Literature Review

a. Current knowledge

The precipitous decline of the western Distinct Population Segment (DPS) of Steller sea lions (*Eumetopias jubatus*) from the 1970's to 1990's is well documented (Merrick et al 1987, Calkins and Goodwin 1988, Loughlin et al.1992, Sease and Loughlin 1999, Hill and DeMaster 1999) and led to its listing as an endangered species under the Endangered Species Act in 1997. Factors contributing to this decline and preventing recovery remain unclear, although reduced juvenile survival is considered a likely proximate cause (Merrick 1995, Sease and Merrick 1997). One hypothesis linked the decline and slow recovery of this stock to potential limitations in the availability, quality, and/or diversity of their prey (Calkins, et al. 1998, Sease and Merrick 1997, Merrick et al. 1997). As a consequence, a suite of fisheries restrictions have been enacted since 1990 in an effort to encourage stock recovery by reducing the potential for competition with commercial fisheries within Steller sea lion Critical Habitat (NMFS 2006).

This western stock of Steller sea lions is currently recovering at regionally variable rates, as determined by biennial aerial surveys of rookeries and haulouts and trend sites in western Alaska (Sease and Gudmundson 2002, Fritz and Stinchcomb 2005). Counts within the Western Gulf of Alaska region increased approximately 31% from 2000-2004 while counts within the adjacent Central Gulf of Alaska region declined by over 11% during the same period (Fritz and Stinchcomb 2005). Reasons for regionally disparate trends are unknown but could be key to promoting and understanding recovery of the stock (Call and Loughlin 2005). Assessing and monitoring temporal and spatial patterns in Steller sea lion abundance, distribution, and prey use are critical to understanding the potential for competition with fisheries and effects of anthropogenic and environmental changes on Steller sea lions.

We request authorization to conduct research that is designed specifically to complement past and current research on Steller sea lions in the Western and Central Gulf of Alaska. NMFS has conducted numerous aerial surveys, brand resight surveys,

scat collections and live-captures of Steller sea lions on sites within these regions. In addition, they have branded pups on three rookeries in the area (Ugamak, Marmot, and Sugarloaf Islands) and have conducted repeated prey biomass assessments in these areas. All activities authorized under this permit would be coordinated through annual planning meetings and frequent communication with other Steller sea lion researchers. The NMFS Alaska Region Steller sea lion Coordinator will be advised in advance of any authorized field activities.

We plan to continue studies of the abundance, distribution, and diet of Steller sea lions in the western and central regions of the Gulf of Alaska specifically to

- provide a more refined understanding of regional and seasonal patterns of Steller sea lion prey use in areas with disparate population trends
- provide additional observer effort to document the presence, behavior, observable physical health status, and location of branded Steller sea lions
- count Steller sea lion on a subset of NMFS' trend route sites during non-summer months
- coordinate replicate counts needed to assess daily haulout variability, precision of single-pass surveys, and compare photographic methodologies during NMFS' biennial aerial trend surveys

With this request we seek to streamline, under a single Scientific Permit, the authorization of similar and related research activities previously conducted by the Wynne and Foy in Kodiak and Shumagin Islands under two separate Scientific Permits No. 782-1532 and 1010-1641. The anticipated benefit of this consolidation is more direct PI response and responsibility for very similar and related research activities conducted in adjacent regions. This should enhance research efficiency and reduce potential for redundant exposure of Steller sea lions to research takes. The data we gather will improve understanding of regional Steller sea lion needs and therefore contribute directly or indirectly to the refinement of fishery management and Steller sea lion conservation measures in regions of disparate population trends.

b. See literature cited in References Section VII.

3. Hypotheses, Objectives and Justification

a. Objectives of this research are to

- conduct quarterly aerial surveys to document seasonal, regional, and interannual patterns of Steller sea lion abundance and distribution in the Central and Western Gulf of Alaska
- coordinate replicate summer surveys with NMFS' range-wide surveys to compare photographic protocols and assess daily variability in counts on selected haulouts
- collect fecal samples to assess seasonal diets of Steller sea lions in the central and western Gulf of Alaska
- compare seasonal Steller sea lion diets and population trends in two regions of Gulf of Alaska with apparently disparate recovery rates.

- document and report location, identity, behavior, and observable health status of branded Steller sea lions observed during scat collections and land/vessel-based surveys.

With this research we will test the hypotheses that

- significant Steller sea lion prey species do not differ seasonally across the central and western Gulf of Alaska.
- regional prey use is not correlated to regional Steller sea lion population trend or fishery removals
- Steller sea lion diets are least diverse in areas of greatest decline / slowest recovery

b. Rationale and expected significance:

Steller sea lions within the Gulf of Alaska are recovering at variable rates following decades of severe decline. Although factors currently affecting recovery rates are unclear, both anthropogenic and natural factors are known to affect prey abundance and availability and may be affecting prey use, population trends and survival rates. We have begun monitoring the seasonal Steller sea lion distribution, abundance, and diet in order to identify mesoscale patterns of habitat and prey use in these regions of active commercial fisheries, oil potential, and variable recovery rates. We seek authorization to continue diet, observational, and abundance/distribution surveys in order to complement and enhance annual surveys and collections made by NMFS and other researchers.

Historically, NMFS has determined Steller sea lion trends by flying a single survey over haulouts and rookeries during June or July (Sease and Gudmundson 2002, Fritz and Stinchcomb 2005). Reviews of this methodology note that a single survey, even when made during the most stable attendance period, only produces an estimate of the number of animals present during the survey and does not provide a measure of variability necessary for statistical analysis (NMFS 1992). Single annual counts may indicate trends but may be affected by many immeasurable variables. Replicate surveys at given haulouts are used by other pinniped researchers to assess daily variability in haulout use during surveys. ADFG, for example, uses at least five replicate counts at harbor seal (*Phoca vitulina*) trend sites to derive maximum and mean counts, variances, and significance of survey covariates (Small et al. 1998). Our quarterly seasonal surveys and replicate summer surveys will be compared to NMFS' range-wide biennial surveys to compare photographic protocols, assess daily variability, and discern seasonal patterns in counts on selected haulouts.

Researchers at NMFS and ADFG have branded thousands of Steller sea lion pups on natal rookeries throughout the range of the Eastern and Western stocks. Because these animals are of known age, sex, and genetic stock, subsequent observations of these animals ("resights") provide invaluable data on Steller sea lion movements, survival, reproductive history, etc. Documenting observations of branded animals provides key biological information critical for monitoring survival of individuals, age at weaning, reproductive history, etc. – all key biological indicators of population status, health, and trend. Our permit request includes authorization to take (potentially disturb) Steller sea lions on a subset of haulouts within the western and central Gulf of Alaska during

dedicated brand resighting trips. In addition, information and photographs of branded Steller sea lions observed opportunistically during aerial surveys and scat collections will be recorded and archived. Resulting observations and photographs of branded animals will be submitted to ADFG and NMML branding programs (as appropriate) to enhance the “recapture” rate of these marked animals.

Prior to 2000, many fishery-based Steller sea lion protective measures were based on limited dietary data derived from small samples collected and pooled over long time periods, broad geographic ranges, and diverse environmental regimes (Sinclair and Zeppelin 2002). We are seeking authorization to disturb Steller sea lions quarterly on a subset of western and central Gulf of Alaska haulouts in order to collect fecal samples needed to refine our understanding of temporal and spatial variability in Steller sea lion diets. Results will be compared to studies ongoing in Southeast Alaska. Subsamples will be collected and submitted for use by other researchers studying stress/ reproductive hormones and prey DNA signatures as funding becomes available for these projects.

b. Statutory and Regulatory Requirements

- (1) The western stock of Steller sea lions is listed as endangered under the Endangered Species Act and as depleted under the Marine Mammal Protection Act. This research cannot be conducted on another species because this research is specifically targeted at improving estimates of seasonal diet, abundance, and distribution of the endangered stock of this species.
 - a. The 2006 Draft Steller Sea Lion Recovery Plan (NMFS 2006) identifies estimating the trends of pups and non-pups (1.1.1), collecting brand resights (1.2.1), and analyzing scat contents (2.3.1) as research actions needed for recovery of the western DPS of Steller sea lions.
 - b. Brand resights will contribute significantly to understanding basic life history of Steller sea lions including age- and gender-specific information on weaning, reproductive history, and survival. Counts from our quarterly seasonal surveys and replicate summer surveys will augment NMFS’ range-wide biennial surveys by allowing comparison of photographic analyses, assessment of daily variability, and documentation of seasonal patterns in counts on selected haulouts. Scat collections will provide information on the seasonal diet of Steller sea lions in these areas.

- (2) The western stock of Steller sea lions is listed as endangered under the Endangered Species Act and as depleted under the Marine Mammal Protection Act. This research cannot be conducted on another species because this research is specifically targeted at improving estimates of seasonal diet, abundance, and distribution of the endangered stock of this species.

Benefit to species:

 - a. identify and evaluate degree of overlap between Steller sea lion diet and commercially harvested species. Diet data from central and western Gulf of Alaska sites will be compared to determine if prey use by Steller sea lion differs in areas with disparate recovery rates. These dietary data will also be incorporated into ongoing ecosystem and prey studies in the Kodiak and Shumagin Island regions. This data cannot be collected by researching another alternative species or stocks.

