

STATE OF ALASKA

2009-08
SEAN PARNELL,
GOVERNOR

DEPARTMENT OF FISH AND GAME

DIVISION OF WILDLIFE CONSERVATION

1300 College Road
Fairbanks, Alaska 99701-1551
PHONE: (907) 459-7213
FAX: (907) 452-6410

DWC Animal Care and Use Committee

TO: Gail Blundell

FROM: Dr. Kimberlee Beckmen

Kimberlee P. Beckmen

DATE: 8/23/09

SUBJECT: Approval of Animal Care and Use Protocol

ACUC Protocol Number: 09-08

Principal Investigator or Research Leader: Gail Blundell

Your Assurance of Animal Care entitled "Investigations of harbor seals in Alaska"

using vertebrates was reviewed by the Division of Wildlife Conservation Animal Care and Use Committee (ACUC) and has been approved.

The "Assurance of Animal Care" form along with any revisions you submit will be kept on file in my office, 204, ADF&G Regional Office Fairbanks.

This Assurance is valid for 12 months pending the conditions listed above and must be kept current with respect to new methods or techniques as they evolve. An annual and final report of the number of animals used/captured and their outcomes (i.e. survived, injured, euthanized, died xx days post capture, collar removed) is required annual prior to renewal being considered. The Assurance will be returned to you each year for review and, if desired, renewal. It may be renewed for a maximum of two times. Thereafter, a new Assurance must be filed with the ACUC.

All individuals performing manipulations on vertebrates (handling, capture, blood collection, monitoring anesthetized, etc.) must demonstrate proper training, experience and capability. Any capture mortalities must be reported immediately to the staff veterinarian/ACUC chair or other available ACUC member.

STATE OF ALASKA

2009-08

Sarah Palin,
GOVERNOR

1300 College Road
Fairbanks, Alaska 99701-1551
PHONE: (907) 459-7213
FAX: (907) 459-7332

Kimberlee

My email is
not working.

I approve this
protocol (09-08).

Leri Quakenbush

John Wells & Christine ~~Schmale~~
Schmale need AWA transmiss

FISH AND GAME LIFE CONSERVATION

CARE AND USE COMMITTEE CE OF ANIMAL CARE FORM

AL DATE:

8/23/09

RENEWALS: FIRST

SECOND

RENEWAL MONTH:

Aug

PLEASE CHECK THE APPROPRIATE BOX INDICATING WHETHER THIS IS A:

NEW SUBMISSION

THREE YEAR MANDATORY RE-WRITE

MAJOR MODIFICATION TO A CURRENT ASSURANCE ACUC #

I. ANIMAL HANDLING STAFF

Principal Investigator or Research Leader: Gail Blundell

Phone #: 907-465-4345

e-mail: gail.blundell@alaska.gov

Office Location: Douglas, AK

Title of Project/Management Action:

Investigations of harbor seals in Alaska

Is this funded by Federal Aid? :Yes

Approx. Starting Date: _____

Completion Date: _____

Ongoing



Name: Kimberlee B. Beckmen Degree(s): Ph.D., DVM

Role(s) on Project: Will serve as the ADF&G veterinarian

Email address: kimberlee.beckmen@alaska.gov

ADF&G affiliation: *Be specific biologist permanent; part-time seasonal; etc...* State Veterinarian, Division of Wildlife Conservation; permanent

Outside University/Agency affiliation:

Completed formal Animal Capture Training? YES NO date/course: February 2003; Safe Capture

Completed formal Animal Welfare Training such as the UAF Ensuring the Responsible Use of Animals in Research and Teaching or other University's course? YES NO date/name of course: May 22, 2002; IACUC

(SAFECAPTURE or other Immobilization/capture training IS **NOT** ANIMAL WELFARE TRAINING)

Received DWC Controlled Substance and Drug Handling Training and Certification in 2009:

YES NO

Brief Outline of Experience (limit to how it applies to your activities on THIS project): Conducts research on diseases and parasites in free-ranging wildlife, provides information and expertise on wildlife health issues to ADF&G biologists and trains and assists staff with field work, surgery, and anesthesia. Kimberlee also chairs the IACUC.