- b. The 2006 Draft Steller sea lion Recovery Plan (NMFS 2006) identifies estimating the trends of pups and non-pups (1.1.1), collecting brand resights (1.2.1), and analyzing scat contents (2.3.1) as research actions needed for recovery of the western DPS of Steller sea lions
- c. Brand resights will contribute significantly to understanding of basic life history including age- and gender-specific info on weaning, reproductive history, and survival.

(3) Not Applicable; this is not an enhancement activity.

(4) Not Applicable; this is not an enhancement activity.

B. Methods

1. Duration of Project and Location of Taking.

- a. This proposed research was previously authorized under Scientific Permit 782-1532 (NMFS/ National Marine Mammal Lab (NMML)) and Scientific Permit 1010-1641 (Aleutians East Borough). We are requesting continuation of this research from June 2007 to June 2012 under authorization of a single permit. Activities to be authorized under this permit will be closely coordinated with and designed to complement those of NMML and ADFG researchers working in the same region under separately permitted authority. Research activities authorized under these permits will be coordinated through routine communication and scheduled planning meetings to maximize research benefits while minimizing potential duplication and harassment of Steller sea lions.

Aerial survey and scat collections will be scheduled to occur quarterly in March, June, September, and December each year across the sampling region. Authorization for an additional seven surveys of a subset of sites in each region (Kodiak and Shumagin Islands) is requested in June 2008, 2010, and 2012 or as needed to replicate counts made during NMFS' biennial range-wide surveys. Researchers will maintain close contact with NMFS to coordinate survey dates. Vessel-based brand resighting effort will coincide with these sampling periods in the western Gulf of Alaska. Non-intrusive land-based observations and survey for branded animals will occur biweekly on Long Island and Sea Otter Island from mid-September to mid-May annually as funding and weather allow.

- b. The Steller sea lion haulouts and rookeries where takes may occur under this proposal are listed in Table 1, including "core" study sites as well as sites in "extended sites" in outlying areas whose inclusion is funding- and weather-dependent. Other locations within the study area where Steller sea lions are found on a seasonal or temporary basis will be photographed and documented as encountered.

The proposed study area encompasses haulout and rookery sites within the central and western Gulf of Alaska from the Barren Islands to Unimak Pass (49.5°N- 163.5°W to 51°N 151°W) (Figure 1). These sites are used seasonally or year-round by Steller sea lions and typically found on wave-scoured, exposed headlands and beaches.

This research will take place on sites within the Alaska Maritime National Wildlife Refuge (AMNWR). Access to Steller sea lion sites in AMNWR is or has been authorized

under permit numbers 74500-00-030 and 74500-04-003. Most haulouts and rookeries of the western stock of Steller sea lion are on refuge land so research on Steller sea lion in the Central and Western GOA could not be effectively carried out without accessing national wildlife refuge lands.

2a. See Table 2 (TAKE TABLE)

2b. Methods narrative

Aerial surveys for abundance and distribution

We request authorization to approach up to 13,000 Steller sea lions of all ages and both sexes by aircraft four times per year (June, September, December, March) during quarterly aerial surveys conducted in the Central and Western Gulf of Alaska (Table 1) from 2007-2012. Based on previous surveys on these sites (included in permit reports for Scientific Permits 1010-1641 and 782-1532), we anticipate that approximately 0.2% of sea lions overflown will actually be disturbed enough by the aircraft to wake and move toward the water during these quarterly surveys. It is assumed that the same individual animals may be taken (observed and vulnerable to disturbance) on sites during successive surveys within each region. Surveys of central and western Gulf of Alaska sites will be synchronized to the extent possible to minimize the potential for an individual animal to travel between these regions and be taken twice during the same survey period. Although ideally flown on the same dates, weather delays may separate the survey dates for several days. If weather delays exceed 30 days during any survey period, that quarterly survey will be foregone.

Quarterly aerial surveys of Steller sea lion haulouts and rookeries in the Central and Western Gulf of Alaska will be based out of Kodiak and Sandpoint, Alaska respectively. Each region includes “Core” survey sites and “Extended” survey sites (Table 1) that may be added when funding and survey conditions allow. Specific survey dates in June, September, December, and March each year will depend on weather conditions, aircraft availability, and synchronization with other researchers.

Standard aerial survey methodology and protocols regarding timing, equipment, speed, and altitude will be followed (Loughlin et al 1992). Surveys will be conducted during the period 1000 and 1600hr local time using fixed-wing/over-wing aircraft with good side visibility and the slow turning speed (e.g. Cessna 206, 207, or DeHavilland Beaver). The aircraft will approach sites at slow speeds (60-110kn), an altitude of 150-200m, and parallel to shore at an angle to facilitate oblique photography. Sites will generally be approached / circled only once but an additional pass may be made as needed for complete confidence in the photographic coverage of an area. This additional pass will only occur if sea lions are not visibly disturbed by the aircraft. Rookeries will not be approached at an altitude of less than 200 m during June surveys to decrease the chance of disturbance during breeding and pupping. Greater altitudes up to 400 m, will be maintained if necessary for safer flying conditions or if animals appear to be reacting to the presence of the aircraft. Although

variable due to wind turbulence and lighting conditions, 400 m is the maximum altitude that can be maintained and still obtain reliable count images.

Sea lions will be photographed by the PI or CIs using hand-held digital (35mm equivalent) SLR cameras with 75-300 mm zoom lens. Photographic protocol will follow that used previously for oblique photography (Sease and Loughlin 1999, Sease and Gudmundson 2002, compared with vertical medium format in Fritz and Stinchcomb 2005). Photographs may also be taken simultaneously by up to two accompanying observers (CIs) to provide redundancy of images and to document disturbance. A visual estimate of the number of animals present and number disturbed will be recorded at each site along with data needed to time-link images with the camera's digital image signature. Images will subsequently be downloaded and all sea lions present on or within one body length of the sites will be counted using standard photo software. All survey photographs and counted images will be archived in electronic format in two separate locations.

Biennial Replicate Aerial Surveys

In addition to the quarterly surveys above, we propose to make seven additional counts of sea lions on a subset of western and central Gulf of Alaska haulouts and rookeries in conjunction with NMFS' range-wide surveys in June 2008, 2010, and 2012 (or as otherwise scheduled by NMFS). These replicate surveys will be scheduled in close collaboration with NMFS researchers in order to provide counts on four consecutive days before and four consecutive days following NMFS' single-pass trend route survey of the sites (Fritz and Stinchcomb 2005). Each of these surveys would have the potential to disturb 13,000 Steller sea lions of all age/sex classes in those years. Table 2 reflects, separately, our request to take these sea lions once annually in June quarterly surveys 2007-2012 and up to 7 additional times during biennial replicate surveys in 2008, 2010, and 2012 (or as scheduled by NMFS). Therefore, the maximum number of potential takes for an individual Steller sea lion being surveyed by all surveyors during the June survey in those years would total nine (including the NMFS take).

These replicate counts will provide a means of calculating daily variances and confidence intervals around a subset of Steller sea lion counts. Site counts compromised by Steller sea lion departure will not be included in analyses. Similar replicate surveys were attempted in the Shumagin Islands in June 2004 and June 2006 as authorized under Scientific Permit 1010-1641 but could not be completed due to inclement weather (2004) and vacation of the Research Permit (2006).

Brand resighting

We propose to approach haulouts to observe branded Steller sea lions using two methods with differing potential for disturbing animals: vessel surveys and land-based observations.

Vessel-based brand resighting: We request authorization to conduct dedicated vessel-based surveys for branded Steller sea lions on western Gulf of Alaska haulouts and rookeries in June, September, December, and March 2007-2012 (Table 1). Rookeries will

not be approached in June to prevent disturbance during pupping and breeding. Researchers will approach haulouts slowly in a small skiff or equally maneuverable boat, shifting engine into neutral if near animals in water. Whenever possible the vessel will ease toward the haulout from downwind to avoid spooking animals onshore. All branded, injured or entangled animals will be photographed with a digital camera and 75-300 mm zoom lens. Observations of brand characteristics (characters/digits, legibility), observable physical condition and behavior of branded animals, and the number of animals observed and disturbed during each approach will be recorded on-site using standardized protocol (ADFG unpubl., Raum-Suryan et al. 2002)

We define research takes during vessel-based observations as a) those animals with a demonstrated awareness of the vessel or b) all animals present, if approached closer than 100 meters, regardless of disturbance levels. We anticipate an annual maximum of 1000 sea lions of all age and sex classes may be disturbed when researchers approach these sites to observe and photograph branded animals in this manner. We assume that the same individual animals may be disturbed once every three months by these surveys. Whenever possible, brand resighting activity will precede scat collection efforts in order to maximize research benefits while minimizing the number of disturbance events at haulouts.

Land-based brand resighting: On Long Island and Sea Otter Island in the Kodiak Archipelago, it is possible to land by helicopter not less than 300-1000m from Steller sea lions hauled out on these sites without being detected. The combination of steep site topography, downwind observation points, and pervasive ambient noise allow researchers to approach these sites and spend extended periods scanning for branded animals without detection or disturbance. Because we expect zero takes on these sites, we request authorization to approach these haulouts biweekly from mid-September to mid-May 2007-2012, as funding allows, in order to document the presence of branded Steller sea lions among the up to 500 animals present. All branded, injured or entangled animals will be photographed with a digital camera and 75-300 mm zoom lens. Observations of brand characteristics (digits, legibility, degree of healing), behavior/associations of branded animals, and the number of animals taken during each approach will be recorded on-site using standardized protocols (ADFG unpubl, Raum-Suryan et al. 2002). Brand resighting activity will precede any scat collection efforts planned on these sites in order to maximize research benefits while minimizing the number of disturbance events at haulouts.

Copies of branded sea lion images and data collected during vessel-based or land-based surveys will be submitted to the following Steller sea lion researchers for incorporation into their Steller sea lion brand resight databases:

Ms. Lauri Jemison , Alaska Dept of Fish and Game, Douglas, AK
lauri_jemison@fishgame.state.ak.us

Dr. Rod Towell , National Marine Mammal Lab, NMFS, Seattle, WA 98115
Rod.Towell@noaa.gov

Scat Collections/Diet Analysis

The final objective of this study is to document the seasonal diets of Steller sea lions in the Central and Western Gulf of Alaska. We propose to collect scat left by Steller sea lions of all age/sex classes on selected haulouts in Alaska during June, September, December, and March 2007-2012 in the Kodiak and Shumagin Island regions of the Gulf of Alaska (Figure 1). Sites that function as rookeries during the breeding season will not be approached for scat collection during summer surveys to avoid disturbance during pupping and breeding periods. These sites will only be approached for September, December, and March collections.

We request authorization to disturb up to 1,000 Steller sea lions four times per year on a subset of sites in Western Gulf of Alaska and 1,000 Steller sea lions four times per year on a subset of Central Gulf of Alaska sites during quarterly scat collections. Up to five researchers will be on site and will limit their time on haulouts to no more than two hours per visit. It is assumed that if an individual sea lion repeatedly uses sampled haulouts, it may be disturbed at most four times per year during these quarterly scat collections. We anticipate research takes occurring during scat collection will involve displacement (“spooking”) of all animals on the haulouts. When scat collection is preceded by brand resighting, the activity will be reported as a scat collection research take due to its higher level of associated disturbance.

Scat collection and processing protocol will be comparable to that of NMML (Sinclair and Zeppelin 2002). Animals are approached slowly, to allow them time to exit the beach without panic. After a sample is identified on the beach, every effort will be made to collect it in its entirety, and not to contaminate it by mixing with another scat. All samples will be bagged on site, and counted, grouped and marked with an identifying code. Samples will be stored at the Kodiak Fisheries Research Center in a freezer designated for biological samples. Each sample will be thawed and separately soaked with soapy water prior to being washed through nested sieves, ending with a 0.5 mm mesh. Prey remains will be dried and stored in coded sample bags for shipment to Pacific Identification for identification of prey remains. Following analysis, samples and data will be returned to Wynne and Foy for archival storage.

3. Additional Information for Removing Animals from the Wild into Captivity and Research or Enhancement on Captive or Rehabilitating Animals.

Section 3a-3j. NOT APPLICABLE: this research does not involve the capture of animals or research on captive or rehabilitated animals.

4. Lethal Take

a. Not Applicable. This research does not involve any intentional lethal takes.

b. Unintentional mortality or serious injury to Steller sea lions is extremely unlikely as a result of proposed research activities but could occur if panic on the rookery results crushing of young animals. Female abandonment of dependent young due to these research activities is also highly unlikely but could occur if females are repeatedly

stressed by the prolonged presence of researchers onsite. If researchers encounter a dead or injured sea lion or an abandoned pup, they will collect appropriate samples under authority of the PI's Letter of Authorization from the NMFS Alaska Region Stranding Network and contact

Kaja Brix, Alaska Regional Stranding Coordinator, NMFS,
P.O. Box 21668 Juneau, AK 99802-1668
(907) 586-723. E-mail kaja.brix@noaa.gov.

Wynne has been an active member of the Alaska Marine Mammal Stranding Network since 1988 and has participated in several National and state-wide annual meetings and workshops. Wynne and Foy participated in the Alaska Marine Mammal Stranding Network training in Kodiak, Alaska on 15 April 2005.

5. Exports of Marine Mammals from the U.S.

- a. Section not applicable; we will not be exporting marine mammals and/or parts or products from the US.
- b. Section not applicable; we will not be exporting living marine mammals from the US.

D. Research Effects and Mitigation Measures

1. Research Effects

a. Effects on target species

Aerial Surveys

Using the above survey protocol, the typical response of Steller sea lions to past overflights by survey aircraft has been negligible (disturbance-to-take ratio of less than 0.2%) or completely absent. If sea lions responded to the aircraft at all during aerial surveys in the Shumagin and Kodiak Island areas (see annual reports for Scientific Research Permits No. 1010-1641 and 782-1532), it typically involved animals waking, assuming an alert posture, or becoming agitated (i.e. moving about restlessly); only rarely did animals enter the water. Animals were considered "Disturbed" when they maintained an agitated / alert posture or entered the water. Of 22,719 Steller sea lion counted (taken) during surveys in the Shumagin Islands in 2004 and 2005 (under Scientific Permit 1010-1641), only 47 Steller sea lions were disturbed. Similarly, only 28 of 12,075 Steller sea lions were disturbed by Wynne (under Scientific Permit 782-1532) during seven surveys of Kodiak sites in 2005 and 2006. This represents a disturbance-to-take ratio of less than 0.2%. Because the nature and risk of disturbance to individual Steller sea lions are minimal, aerial surveys represent a negligible overall threat to Steller sea lions in the western DPS. We expect that we will continue to have low disturbance levels during repetitive aerial surveys. In June 2004, we surveyed 6 times in the Shumagin Islands in addition to the NMML survey; only 7 of 9783 Steller sea lions were disturbed during our repetitive aerial survey. This has a disturbance-to-take ratio of less than 0.1%.

Brand resighting

The visual observation of branded Steller sea lions on haulouts is, in itself, a non-invasive research activity. When approached on land undetected and observed remotely, Steller sea lions have not been disturbed by this activity on several sites in

the Kodiak area. The greatest apparent response to a remote observer on these sites has been 1-2 animals' momentary waking from a resting state or raising of their head inquisitively. Past observations have shown it is normal for sea lions to wake and shift positions often on the haulout in response to natural localized disturbance (primarily other sea lions). For this reason we expect there is no injury or mortality risk associated with approaching Long Island and Sea Otter Island haulouts, where we have proven researchers can land undetected and observe sea lions remotely.

Brand resighting from vessels near haulouts, however, may affect Steller sea lions due primarily to disturbance by the vessel's presence (Matthews 2000, Kucey 2005, Szaniszló and Dearden 2005). Steller sea lions display varied reactions to vessel presence ranging from complete disregard to agitation and panic, depending primarily on the speed/trajectory of the vessel's approach and distance from the sea lions. Animals may exhibit more than one reaction during a resighting event. For instance, Steller sea lions may show initial agitation, and return to a resting state as they become accustomed to the vessel presence. Others may continue to show agitation until they enter the water. We define research takes during vessel-based observations as a) those animals with a demonstrated awareness of the vessel or b) all animals present, if approached closer than 100 meters, regardless of disturbance levels. The greatest potential for injury or mortality likely to result from vessel-based resighting involves pups that could be injured and/or killed if sea lions panic and stampede towards the water. If disturbance on a site is repeated or prolonged so that animals are prevented from rehauling on sites on consecutive days, it is possible females could abandon dependent young or that animals of all ages could have elevated exposure to predation.

Scat Collection

Scat collection typically causes displacement of Steller sea lions from haulouts. Infrequently adult Steller sea lion males may refuse to leave the haulout in which case they are carefully observed during collection and researchers attempt to maintain distance. On some larger sites with obscuring rock features, researchers can approach a collection site undetected and collect scats without disturbing adjacent sea lions. On smaller sites and where disturbance is inevitable, animals are encouraged to enter the water slowly by researchers easing toward the haulout.

During past scat collection efforts, Wynne and Foy observed the behavior of Steller sea lions during and after being herded into the water. Sites were then carefully searched for animals injured as a result of the research activity; none has been observed. The typical response of Steller sea lions to this disturbance has been unhurried entry into the water followed by attentive 'pacing' in waters immediately surrounding the haulout. The greatest potential for injury or mortality likely involves pups that could be injured and/or killed if sea lions stampede towards the water. However, no injuries have been observed in past surveys and some sea lions have been observed to return to haulouts prior to the researchers' departure. It is possible that repeated or prolonged disturbance on a site could discourage animals from rehauling on consecutive days. If so, it is possible females could abandon dependent young or that animals of all ages could have elevated exposure to predation.

b. Potential effects on non-target species

Several large whale species occur in waters traversed during aerial surveys (Introduction 1.b.). Because they are uncommonly encountered and their surface time is minimal, whales will not likely be disturbed by aircraft or vessels if encountered while traversing between survey sites. Harbor seals using haulouts throughout this region might be momentarily disturbed by survey aircraft that fly directly overhead or vessels passing nearby but seal haulouts are rarely juxtaposed to Steller sea lion sites so these are unlikely events. Sea otters swimming near Steller sea lion survey sites may be momentarily disturbed by a passing survey aircraft or vessel.

Seabirds may be harassed or disturbed by the approach or presence of researchers during scat collections and brand-resighting. This could involve temporary abandonment of eggs or chicks while researchers are in the immediate vicinity of nests from May to August. Because Steller sea lions haul out on rocky outcroppings and beaches below the vegetated portion of islands, time spent by researchers traversing potential gull and puffin nesting areas is minimal. This potential disturbance is only a concern during summer field activities when birds are nesting on some of these sites.