Name: Jill Prewitt Degree(s): B.S., M.S.

Role(s) on Project: Capture, handling and biological sampling of harbor seals. Processing and organization of biological samples.

Email address: jill_prewitt@alaskasealife.org

ADF&G affiliation: *Be specific biologist permanent; part-time seasonal; etc...* not affiliated

Outside University/Agency affiliation: Alaska SeaLife Center research coordinator

Completed formal Animal Capture Training? YES NO date/course _____

surgery room and in a field setting. She also has 3 years experience working as a non-licensed veterinary technician.

Name: John Wells

Degree(s):

Role(s) on Project: Coordination of logistics for fieldwork, inventory and procurement of supplies, assistance with capture and handling of seals and repair/maintenance of equipment and boats.

Email address: john_wells@fishgame.state.ak.us

ADF&G affiliation: *Be specific biologist permanent; part-time seasonal; etc...* Wildlife Technician III; permanent seasonal

Outside University/Agency affiliation:

Completed formal Animal Capture Training? YES NO date/course: February 23, 2006; Safe Capture

 Completed formal Animal Welfare Training such as the UAF Ensuring the Responsible Use of Animals in Research and Teaching or other University's course? YES NO date/name of course _____

(SAFECAPTURE or other Immobilization/capture training IS **NOT** ANIMAL WELFARE TRAINING)

Received DWC Controlled Substance and Drug Handling Training and Certification in 2009:

YES NO

Brief Outline of Experience (limit to how it applies to your activities on THIS project): Since June 2005, John has worked with the ADF&G Harbor Seal Research program. During this time he has assisted in the capturing, handling, welfare monitoring, and sampling of harbor seals.

Name: Christine Schmale

Degree(s): A.A., B.S.

Role(s) on Project: Capture and handling of seals, process lab samples, logistics, GIS data management and analysis, manuscript/report writing.

Email address: christine.schmale@alaska.gov

ADF&G affiliation: *Be specific biologist permanent; part-time seasonal; etc...* Wildlife Biologist II, permanent

Experience in biochemistry, histology, blood chemistries including collection, processing and analysis.

Name: Darce Holcomb Degree(s): B.S.

Role(s) on Project: Assist with capture and handling of seals, biological sampling and processing of biological samples.

Email address: fsdkf2@uaf.edu

ADF&G affiliation: *Be specific biologist permanent; part-time seasonal; etc...*

Outside University/Agency affiliation: Graduate student, University of Alaska Fairbanks

Completed formal Animal Capture Training? YES NO date/course: Fall 2007

Completed formal Animal Welfare Training such as the UAF Ensuring the Responsible Use of Animals in Research and Teaching or other University's course? YES NO date/name of course: January 2000, Principals of Humane Animal Care and Use; August 2005, Responsible Conduct of Research

(SAFECAPTURE or other Immobilization/capture training IS **NOT** ANIMAL WELFARE TRAINING)

Received DWC Controlled Substance and Drug Handling Training and Certification in 2009:

YES NO

Brief Outline of Experience (limit to how it applies to your activities on THIS project): Darce has experience capturing and handling harbor seals and processing biological samples.

Name: Todd O'Hara Degree(s): PhD., D.V.M.

Role(s) on Project: Assist with capture and handling of seals, biological sampling and processing of biological samples for NPS and ADFG.

Email address: fftmo@uaf.edu

ADF&G affiliation: *Be specific biologist permanent; part-time seasonal; etc...*

Outside University/Agency affiliation: Associate Professor of Wildlife Toxicology at the University of Alaska Fairbanks

II. USE OF ANIMALS

ANIMAL SPECIES	NUMBER USED (YEAR 1)	NUMBER USED (YEAR 2)	NUMBER USED (YEAR 3)
<i>Phoca vitulina</i>	≤250	≤250	≤250

Basic scientific methodology/research design and justification of number of animals to be used goes under Purpose of Study below.

CLASSIFICATION OF PROJECT:

RESEARCH IN A FIELD SETTING ONLY

MANAGEMENT ACTION IN A FIELD SETTING ONLY

RESEARCH ON VERTEBRATES HOUSED IN A CAPTIVE SETTING ONLY

USE OF VERTEBRATES IN BOTH A FIELD AND HOUSED IN A CAPTIVE SETTING

JOINT RESEARCH WITH A FEDERAL AGENCY

STUDY AREAS:

FIELD STUDIES: *[If applicable, please describe the location (including GMU and herd if applicable) of your field study.*

Fieldwork in 2009 will be conducted in Tracy Arm Ford's Terror (TAFT) Wilderness Area in Southeast Alaska. Seals will be captured in Tracy Arm and Endicott Arm.

CAPTIVE ANIMAL HOUSING AREA FOR GREATER THAN 12 HRS (NOT APPLICABLE TO FIELD SETTINGS):

MOOSE RESEARCH CENTER

PALMER AGRICULTURAL STATION

OTHER (PLEASE DESCRIBE): {overwrite here}

IS THIS ASSURANCE BEING REVIEWED BY ANOTHER INSTITUTION'S OR AGENCY'S IACUC?

YES

NO

Rationale for the use of live animals: *[Why must animals be used rather than cell cultures, computer models, cadavers, etc.? If this is a field study you may indicate what biological features of a species or population this activity is intended to evaluate or regulate.]*

This is a field study that evaluates biological parameters of harbor seals. Equipping these animals with external heart rate monitors, time-depth recorders, VHF transmitters, and satellite tags will permit monitoring of their movements, energetic costs and haulout attendance in their natural habitat throughout the year. Additionally, we will obtain data on health and physiological status of animals at the time of capture to determine what factors may be contributing to differences in survival and reproductive success among individuals. Data on diets of individuals prior to capture and health/physiology of individuals at time of capture also will be linked with real-time tracking of foraging seals while concurrently assessing available prey. This may provide insight into differences in foraging decisions and prey selection relative to condition of the individual and may increase our understanding of factors contributing to the different population trajectories in different areas.

Appropriateness of species to be used: *[Briefly describe the biological characteristics of the animal species selected that justifies its use in the proposed studies. If this is a field study, please explain why this work will benefit the particular species or population under study.]*

Harbor seals in the Gulf of Alaska have undergone dramatic population changes over the past 20-30 years. The mechanisms contributing to the declines are poorly understood. Therefore collection of sample related to health status (e.g., disease, contaminants, body condition) especially when compared to samples collected from other populations or years with differing population trends will help us understand what mechanisms may be contributing to the population declines or lack of recovery in some areas. Also, the heart rate study will be looking at the effect of boat traffic on harbor seals. This information will be valuable as a tool to educate vessel operators and tourists who use areas where harbor seals live.

Basic scientific methodology/research design and number of animals to be used: *[How did you determine the number of animals required? When possible include a statistical power justification of the group size(s). For complex studies, including a flow chart or table showing group sizes, time frame, etc. may be helpful in understanding how the total number of animals was determined. Basic scientific methodology and research design goes here but details of animal use procedures must go below. Be sure to include a description of control groups.]*

Our staff statistician is consulted when we design our studies and has reviewed our 2009 study plan.

Spring captures, Heart rate monitors: We will outfit up to 16 subadult female animals with heart rate monitors, time depth recorders (TDR) and head-mounted

a management action, have alternative action strategies without the handling of animals been considered? Examples of sources might include a literature search, review of scientific journals, discussion with colleagues, etc. As a minimum, the database(s) used to search the literature, years searched, and keywords used MUST be listed and results noted or attached. 1-5 KEY references may be listed here but DO NOT list any more than 5 references. We prefer to see what methods you used to assess the importance and relevance of your proposed work, we do not need the complete results of this search.