2. Measures to minimize effects

Aerial surveys

Aircraft will maintain an altitude necessary to avoid disturbance of Steller sea lions on haulouts and rookeries. Although most sites are surveyed without disturbance at altitudes of 150-200m, June surveys of rookery sites will be flown at altitudes \geq 200 m to further reduce the risk of disturbance during the pupping and breeding season. Greater altitudes, up to 400 m, will be maintained if necessary for safer flying conditions or if animals appear to be reacting to the presence of the aircraft. If animals are still reactive when surveyed from 400 m, replicate surveys of that site will be foregone. Sites will generally be approached / circled only once; an additional pass may be needed for complete confidence in the photographic coverage of a site but will only occur if sea lions are not visibly disturbed by the aircraft.

Research aircraft may inadvertently approach large whales, sea otters, and harbor seals while conducting research on or near Steller sea lion haulouts and rookeries. Survey aircraft that fly over non-target species while transiting between survey sites will maintain course, speed, and altitude necessary to avoid disturbance (as indicated by abrupt change in swimming or resting behavior) unless authorized under separate Scientific Permit (see Introduction Section 1.b).

Brand resighting

We have chosen two study sites in the central Gulf of Alaska (Long Island and Sea Otter Island) on which to conduct a repetitive biweekly brand resighting effort with minimal potential for sea lion disturbance. Haulouts on these islands are accessible by

researchers who can remain completely undetected while observing target animals. Observers on these sites are able to access these haulouts by helicopter, landing downwind, at a distance, and completely out of sensory range of animals on the haulout. On other sites in the western and central Gulf of Alaska, observers approach haulouts in small vessels slowly and from down wind (Szaniszlo and Dearden 2005) to a distance of approximately 50-100m.

The greatest potential for injury or mortality likely to result from vessel-based resighting involves pups that could be injured and/or killed if sea lions panic and stampede towards the water. This risk can be minimized by approaching the sites slowly from downwind which allows controlled awareness of the vessel's presence. If disturbance on a site is repeated or prolonged so that animals are prevented from rehauling on sites on consecutive days, it is possible females could abandon dependent young or that animals of all ages could have elevated exposure to predation. We will minimize this possibility by approaching a given site no more than once every three months. Sites that function as rookeries will be visited only during September, December, and March surveys to avoid potential for disturbance during breeding and pupping in summer months.

To minimize disturbance of seabirds when approaching haulouts from the water, personnel from the US Fish and Wildlife Service (including Alaska Maritime National Wildlife Refuge) recommend researchers access sites from below the tideline to avoid oystercatcher nests and away from cliffs where kittiwakes are nesting. Because Steller sea lions haul out on rocky outcroppings and beaches below the vegetated portion of islands, time spent by researchers traversing potential gull and puffin nesting areas is minimal. Research vessels may inadvertently approach large whales, sea otters, and harbor seals while conducting research on or near Steller sea lion haulouts and rookeries. Vessel-based researchers will maintain a minimum distance of 100m from non-target species seen on the surface, reducing vessel speed and/or changing course as necessary.

Scat collection

Disturbance due to scat collections will be limited to a subset of approximately fifteen haulouts in central and western Gulf of Alaska that are suitable and accessible for scat collection. Researcher presence on these sites during scat collections will be limited to a maximum of two hours per visit, for a total maximum of eight hours per year. Researchers will not approach a rookery for scat collection during the breeding season and for two months following pupping (June to September). Researchers will conduct scans for branded Steller sea lions when approaching these sites for scat collection. This will maximize the research benefits of each disturbance and minimize the number of disturbance events at each haulout site.

The greatest potential for injury or mortality during scat collection likely involves pups that could be injured and/or killed if sea lions stampede towards the water. This risk can be minimized by approaching the sites slowly from downwind which allows controlled awareness of the researchers' presence. In addition, no more than five

researchers will be on site at any time; working independently, they will maintain low vertical profiles and work quietly. It is possible that repeated or prolonged disturbance on a site could discourage animals from rehauling on sites on consecutive days. If so, it is possible females could abandon dependent young or that animals of all ages could have elevated exposure to predation. We will minimize this risk by remaining on a site for no more than 2 hours of no more than one day every three months (maximum 4 times (8 hrs) per year). Scats will not be collected on sites that function as rookeries except in September, December, and March surveys to avoid potential disturbance during the breeding and pupping season.

3. Monitoring effects of activities

During aerial surveys, observers will record the number of animal that become agitated and move toward the water as the plane approaches or passes each site. Researchers present on haulouts to collect scats will search for evidence of associated animal injury or mortality. Because human presence is the source of potential takes, we attempt to minimize the amount of time researchers spend on sites. For this reason we do not attempt to monitor the long-term effects of this research.

4. Alternatives

There are no less intrusive alternative methods of collecting these data and samples. The quarterly survey and collection schedules allow adequate seasonal sampling with minimal levels and frequency of potential disturbance.

E. Resources Needed to Accomplish Objectives

Sponsors

The research described in this application has been funded in the past by multi-year grants from NOAA/NMFS to the University of Alaska (Award #NA16FX1270) and the Aleutians East Borough (Award # NA16FX1421). Additional financial support for aerial surveys and scat collections in the Kodiak area was provided by NMML. But no funding is guaranteed for the life of the requested Scientific Permit. Therefore the PI and CI will actively pursue funding opportunities from the following sources which have demonstrated interest in the integrated documentation of Steller sea lion abundance, diet, life history, and movements in the central and western Gulf of Alaska:

- North Pacific Research Board, Gulf of Alaska IERP
- North Pacific Universities Marine Mammal Research Consortium
- Pollock Conservation Cooperative Research Center
- Alaska Sea Grant College Program

Cooperating institutions

The research described herein represents a collaborative effort of many entities sharing common goals of monitoring Steller sea lion population and documenting their seasonal and regional diets. The PI and CI on this permit application are financially supported by academic and municipal institutions but have worked closely with state and federal Steller sea lion researchers for over a decade. Steller sea lion researchers at those agencies have been responsible for branding Steller sea lions in the Gulf of Alaska but rely on observations from others sea lion researchers to augment their own brand resight

efforts. Data and images of branded Steller sea lions we gather using their protocol will be submitted to collaborating researchers responsible for branding Steller sea lions in Alaska from the eastern DPS (Alaska Department of Fish and Game, Douglas, AK; contact: lauri_jemison@fishgame.state.ak.us) and western DPS (National Marine Mammal Lab, Seattle, WA; contact: Rod.Towell@noaa.gov).

To assure comparable results with other Steller sea lion diet studies in the North Pacific, we will subcontract Pacific Identifications, Victoria, BC to identify prey remains recovered from fecal samples; contact: scrock@pacificid.com.

Replicate aerial surveys proposed herein will be scheduled to coincide with medium-format surveys planned by NMFS Southwest Fisheries Science Center (C.Stinchcomb@noaa.gov) and NMFS/NMML (Lowell.Fritz@noaa.gov) in a subset of rookeries and haulouts in the central and western Gulf of Alaska. We will continue to work closely with these survey teams as they plan and complete their surveys so as to minimize unintended duplication of effort and potential disturbance of Steller sea lions.

Steller sea lion diet data will continue to be compared to fish abundance and distribution data generated by NMFS /RACE (Chris.Wilson@noaa.gov) and UAF's GAP study (Wynne et al. 2005) (foy@sfos.uaf.edu) in Shelikof/Shumagin and Kodiak Island regions, respectively in order to assess tempero-spatial patterns of availability of commercially harvested prey to their seasonal use by Steller sea lion in these regions. These collaborations have been so close in the past, that PI Wynne was listed as a CI on NMML's Scientific Permit No. 782-1532 and 782-1768.

F. Publication of Results

Results of research authorized under this Scientific Permit will be suitable for submission for publication in Marine Mammal Science, Fishery Bulletin, Journal of Mammalogy and other peer-reviewed scientific journals. In addition, results will be shared annually with the public through presentations to the Aleut Marine Mammal Commission, the Aleutians East Borough Assembly, Kodiak WhaleFest, and at the North Pacific Marine Science Symposium. Results will continue to be presented upon request to the Steller sea lion Mitigation Committee of the North Pacific Fisheries Management Council and in other fishing industry fora. Brand resighting data will be submitted to ADFG and NMML researchers who will be responsible for publication of cumulative findings.

V. NATIONAL ENVIRONMENTAL POLICY ACT CONSIDERATIONS

1. The proposed research does not involve new, innovative, controversial, or experimental equipment or techniques. The methodology used for this research is well-established and is essentially the same used by the National Marine Mammal Lab and others during their aerial surveys, brand resight, and scat collection.
2. Our proposed research involves the handling, collection and transport of potentially infectious agents or pathogens in the fecal/scat samples taken from the Steller sea lion

haulouts. We have used the following protocols to ensure human safety and prevent disease transmission:

Technicians wear protective clothing while sampling. All samples are bagged on site, and counted and marked with an identifying code, then bagged again in a group to provide two layers of plastic barrier during initial transport. Following sampling, technicians' outer clothing and hands are scrubbed with an antibiotic solution such as dilute bleach. The soles of boots and the outer bag of sample groups are also sprayed. This procedure is repeated after every sampling event. If distance transport is required, the fecal samples are air-transported in lock top containers that are labeled with BIOLOGICAL SAMPLES, FECAL SAMPLES and the site codes. All airway bills are labeled with the same information as well as complete contact information for researchers. Samples are stored at the Kodiak Fisheries Research Center in a freezer designated for biological samples only (NO FOOD). Processing of samples is done in a controlled lab environment according to established research protocol by technicians wearing protective clothing and observing prudent hand-washing practices.