Relatively little is known about harbor seal ecology in glacial fjords. Despite restriction of vessel traffic and cessation of all subsistence harvest and most commercial fishing in the Glacier Bay National Park, harbor seals numbers in Glacier Bay, an important pupping area in southeast Alaska, have declined by >65% since population monitoring was initiated in 1992. Nearby Tracy Arm is also an important pupping area but unregulated vessel traffic is increasing dramatically, and hunting and fishing in that area is also not restricted. Although annual trend estimates are not available for Tracy and the adjacent Endicott Arms, abundance estimates obtained by NMFS every 5 years indicate that seal numbers are declining in that area. Additionally, the US Forest Service (USFS) has been conducting counts of harbor seals in Tracy and Endicott during pupping season since 2001 and has noted a decline in numbers of 41% and 36% respectively, concurrent with a 59% increase in cruise ship traffic from 2003-06 in Tracy Arm. As unregulated cruise ship traffic increases in Tracy Arm, smaller vessels seek more private areas to explore, venturing into the adjacent Endicott Arm, leaving harbor seals that use icebergs with no refuge from vessel traffic during critical pupping and molt seasons. With increasing tourism traffic, there is growing concern over the impact of disturbance by vessel traffic, particularly in glacial ice sites that are both a major tourist attraction and important habitat for harbor seals. A study at Tracy Arm is especially critical to conduct now, because the glacier is receding at an unprecedented pace (>2km in 2004) and is predicted by some to ground (i.e., no longer calve icebergs into the water) in as little as 2-3 years.

Causes for the decline and reasons for lack of substantial recovery of harbor seal numbers that use glacial fjords have not been identified. Possible factors that may be affecting seal numbers include reduced prey availability (either by natural changes in the marine environment or as a result of commercial fishing), human caused mortality (either through harvest, incidental take in fisheries or disturbances), disease, pollutants, or predation.

Heart rate study: In this study we propose to measure energetics in free-ranging harbor seals by using heart rate as a proxy for metabolic rate (Fedak et al. 1988), with the focus on subadult females; the cohort that is expected to have the greatest influence on population abundance. Our objective is to assess average daily energetic costs, resting metabolic rates, energetic cost of forage dives and energetic cost incurred during known disturbances between the harbor seals that haul out on terrestrial sites compared to those that haul out on glacial ice.

Considerable research has been devoted to documenting behavioral response of seals to vessel disturbance, but empirical data on physiological responses are non-existent. Several studies of harbor seals (Lewis and Mathews 2000, Jansen et al. 2006) documented that approaching vessels (<500 meters) cause seals to abandon ice floes with increasing frequency depending on the size of vessel and angle of approach. To assess the significance of potential effects of disturbance, it is important to determine

LITERATURE CITED

Bengston, J.L., A.V. Phillips, E.A. Mathews, and M.A. Simpkins. 2007. Comparison of survey methods for estimating abundance of harbor seal (*Phoca vitulina*) in glacial fiords. *Fishery Bulletin* 105: 348-355.

Fedak, M.A., M.R. Pullen and J. Kanwisher. 1988. Circulatory responses of seals to periodic breathing: heart rate and breathing during exercise and diving in the laboratory and open sea. *Can. J. Zool.* 66: 53-60.

Herreman, J.K. G.M. Blundell, and M. Ben-David. 2009. Evidence of bottom-up control of diet driven by top-down processes in a declining harbor seal (*Phoca vitulina richardsi*) population. *Marine Ecology Progress Series* 374: 287-300.

Jansen J.K., J.L. Bengtson, P.L. Boveng, S.P. Dahle, and J. ver Hoef (2006) Disturbance of harbor seals by cruise ships in Disenchantment Bay, Alaska: An investigation at three spatial and temporal scales. National Marine Mammal Laboratory, Alaska Fisheries Science Center, NOAA Fisheries, Seattle, WA. AFSC Processed Report 2006-02, pp87.

Lewis T.M. & Mathews E.A. 2000. Effects of human visitors on the behavior of harbor seals (*Phoca vitulina richardsi*) at McBride Glacier Fjord, Glacier Bay National Park. Gustavus, AK, GBNP, Resource Management Division.