3. Many of our study sites occur within the Alaska Maritime National Wildlife Refuge. No aspect of our activities impacts the physical environment except for short term human presence. We make every effort to limit the effect of our presence by careful avoidance of nesting sites during critical sea bird nesting periods and limited on presence on sites to ≤ 2 hrs.
4. Activity authorized under this Scientific Permit would not cause the loss of significant scientific, cultural, or historic resources, as no known cultural or historic sites will be disturbed. Sites within our sampling areas are unlikely historic sites as they are frequently wave swept during storm events and have a low likelihood of preserving artifacts. Although Steller sea lions are traditionally used for subsistence purposes in these regions, our research will not involve lethal takes. Aerial surveys and band resighting cause only occasional low level disturbance to the sea lions. Scat collections temporarily displace animals from the haulout; however disturbance is carefully monitored and controlled to prevent accidental mortality or injury of the sea lions.
5. Our proposed activities include transport of fecal samples from haulouts to the laboratory at the Kodiak Fisheries Research Center. Vessel surveys are conducted on small local vessels (ie. no foreign ballast water) or by helicopter. Technicians wear protective clothing while sampling. All samples are bagged on site, and counted and marked with an ID code, then bagged again in a group to provide two layers of plastic barrier during initial transport. Following sampling, technician's outer clothing and hands are scrubbed with an antibiotic solution such as dilute bleach. The soles of boots and the outer bag of sample groups are also sprayed. This procedure is repeated after every sampling event. If distance transport is required, the fecal samples are air-transported in lock top containers that are labeled with BIOLOGICAL SAMPLES, and ANIMAL FECAL SAMPLES and the site codes. All airway bills are labeled with the same information as well as complete contact information for researchers. Samples are stored at the Kodiak Fisheries Research Center in a freezer designated for biological samples only (NO FOOD). Processing of samples is done in a

controlled lab environment according to established research protocol by technicians wearing protective clothing and observing prudent hand-washing practices.

VI. PREVIOUS AND OTHER PERMITS

A. Previous Permits.

Ms Wynne and Ms Foy have conducted bona fide Steller sea lion research in the Shumagin Islands and Aleutians East Borough under authorization of Scientific Permit #1010-1641 (Kate Wynne (PI) Catherine Foy (CI and primary contact) issued by the NOAA Permits Division. Ms. Wynne is/was also listed as CI on NMML's Scientific Permit #782-1532 and 782-1768 to study Steller sea lions in the western DPS and ADFG's Scientific Permit number #358-1585 to conduct research on harbor seals throughout Alaska. Ms. Wynne is listed as PI or CI on past / current Scientific Permits # 473-1433, # 545-1488, and #1049-1718 authorizing the survey, tagging, and/or sampling of cetaceans in Alaskan waters.

Animal care protocols involved in research authorized under the NOAA permits listed above have also been approved by the University of Alaska's Institutional Animal Care and Use Committee under IACUC assurances # 01-46, #02-38, #02-48, and #05-20, #05-21.

B. Other Permits.

Our access to Steller sea lion sites within the Alaska Maritime National Wildlife Refuge is currently authorized under permit numbers 74500-00-030 (Kodiak area) and 74500-04-003 (Shumagin area). These permits will be reviewed, renewed, and/or updated as necessary prior to commencement of research activities. Ms Wynne is also the letterholder on a 3-yr Marine Mammal Stranding Agreement with the Alaska Region National Marine Fisheries Service NOAA, Dept of Commerce, effective 27 October 2006. These authorize approach to islands used as Steller sea lion haulouts during aerial and vessel surveys and landing on sites for scat collection. The Shumagin Native Corporation and the Aleut Native Corporation have given written permission for sampling activities on Native selected lands in the region.

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VIII. CERTIFICATION AND SIGNATURE

I hereby certify that the foregoing information is complete, true, and correct to the best of my knowledge and belief. I understand that this information is submitted for the purpose of obtaining a permit under one or more of the following statutes and the regulations promulgated there under, as indicated in Section I of this application:

The Endangered Species Act of 1973 (16 U.S.C. 1531-1543) and regulations (50 CFR Part 222); and /or

The Marine Mammal Protection Act of 1972 (16 U.S.C. 1361-1407) and regulations (50 CFR Part 216).

I also understand that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001, or to penalties under the Endangered Species Act of 1973, the Marine Mammal Protection Act of 1972, or the Fur Seal Act of 1966, whichever are applicable.

Signed by: _____ Date: _____

Kate M. Wynne, Professor, University of Alaska Fairbanks

Table 1: List of Steller sea lion sites proposed for research activities by Wynne and Foy in the Central (CGOA) and Western Gulf of Alaska (WGOA). Core sites are those that may be visited quarterly for Brand Resighting (B), Scat Collection (S) and/or Aerial Surveys (A). Extended sites will be visited only as funding or weather conditions permit research activities.

<u>Region</u>	<u>Site Name</u>	<u>Latitude ° N</u>	<u>Longitude ° W</u>	<u>Survey Area</u>	<u>Planned Activity</u>
C GOA	Sugarloaf	58.887	152.04	Extended	
C GOA	Ushagat	58.967	152.317	Extended	
C GOA	Cape Barnabas	57.17	152.884	Core	A
C GOA	Cape Chiniak	57.632	152.138	Core	A
C GOA	Cape Ikolik	57.287	154.792	Core	A
C GOA	Cape Ugat	57.874	153.85	Core	A, B, S
C GOA	Chief Cove	57.874	153.85	Core	A, B, S
C GOA	Gull Point	57.358	152.605	Core	A
C GOA	Latax Rocks	58.668	152.522	Core	A, B, S
C GOA	Long Island	57.78	152.215	Core	A, B, S
C GOA	Marmot Island	58.228	151.796	Core	A, B, S
C GOA	Sea Lion Rocks	58.342	151.814	Core	A, B, S
C GOA	Sea Otter	58.519	152.222	Core	A, B, S
C GOA	Twoheaded	56.908	153.546	Core	A, B, S
C GOA	Ugak	57.393	152.292	Core	A
C GOA	Chowiet	56.009	156.69	Extended	
C GOA	Nagai Rocks	55.83	155.792	Extended	
C GOA	Chirikof	55.775	155.658	Extended	
C GOA	Sitkinak/	56.572	153.849	Extended	
C GOA	Shakun Rocks	58.547	153.692	Extended	
C GOA	Shaw	59.000	153.375	Extended	
C GOA	Puale Bay	57.677	155.385	Extended	
C GOA	Takli	58.029	154.521	Extended	
C GOA	Kilokak	57.156	156.275	Extended	
C GOA	Sutwik	56.517	157.341	Extended	
W GOA	Lighthouse Rocks	55.78	157.415	Extended	
W GOA	Kak	56.288	157.835	Extended	
W GOA	Atkulik	56.282	157.733	Extended	
W GOA	Chankliut	56.133	158.117	Extended	
W GOA	Seal Cape	55.997	158.422	Extended	
W GOA	Spitz	55.777	158.898	Extended	
W GOA	Mitrofanina	55.837	158.698	Extended	
W GOA	Jude	55.263	161.105	Core	A, B, S
W GOA	Atkins	55.053	159.29	Core	A
W GOA	The Whaleback	55.28	160.084	Core	A, B, S

W GOA	Chernabura Unga/Acheredin	54.753	159.55	Core Core	A
W GOA	Point Nagai/Mountain	55.121	160.817	Core	A, B, S
W GOA	Point	54.903	160.256		A, B, S
W GOA	Sea Lion Rocks	55.078	160.517	Core	A, B, S
W GOA	The Haystacks	55.268	160.056	Core	A, B, S
W GOA	Kupreanof Point	55.563	159.604	Core	A
W GOA	Paul Island	55.747	159.308	Core	A, B, S
W GOA	Wosnesenski Egg Island/ Sand	55.168	161.412	Core Core	A, B, S
W GOA	Point	55.279	161.412		A, B, S
W GOA	Twins	54.960	159.876	Core	A
W GOA	Castle Rock	55.263	159.496	Core	A, B
W GOA	Bird	54.667	163.286	Extended	
W GOA	Clubbing Rks N.	54.713	162.445	Extended	
W GOA	Clubbing Rks. S.	54.7	162.446	Extended	
W GOA	Olga Rocks SW	54.985	161.515	Extended	
W GOA	Olga Rocks NE	55.008	161.497	Extended	
W GOA	Sushilnoi Rocks	54.822	161.712	Extended	
W GOA	Pinnacle Rock	54.770	161.763	Extended	
W GOA	South Rocks	54.295	162.706	Extended	
W GOA	Caton	54.378	162.355	Extended	
EAI	Amak	55.464	163.149	Extended	
EAI	Sea Lion Rks (Amak)	55.463	163.202	Extended	

Table 2: Annually proposed activities from June 2007 through June 2012.

<u>Species</u>	<u>Life Stage</u>	<u>Sex</u>	<u>Annual Expected Take</u>	<u>Annual Number of Takes Per Individual</u>	<u>Take Action</u>	<u>Transport</u>	<u>Location</u>	<u>Dates/Time Period</u>
Steller Sea Lion (<i>Eumetopias jubatus</i>)	All ages	Both	13,000	4	Quarterly aerial survey	Not applicable	Central and Western Gulf of Alaska	June, Sept, Dec, March, 2007-2012
Steller Sea Lion (<i>Eumetopias jubatus</i>)	All ages	Both	13,000 in 2008, 2010, 2012 ¹	7 additional in 2008, 2010, 2012 ¹	Biennial replicate aerial surveys	Not applicable	Central and Western Gulf of Alaska	June (7 additional surveys) in 2008, 2010, 2012 ¹
Steller Sea Lion (<i>Eumetopias jubatus</i>)	All ages	Both	2,000	4	Quarterly scat collections	In-state transport of scats from field to Kodiak Fisheries Research Center	Central and Western Gulf of Alaska	June ² Sept, Dec, March, 2007-2012
Steller Sea Lion (<i>Eumetopias jubatus</i>)	All ages	Both	500	20	Land-based biweekly brand resighting	Not applicable	Sea Otter and Long Islands, Central GOA	midSept- mid May, 2007-2012
Steller Sea Lion (<i>Eumetopias jubatus</i>)	All ages	Both	1,000	4	Boat-based quarterly brand resighting	Not applicable	Western Gulf of Alaska	June ² , Sept, Dec, March, 2007-2012

¹ or as scheduled by NMFS² Rookeries will not be approached for scat collection or brand resighting in June to avoid disturbance during breeding and pupping seas

Appendix A: Curricula vitae for Principal Investigator and Co-Investigators

KATE) M. WYNNE (PI)

• FITC 118 Trident Way • Kodiak AK 99615 • (907)486-1517 • ffkmw@uaf.edu

EDUCATION

December 1977 B.S. Wildlife Resources, University of Idaho, Moscow, ID
August 1981 M.S. Wildlife Management, University of Maine, Orono, ME

CURRENT POSITION (2006--present)

Professor of Marine Biology, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks,
Marine Mammal Specialist in the Marine Advisory Program.

ADVISORY ROLES AND POSITIONS

Dept of Commerce's Marine Fisheries Advisory Committee (1999-2005)
NMFS' Alaska Scientific Review Group (1995-present)
NMFS' Steller Sea Lion Recovery Team (2001- present)
NMFS' Ballard Locks Pinniped-Steelhead Interaction Task Force (1994-1996)
NMFS' Steller Sea Lion Research Coordination Committee (2001)
NMFS' National Working Group on Unusual Marine Mammal Mortality (1996-99)
ADFG Alaska Steller Sea Lion Restoration Team (2000-2001)

PERTINENT FIELD EXPERIENCE

Active participant in the survey, capture and/or tagging of
Steller sea lions: Alaska (1991-present); California sea lions: California (1990)
Harbor seals: New England (1981-87); Alaska (1990-present)
Harbor porpoise, large cetaceans: New England (1987), California (1986), Alaska (1991-present)
Sea otters: Alaska (1988)
Weddell seals: Antarctica (1993)

SELECTED PUBLICATIONS

Moore, S.E., K. Wynne, J.Clement, and J. M. Grebmeier. *In press*. Gray whales forage southeast of Kodiak Island, Alaska. *Marine Mammal Science Note*

Witteveen, B.H. R.J. Foy, K.M. Wynne, and Y. Tremblay. *Final review*. Investigation of foraging habits and prey preference of humpback whales (*Megaptera novaeangliae*) near Kodiak Island, Alaska using acoustic tags. *Marine Mammal Science, Submitted Aug 2005*

Witteveen, B.H., K.M.Wynne, and TJ Quinn II. *Final review*. A feeding aggregation of humpback whales (*Megaptera novaeangliae*) near Kodiak Island, Alaska: historical and current abundance estimation. Submitted to *Alaska Fisheries Research Bulletin*

Witteveen, B.H. R.J. Foy, and K.M. Wynne. 2006. The effect of predation (current and historical) by humpback whales (*Megaptera novaeangliae*) on fish abundance near Kodiak Island, Alaska. *Fishery Bull.*, 104:10-20.

Trites, A.W, S.K. Atkinson, D.P. DeMaster, L.W. Fritz, T.S. Gelatt, L.D. Rea, and K.M. Wynne (eds.). 2006. *Sea Lions of the World*. Alaska Sea Grant College Program, University of Alaska Fairbanks.AK-SG-06-01. 664pp

Gilbert, JR, GT Waring, KM Wynne, and N Guldager. 2005. Changes in abundance and distribution of harbor seals in Maine, 1981-2001. *Marine Mammal Science* 21(3): 155-171.

Wynne. KM. 2005. Alaska's Steller sea lions: boom to bust- and back? *Alaska Seas and Coasts*, Vol 1. Univ. of Alaska Sea Grant Marine Advisory Program, Anchorage, AK 12pp.

- Wynne, K., R.J. Foy, and C.L. Buck. 2005. Gulf Apex Predator-prey Study (GAP) Final Rept. NOAA Grant NA 16FX1270, University of Alaska Fairbanks, Kodiak, AK. 241pp. Waite, J.M., K.M. Wynne, and D.K. Mellinger. 2003. Documented sighting of a North Pacific right whale in the Gulf of Alaska and post-sighting acoustic monitoring. *Northwest Naturalist* 84:38-43.
- Maniscalco, J.M., K. Wynne, K.W. Pitcher, M.B. Hanson, S.R. Melin and S. Atkinson. 2004. The occurrence of California sea lions (*Zalophus californianus*) in Alaska. *Aquatic Mammals* 30(3): 427-433.
- Trites, A.W., K. Hunt, S.K. Wasser, and K. Wynne. 2003. Assessing the physiological stress of Steller sea lions in Alaska using fecal hormone analysis. Final Rept to the North Pacific Marine research program, Grant #00-0045. School of Fisheries and Ocean Sciences, Univ. of Alaska Fairbanks 24 pp
- Wynne, K.M., R.J. Foy, B. L. Norcross, C. L. Buck, and S. Hills. 2003. Availability and use of prey by Steller sea lions in the eastern Kodiak area, 1999-2000. Final Rept. to the North Pacific Marine Research Program, School of Fisheries and Ocean Sciences, Univ. of Alaska Fairbanks, 23 pp
- Wynne, K. and R.J. Foy. 2002. Is it food now? Gulf Apex Predator-prey study. In *Steller Sea Lion Decline: Is It Food II*. Eds. D. DeMaster and S. Atkinson. University of Alaska Sea Grant, AKSG 02-02. Pp. 49-52.
- Kruse, G.H., M. Crow, E.E. Krygier, D.S. Lloyd, K.W. Pitcher, L.D. Rea, M. Ridgway, R.J. Small, J. Stinson, and K.M. Wynne. 2001. A review of proposed fishery management actions and the decline of Steller sea lions *Eumetopias jubatus* in Alaska: a report by the Alaska Steller Sea Lion Restoration Team. Regional Info Rept. No. 5J01-04. AK Dept of Fish and Game Div of Commercial Fisheries, P.O. Box 25526, Juneau, AK 99802-5526. 106pp
- Small, R. J., G.W. Pendleton, and K.M. Wynne. 2001. Harbor seal population trends in the Ketchikan, Sitka, and Kodiak areas of Alaska, 1983-1999. pg 8-30 in *Harbor Seal Investigations in Alaska*, Annual Report. NOAA Grant Contract NA87FX0300, AK Dept of Fish Game, 333 Raspberry Rd, Anchorage.
- Wynne, K.M. and M. Schwartz. 1999. *Guide to marine mammals and turtles of the U.S. Atlantic and Gulf of Mexico*. URI Sea Grant Pub RIU-H-99-001/UAF Sea Grant Pub MAB-50, Narragansett, RI. 114 pp.
- Fall, J.A., V. Vanek, M. Riedel, and K. Wynne. 1999. Community-based harbor seal management and biological sampling. Exxon Valdez Oil Spill Restoration Project Final Report (Restoration Project 97244 and 98244), Alaska Dept of Fish and Game, Division of Subsistence, Anchorage, AK., 31 pp.
- Wynne, K.M. and M. Merklein. 1996. Observer program design considerations: a survey of eight Alaskan small-boat fisheries. Final Project Report to NMFS Alaska Region, Juneau, AK. 97pp
- Barlow, J.R., W. Baird, J.E. Heyning, K. Wynne, A.M. Manville, L.F. Lowry, D. Hanan, J. Sease, and V.N. Burkanov. 1994. A review of cetacean and pinniped mortality in coastal fisheries along the west coast of the USA and Canada and the east coast of the Russian Federation. pp 405-426 in *Gillnets and Cetaceans*. Perrin, W.F., G.P. Donovan, and J. Barlow (eds). Rept. to International Whaling Commission, Special Issue 15, 629pp.
- Wynne, K.M. 1992. *Guide to Marine Mammals of Alaska*. Alaska Sea Grant, Marine Advisory Program Bulletin #44, 75pp.
- Wynne, K.M. 1990. Marine mammal interactions with the salmon drift gillnet fishery on the Copper River Delta, Alaska 1988 and 1989. Alaska Sea Grant College Program, Technical Report No. 90-05, 36pp.
- Wynne, K.M. and J.R. Gilbert. 1985. Investigating marine mammal-fisheries interactions: a special need for communication. *Proc. N.E. Fish and Wildlife Conf.* 41:36-38.