VETERINARY CARE OF ANIMALS: *[If you are using a different individual/organization than the ADF&G Staff Veterinarian to ensure adequate veterinary care of animals please provide the name(s) of veterinarian(s) providing medical care to your animals (emergencies, illness, preventive medicine). This section may not be applicable to field studies unless invasive procedures are planned. If it is a field study not requiring veterinary care then type in "Not Applicable" – you will be notified if the committee disagrees.]*

This field study does not include invasive procedures. However Gail Blundell, the ADF&G Harbor Seal Program PI was formerly licensed and employed as a veterinary technician, Shawna Karpovich and Jill Prewitt formerly worked as non-licensed veterinary technicians. Also, Jill Prewitt and Lori Polasek have experience assisting with medical procedures on the captive seals and sea lions at the ASLC.

ANIMAL HANDLING AND USE PROCEDURES:

CHECK YES OR NO TO EACH QUESTION (HINT: DOUBLE CLICK ON THE BOX) AND ADD THE NEEDED INFORMATION BELOW THE APPROPRIATE SECTION. EXPECTED INFORMATION IS EXPLAINED IN ITALICS. SOME ASSURANCES MAY REQUIRE INFORMATION NOT SPECIFICALLY LISTED HERE. PLEASE ENSURE THAT ALL INFORMATION NEEDED TO EVALUATE YOUR ASSURANCE IS PROVIDED. IF YOU ARE PLANNING ACTIVITIES NOT LISTED BELOW PLEASE ADD A SECTION TO ACCOUNT FOR ALL PROCEDURES EXPECTED TO BE DONE ON ANIMALS.

YES NO

temperature is maintained in the animal, procedures employed in case of anesthetic emergency, monitoring protocol to ensure animal's complete recovery from anesthesia; if by inhalation describe the equipment used and state the method of scavenging waste anesthetic gas/fumes; if injectable agent(s) are not commercially prepared and sterility guaranteed please describe method used to assure the agent's sterility when injected.]

Seals will be given injections of Diazepam (0.25 mg/kg body weight) in the caudal vertebral sinus before removing the needle used for the initial blood draw. After the Diazepam injection, procedures that are likely to be more painful are conducted (eg. blubber biopsy, D₂O injection, PIT tag injection and flipper tag attachment). After sample collection, seals are moved into holding pens with heat lamps (if necessary) and monitored for shivering, over heating, or unusual behaviors. Seals will generally be held onboard the vessel for approximately 2.5 hours after diazepam injection and released when they are able to control movement normally, are fully alert and aggressive (i.e., exhibiting behavior similar to their pre-sedation state). Seals will then be encouraged to move out of holding pens and allowed to move on the vessel deck to approach and re-enter the water on their own.

- ADMINISTRATION OF ANALGESICS NOT REVERSED AFTER ANESTHESIA *[Describe agent, dose (in mg/kg), route of administration, frequency, duration of use. If associated with a surgical procedure please indicate and refer to the Animal Surgery Information section.]*
- BLOOD SAMPLING *[Describe techniques including needle length and gauge, sites of collection, volumes per sample, frequency, total volume per animal, indicate the % blood loss based on the animal's body.]*

A total of up to 7.5% of the circulating blood volume will be drawn from seals by personnel experienced in blood draws. Blood will be drawn from the caudal vertebral sinus using a 1 ½" to 3 ½" spinal needle. The area will be scrubbed with a betadine solution and alcohol prior to venipuncture and direct pressure will be maintained on the sampling site for at least 30 seconds, or as long as needed, after needle is withdrawn to prevent hemorrhage.

Percent body fat of the seal as indicated by measurements of total body water will be determined using deuterium oxide (D₂O) equilibration. Following the initial draw of blood from which a "pre- D₂O" serum sample will be harvested, deuterium oxide (0.4-0.6 g D₂O /kg body weight) will be intramuscularly injected in the hip area using an 18g needle, depending on blubber thickness and length of needle required to assure injection into muscle (usually 1 ½"). With a 3-way stopcock system, 5 ml of sterile saline will be flushed into D₂O syringe following the injection of its contents into the seal, and that saline along with the remains of the D₂O in the syringe will also be injected into the seal. Large volumes of fluid will be split into multiple injection sites not to exceed 20 ml per site. Post D₂O blood samples will be drawn 2 to 2.5 hours after the D₂O was administered.

Vibrissae – Two vibrissae will be plucked from all captured harbor seals for stable isotope analysis of diet. One will be removed from each side of the face to minimize reduction in sensory perception.

Body Condition – We are investigating ultrasound as a replacement for D₂O administration (discussed above, under blood sampling) as a less invasive method to determine body composition. A portable ultrasound unit will be used to record blubber depth from each seal. Blubber will be measured from multiple sites, which may including the xiphosternal, neck, shoulder region, and hind quarters. Ultrasound of the abdomen, chest, and extremities may be used to assess organ size and growth, cardiac function, and pregnancy. This procedure involves the application of water or ultrasound gel to the fur, followed by a momentary light pressure on the skin. Procedures may require temporary restraint.

NECROPSY OR TISSUE COLLECTION FROM EUTHANIZED OR KILL TRAPPED ANIMALS *[If the sole purpose of euthanizing or kill trapping is to obtain biological samples from the animal please indicate what you are collecting for your study. Ensure that this matches objective statements and that the section on euthanasia and/or wildlife trapping is complete. Ensure that all other appropriate sections are completed.]*

TAGGING, MARKING, PLACEMENT OF INDWELLING CATHETERS OR IMPLANTS *[Describe type, size, duration of use, maintenance and monitoring protocol/schedule. For free-ranging wildlife please indicate if the tag or mark might affect the animals mobility, survival or increase the likelihood of predation.*

If implantation requires a surgical protocol please mark yes to this question and complete the separate form for Animal Surgery. NOTE: Insertion of pit tags does not constitute surgery so you need only fill out this section if you are using this method of marking]

CritterCams – We may deploy Crittercams in cooperation with the National Geographic Society. The cameras are programmed to collect data and digital film footage continuously or at pre-determined times and/or depths. Deployment is estimated to 1-4 days depending on the data collection protocol that we use. The cameras will be programmed to disconnect from the animal at a pre-determined time (1-4 days). They contain a VHF transmitter and are slightly buoyant so they will float at the surface, allowing us to recover the camera, download and recharge it and re-deploy it on another seal.

Each animal that receives a Crittercam will also have a head-mounted VHF transmitter attached. Headmounts weigh 0.09 kg and the critter cams weigh 1.2 kg; totaling 1.29 kg in attachments. Only animals weighing >43 kg will be fitted so that the total attachment weight is <3% of total body weight.

In Tracy and Endicott Arms animals with TDR/hr attachments will be approached by personnel in a vessel, timing of behaviors and distance will be recorded. Behavioral observations of harbor seals will be conducted from skiffs and from shore.

Approach limitations:

No approaches during pupping and nursing (May 24 – June 25)

Only 2 approaches per individual per month (30 day period)

7 day hiatus between approaches on each individual

Limit of 5 approaches per individual for the year

In Tracy and/or Endicott Arm, observations of behaviors and distance to boats will be recorded from shore at a distance so that seals will not be aware of the presence of observers.

SURGERY *[If YES, contact the staff veterinarian for the Animal Surgery form]*

WILL ANY PROCEDURES BESIDES THE USE OF AN EXPLOSIVE-DART (CAP-CHUR OR PALMER TYPE) CAUSE MORE THAN MOMENTARY OR SLIGHT PAIN/DISTRESS? *[Complete the following and describe measures taken to alleviate adverse effects. What methods are used to estimate presence or degree of pain/distress? If no measures are taken you must PROVIDE SCIENTIFIC JUSTIFICATION.]*

EXPECTED PAIN/DISTRESS LEVEL NIL LOW MODERATE HIGH

DISCOMFORT IS EXPECTED DURING PROCEDURE

POST PROCEDURE - DURATION: minutes to hours
post procedure for biopsies

Measures will be taken to decrease discomfort, pain, and distress such as administering Diazepam prior to blubber biopsies. Similar work has been conducted on other species (e.g., muscle biopsies from astronauts without use of sedation or local anesthesia) with no indication of prolonged pain and distress from the described protocols.