CATHERINE L. FOY (née Hegwer)

301 Research Ct, Rm 210, Kodiak, AK 99615

EDUCATION

- 2000-2003 MS Marine Biology, School of Fisheries and Ocean Science, University of Alaska Fairbanks.
 Graduation December 2003. Thesis: Seasonal abundance and diversity of nearshore fishes around
 Steller sea lion haulouts of Kodiak Island.
 1994-1999 BS Biology, University of Alaska Fairbanks
 1988-1990 AA Business Administration, Ambassador College, Big Sandy, Texas

WORK EXPERIENCE

- 2003-present Steller sea lion Project Manager for Aleutians East Borough.
 2001-2003 Research assistant for Steller sea lion forage fish project Kodiak, Alaska.
 2002 Summer field technician for U.S. Fish and Wildlife Service, Chandalar River Chum Salmon sonar
 station.
 2001-2002 Student representative: University of Alaska Dive Safety Board.
 2001 Research diver: Homer Department of Fish and Game, black rockfish survey.
 1994-2001 Teaching assistant: Anatomy and Physiology, Biology, Chemistry, Microbiology, College
 Algebra.
 2000 Research Diver: Urchin, kelp and sea otter abundance surveys of Adak Island.
 1999 Research Diver: Yellowfin sole habitat project.
 1998 Field Technician: Globec cruise on Alpha Helix.
 1998 Laboratory Technician: Yellowfin sole habitat project.
 1983-20003 Commercial fisherman (Seasonal Crewmember): Cook Inlet Salmon fishery, Cook Inlet set
 net, Cook Inlet drift net, sunken gill net, herring and Halibut fishing off of Kodiak, Afognak and Shuyak
 Islands.

PERTINENT PUBLICATIONS AND RESENTATIONS

- Foy, CL 2006. Assessing Population Trends and Dietary Intake of Steller Sea Lion Populations along the
 Western Alaska Peninsula and Eastern Aleutians. Steller sea lion Mitigation committee of the North
 Pacific Fisheries Management Council.
- Foy, CL, B Konar, S Hills and K Wynne. Seasonal Abundance and Diversity of Nearshore Fishes around
 Steller Sea Lion Haulouts of Kodiak Island. Steller sea lion Mitigation committee of the North Pacific
 Fisheries Management Council.
- Hegwer, C.L 2005. Steller sea lion project status update for the Aleutians East Borough Assembly and
 public.
- Hegwer, CL 2005 Steller sea lion research; directions and background. Presented to School age children of
 the Aleutians East Borough.
- Hegwer, CL and B Konar, S Hills, K Wynne 2004. Seasonal Abundance and Diversity of Nearshore Fishes
 and Habitat of Steller Sea Lion Haulouts of Kodiak Island. World Fish Congress. Vancouver, BC.
- Hegwer, CL 2003. Seasonal Abundance and Diversity of Nearshore Fishes and Habitat of Steller Sea Lion
 Haulouts of Kodiak Island. Thesis Defense. Fairbanks, Alaska.
- Hegwer, CL and B Konar 2002. Sampling procedures for nearshore fish assemblages around Steller sea lion
 haulouts of Kodiak Island. Steller Sea Lion Principal Investigators Orientation & Coordination Meeting.
 Anchorage, Alaska.
- Hegwer, CL and B Konar 2002. Seasonal and depth variation of nearshore fish assemblages around Kodiak
 Island. American Fisheries Society Annual Meeting. Girdwood, Alaska.

Hegwer, CL and B Konar 2002. Seasonal and depth variation of nearshore fish assemblages around Kodiak Island. PCCRC annual meeting. Anchorage, Alaska.

Hegwer, CL, B Konar, and K Wynne 2002. Seasonal and depth variation of nearshore fish assemblages compared to Steller sea lion diets around Kodiak Island. Current research on Steller sea lions. Anchorage, Alaska.

Hegwer, CL, 2001. Student Life in the School of Fisheries and Ocean Science. University of Alaska Board of Regents Meeting. Anchorage, Alaska.

Foy, CL Foy, CL, B Konar, S Hills and K Wynne. Seasonal Abundance and Diversity of Nearshore Fishes around Steller Sea Lion Haulouts of Kodiak Island (In Review). Marine Mammal Science 2006.

RELEVANT SKILLS AND KNOWLEDGE:

I am familiar with ecological sampling methods for the intertidal and nearshore marine environment. I have conducted SCUBA surveys for fish, algal and benthic fauna, and participated in the analysis and reporting of these results. In particular, I am familiar with the Kodiak area nearshore marine environment, as this was the location of my thesis field work.

BRIANA H. WITTEVEEN (CI)

University of Alaska Fairbanks School of Fisheries and Ocean Sciences
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EDUCATION

In Progress: Doctor of Philosophy, Conservation Biology, Department of Biology, University of Central Florida, Orlando, FL

August 2003 :Master of Science Fisheries, School of Fisheries and Ocean Sciences, University of Alaska Fairbanks, Fairbanks, AK

June 2000, Bachelor of Science Zoology, College of Arts and Sciences, University of Washington, Seattle, WA, Cum Laude

CURRENT POSITION

Marine Mammal Research Technician - University of Alaska Fairbanks

- Conduct research to assess population dynamics and foraging ecology of marine mammals as part of the Gulf Apex Predator Prey (GAP) project in Kodiak, Alaska.
- Serve as Regional Coordinator for Gulf of Alaska on Structure of Populations Levels of Abundance and Status of Humpback Whales (SPLASH) Steering Committee
- Photo-identification, biopsy, and radio tagging of regional cetacean species
- Design and conduct cetacean proof-of-concept study
- Analyze and report findings in related publications and other scientific forums
- Supervise field work and data analysis of seasonal technicians
-

PREVIOUS POSITIONS

2000 – June 2003 Research Assistant, University of Alaska Fairbanks, Kodiak, AK

1998 – 2000 Fish and Wildlife Technician Alaska Department of Fish and Game, Sand Point, AK

RELATED EXPERIENCE

1999 - Present Humpback whale Research Shumagin Islands, AK

Research focused on population dynamics through photo-identification and biopsy sampling of individual whales. Also study aspects of feeding ecology and habitat usage.

2001 – Present Steller sea lion Research Kodiak, AK

Assist with regional Steller sea lion surveys through monthly aerial surveys and scat collection

HONORS/AFFILIATIONS

Member - Phi Kappa Phi

University of Central Florida Trustees Doctoral Fellow, 2005 to 2007

University of Alaska Fairbanks Rasmuson Fisheries Research Fellow, 2001 to 2003

Member - Marine Mammal Society, 2001 to present

PEER REVIEWED PUBLICATIONS

Witteveen, B.H., J. M. Straley, O. von Ziegsar, D.H. Steel, and C.S. Baker. 2004. Abundance and mtDNA differentiation of humpback whales (*Megaptera novaeangliae*) in the Shumagin Islands, Alaska. *Can. J. Zoo.* 82(8): 1352-1359.

Witteveen, B.H., R.J. Foy, and K.M. Wynne. 2006. Potential current and historic prey removal due to consumption by humpback whales (*Megaptera novaeangliae*) near Kodiak Island, Alaska. *Fish. Bull.* 104: 10-20.

Witteveen, B.H., K.M. Wynne, and T.J. Quinn II. *In press*. A feeding aggregation of humpback whales (*Megaptera novaeangliae*) near Kodiak Island, Alaska: current and historic abundance estimation. *Alaska Fisheries Research Bulletin*.

Witteveen, B.H., R.J. Foy, K.M. Wynne, and Y. Tremblay. *In review*. Investigation of foraging habits and prey selection by humpback whales (*Megaptera novaeangliae*) using acoustic tags and concurrent fish surveys.

ABSTRACTS/REPORTS

Foy, R. and B.H. Witteveen. 2003. Foraging ecology of humpback whales (*Megaptera novaeangliae*) near Kodiak, Alaska. In *Abstracts of the 15th Biennial Conference on the Biology of Marine Mammals*, Greensboro, NC, December 2003

Witteveen, B.H. 2003. An apparent feeding aggregation of humpback whales (*Megaptera novaeangliae*) near Kodiak Island, Alaska: Historical and currently abundance estimation. In *Abstracts of the 15th Biennial Conference on the Biology of Marine Mammals*, Greensboro, NC, December 2003

Witteveen, B.H. 2003. Abundance and feeding ecology of humpback whales (*Megaptera novaeangliae*) within Steller sea lion (*Eumetopias jubatus*) critical habitat in Kodiak, Alaska. *Marine Science in the Northeast Pacific: Science for Resource Dependent Communities*, Anchorage, AK.

Wynne, K.M. and B.H. Witteveen. 2005. Opportunistic aerial sightings of large whales within Steller sea lion critical habitat in the Kodiak Archipelago. pp 105-119 *in Gulf Apex Predator-prey Study (GAP) Final Rept.* NOAA Grant NA 16FX1270, University of Alaska Fairbanks, Kodiak, AK. 241pp.

Foy, R.J., B.H. Witteveen, L. Baraff and K. Wynne. 2005. Preliminary investigations into prey and baleen whale distribution relative to the oceanography on the north and east side of Kodiak Island (ESOK) pp 15-21 *in Gulf Apex Predator-prey Study (GAP) Final Rept.* NOAA Grant NA 16FX1270, University of Alaska Fairbanks, Kodiak, AK. 241pp.