Discomfort after sampling procedures may include soreness in the blubber biopsy site as well as the blood collection site.

DART WOUND PROCEDURES *[Will you follow the DWC Dart Wound Treatment protocol and clean wounds from explosive darts to mitigate pain and infection?]*

ANTIBIOTIC ADMINISTRATION *[Will you follow the DWC Staff Veterinarian's orders to administer prophylactic antibiotic injections to all wildlife when explosive-darts (Capchur or Palmer type) are used mitigate post-capture mortalities from dart wound infections?]*

VI. DECLARATION: THE INFORMATION ON THIS ASSURANCE OF ANIMAL CARE FORM IS AN ACCURATE DESCRIPTION OF MY ANIMAL CARE AND USE PROTOCOL(S). ALL PEOPLE USING ANIMALS HAVE BEEN PROPERLY TRAINED TO USE APPROPRIATE METHODS AND HAVE READ AND AGREE TO COMPLY WITH THIS ASSURANCE. ALL INDIVIDUALS WORKING UNDER THIS ASSURANCE WILL COMPLY WITH THE PROCEDURES AND METHODS OUTLINED IN DWC WILDLIFE CAPTURE MANUAL, DWC DRUG POLICY, AS WELL AS PHS POLICY, THE ANIMAL WELFARE ACT, AND APPLICABLE DEPARTMENT POLICIES. ALL FIELD RESEARCH WILL BE CARRIED OUT IN ACCORDANCE WITH THE PRINCIPLES OUTLINED IN ACCEPTABLE FIELD METHODS OF MAMMALOGY, GUIDELINES FOR THE USE OF WILD BIRDS IN RESEARCH, GUIDELINES FOR THE USE OF FISHES IN FIELD RESEARCH, AND/OR GUIDELINES FOR THE USE OF LIVE AMPHIBIANS AND REPTILES IN FIELD RESEARCH. ALL WORK PROPOSED HEREIN IS THE MOST REFINED POSSIBLE TO AVOID OR MINIMIZE DISCOMFORT, DISTRESS, AND PAIN TO THE ANIMALS; DOES NOT UNNECESSARILY DUPLICATE PREVIOUS EXPERIMENT; AND NON-ANIMAL ALTERNATIVES HAVE BEEN CONSIDERED. ALL UNEXPECTED MORTALITIES OR CAPTURE RELATED INJURIES/COMPLICATIONS WILL BE REPORTED IMMEDIATELY TO THE STAFF VETERINARIAN AND ACUC.

PRINCIPAL INVESTIGATOR OR RESEARCH LEADER

DATE

VII. APPROVAL:

FINAL APPROVAL - CHAIRMAN, DWC ANIMAL CARE AND USE COMMITTEE

DATE

2009-08

Beckmen, Kimberlee B (DFG)

From: Brainerd, Scott M (DFG)
Sent: Friday, February 27, 2009 2:43 PM
To: Beckmen, Kimberlee B (DFG)
Subject: RE: Emailing: 09-08 Blundell HSeals.doc

Kimberlee,

I have read through 09-08 Investigations of harbor seals in Alaska.

I note that although study animals will be held captive for up to 2.5 hours after initial capture, with the sampling of blubber, stomach contents, blood, and will be equipped with VHF radio-transmitters and video cameras ("Critttercams"), that adequate care will be taken in their handling in accordance with accepted humane animal care handling procedures. In my assessment, the P.I. and her associates are using methods and procedures that are justifiable from the standpoint of research and management needs for this species.

The application is extremely well-written and very informative. I have no questions or comments and hereby approve this IACUC application.

-Scott Brainerd

-----Original Message-----

From: Beckmen, Kimberlee B (DFG)
Sent: Friday, February 27, 2009 1:37 PM
To: Brainerd, Scott M (DFG)
Subject: Emailing: 09-08 Blundell HSeals.doc

The message is ready to be sent with the following file or link attachments:

09-08 Blundell HSeals.doc

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.