JANE MCKENZIE (CI)

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EDUCATION

1992: Bachelor of Science (1st class Honours) – Zoology Department, University of Melbourne

2006: PhD, Zoology, La Trobe University, Melbourne Australia

PERTINENT FIELD EXPERIENCE includes

- Conducted research on population demographics of New Zealand fur seals and their interactions with the marine ecosystem and fisheries in southern Australia.
- focus on the ecology, conservation and management of pinniped species for the past 10 years.
- assisted in the collection of population data and diet samples from pinnipeds,
- supervised and conducted mark-recapture of New Zealand fur seal pups,
- collected data on the reproduction and foraging ecology of Hawaiian monk seals.

CURRENT POSITION

Post-doctoral Fellow, School of Fisheries and Ocean Science, University of Alaska Fairbanks

RELEVANT PUBLICATIONS

- Coulson, C., Hill, J., McKenzie, J and Walters, B. (1999) The Smelter in the Park: Managing Wildlife for Biodiversity. In Craig, J.L., Mitchell, N. & Saunders, D.A. (eds) *Nature Conservation 5 – Managing the Matrix*, Surrey Beattie, Chipping Norton, NSW. Pp. 360-371.
- McKenzie, J., Goldsworthy, S.D., Shaughnessy, P.D., and McIntosh, R. (2005). Understanding the impediments to the growth of Australian sea lion populations. South Australian Research and Development Institute (Aquatic Sciences), Adelaide. SARDI Publication number RD04/0171.
- McKenzie, J., Parry, L.J., Page, B., and Goldsworthy, S.D. (2005). Estimation of pregnancy rates and reproductive failure in New Zealand fur seals (*Arctocephalus forsteri*). *Journal of Mammalogy*. 86(6): 1237-1246.
- McKenzie, J., Page, B., Goldsworthy, S.D., and Hindell, M.A. (unpub. ms). Growth strategies of New Zealand fur seals (*Arctocephalus forsteri*) in southern Australia.
- McKenzie, J., Page, B., Shaughnessy, P.D. and Hindell, M.A. (unpub. ms). Age and reproductive maturity of New Zealand fur seals (*Arctocephalus forsteri*) in southern Australia.
- McKenzie, J., Page, B., Goldsworthy, S.D., Hindell, M.A. (in prep) Behavioural responses of free-ranging New Zealand fur seals (*Arctocephalus forsteri*) to darting and the use of tiletamine-zolazepam (Zoletil[®]) for remote chemical immobilization.
- McKenzie, J. and Coulson, G. (in prep) Distribution of the Long-nosed Potoroo, *Potorous tridactylus* in fragmented habitat in south-western Victoria.
- Page, B., McKenzie, J., Sumner, M. D., Coyne, M., and Goldsworthy, S. D. (in press). Spatial separation of foraging habitats among New Zealand fur seals. *Marine Ecological Progress Series*.
- Page, B., McKenzie, J., and Goldsworthy, S.D. (2005). Inter-sexual differences in New Zealand fur seal diving behaviour. *Marine Ecological Progress Series*. 304: 249-64.
- Page, B., McKenzie, J., and Goldsworthy, S.D. (2005). Dietary resource partitioning among sympatric New Zealand and Australian fur seals. *Marine Ecological Progress Series* 293:283-302.
- Page, B., McKenzie, J., Hindell, M.A., and Goldsworthy, S.D. (2005). Drift dives by male New Zealand fur seals (*Arctocephalus forsteri*). *Canadian Journal of Zoology* 83(2): 293-300.

- Page, B., McKenzie, J., McIntosh, R., Baylis, A., Morrissey, A., Calvert, N., Haase, T., Dowie, D., Shaughnessy, P.D. and Goldsworthy, S.D. (2004) Entanglement of Australian sea lions and New Zealand fur seals in lost fishing gear and other marine debris: before and after government and industry attempts to reduce the problem. *Marine Pollution Bulletin*. 49: 33-42.
- Page, B., Goldsworthy S.D., Hindell, M.A. and McKenzie, J. (2002) Inter-specific differences in male vocalisations of three sympatric fur seals (*Arctocephalus* spp.). *Journal of Zoology*. 258:49-56.
- Shaughnessy, P.D., Dennis, T.E., Dowie, D. and McKenzie, J. (in prep) Status of the Australian sea lion, *Neophoca cinerea*, at three small colonies on Kangaroo Island, South Australia.
- Baylis, A.M.M., Page, B., Peters, K., McIntosh, R., McKenzie, J. and Goldsworthy, S. (2005) The ontogeny of diving behaviour in New Zealand fur seal pups (*Arctocephalus forsteri*). *Canadian Journal of Zoology* 83: 1149-1161.

CHERILYN LUNDGREN (CI)

P.O. Box 204, Sand Point, AK 99661(907) 383-5693

EDUCATION AND TRAINING

- 2004 Trained in aerial and vessel survey methods for the Aleutians East Borough Steller Sea Lion Project: Disturbance documentation, aerial survey photography, brand resight protocol and scat collections.
- 1991 SST Travel School: Lynwood, WA. Certificate of Completion in Travel and Tourism.
- 1990 Shoreline Community College: Seattle, WA.
- 1990 Aleutian East Borough High School, Sand Point. Diploma

WORK EXPERIENCE

- 2006-present Co-Investigator for the Aleutians East Borough Steller Sea Lion Project.
- 2004-2005 Field Technician for Aleutians East Borough Steller sea lion project.
- 1992 ARA. Boeing food service and catering, Edmonds, WA.
- 1992 Markair. Sand Point AK. Cargo handling for commercial airlines.
- 1990-1991, 1994-1996 Aleutian Commercial Company (general Store) Sand Point, AK. Retail Store clerk and cashier. Duties include customer service, ordering, pricing, display, cash handling and some computer work.
- 1989-1990 Reeve Aleutian Airways. Sand Point, AK. Passenger Service Representative and Cargo handler. Duties included tagging of luggage, loading and unloading of aircraft, aircraft balance and customer assistance, information and ticketing.
- 1981-1994, 2005 Sand Point High School Swimming Pool. Lifeguard. Responsible for the safety and security of the public during evening hours. Cleaning and pool maintenance. Seasonal.
- 1997 City of Sand Point Office work duties included Filing, collecting money, deposits, billing and other office duties as needed.
- 1997-2004 Shumagin Distributors Assistant Manager grocery store. Duties included starting store up. Ordering groceries, handling money, entering items into computer, balancing registers. Computer training Windows.

RELEVANT SKILLS AND BACKGROUND

I am a lifetime resident of Sand Point, and a mother of two children. While I left to further my education, I am committed to community growth and have strong ties to the community. I would characterize myself as personable and energetic, with the ability to learn and adapt quickly. I have the

ability to coordinate and cooperate with others in a business environment and work well with the public. I am committed to high personal standards of conduct. I have worked with computer over the years but do not have a lot of training in one area. I have learned to work with computers used in my other jobs by hands on experience. I am not afraid of learning something new and feel it would not take long to learn a new program.

PETER DEVINE JR. (CI)

P.O. Box 5, Sand Point, AK 99661(907) 383-6096

TRAINING

- 2004 Trained in aerial and vessel survey methods for the Aleutians East Borough Steller Sea Lion Project: Disturbance documentation, aerial survey photography, brand resight protocol and scat collections.
- 2004 Sea Otter small boat survey methods, Alaska Sea Otter and Steller Sea Lion Commission.
- 2002 Alaska Native Association Grant Writing.
- 2002 Reindeer husbandry range management and telemetry workshop, UAF.
- 2000 Alaska native Harbor Seal Commission: Trained as Bio Sampler for seals taken as native subsistence.

FIELD EXPERIENCE

- 2006-present Co-Investigator for the Aleutians East Borough Steller Sea Lion Project.
- 2004-2005 Field Technician for Aleutians East Borough Steller sea lion project.
- 1990-2005 Buffalo Census Observer and guide for Shumagin Corporation, Sand Point.
- 2003-2005 Bio-sampling for Fish and Wildlife Service.
Collection of sea otter tissue sampling during marking and tagging survey.
- 2003 Alaska Department of Fish and Game, Subsistence Division; harbor seal survey.
- 2003 Marine Mammal Stranding of Steller sea lion, Report and documentation for the Alaska Marine Mammal Stranding Network.
- 2000 Documented harvest and bio-sampling of stranded Fin Whale.

ADMINISTRATIVE EXPERIENCE

- 2001-2005 Board of Directors for the Shumagin Corporation.
- 2001-2005 QT Tribal Council Member.
- 2004 Vice President-QT Tribal Council.
- 2004-2005 Elected and served at the QTT tribal council as a primary member for Aleutian Pribilof Region.
- 2002-2004 Native Americans Implementing a Tribal Model for Federal Site Restoration. Aleutian/ Pribilof Region Grant Administration.
- 2003-2004 Secretary/ tresirer for Shumagin Corporation
- 2002-2003 QTT Tribe Advisory Member:
Migratory Bird Regional Management Advisory Member.

RELEVANT SKILLS AND BACKGROUND

I am a lifelong resident of the Shumagin region with close community ties. In addition to the listed training and field experience, I have the proven ability to work with state or federal agencies for environmental and wildlife projects in this region. I have experience commercial and subsistence fishing in the waters around Sand Point. I am familiar with the weather patterns and marine hazards of the area and am capable of safely operating skiffs and small boats. As a native subsistence hunter, I respect the environment and I am familiar with animal behavior due to a lifetime of close observation.