OMB Control Number: 1024-0XXX
Expiration Date:

United States Department of the Interior
NATIONAL PARK SERVICE
Biological Resource Management Division
1201 Oakridge Drive, Suite 200
Fort Collins, CO 80525

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE

General Submission (GS) Form

Research, teaching, and exhibition projects involving vertebrate animals in NPS units must be approved by the NPS Institutional Animal Care and Use Committee (NPS IACUC) prior to their commencement. Principal Investigators (PI) are to submit the completed General Submission Form (hereafter GS Form) to the NPS IACUC Office.

Please use **Arial** font at **12 point** to complete the GS Form. Text should be inserted directly in tables and in spaces below questions. For boxes ☐ please use your computer mouse and (i) right click, (ii) click on Properties and (iii) change the Default value from not checked ☐ to checked ☒.

Please submit the Completed GS Form to the NPS IACUC Administrator by pressing "Submit" at the end of the form. If you do not receive an email confirming receipt of your form, please check to ensure we have received the document. **You must sign the declaration page,** (see *appendix A* for signature options). An IACUC filing number will be assigned to your completed GS Form. If you are unclear as to what is required to complete the GS Form, please contact (970) - 225 - 3556 or NPSIACUC@nps.gov.

YOUR GENERAL SUBMISSION FORM, AND THUS YOUR PROJECT, CANNOT BE APPROVED UNTIL COMPLETE.

The GS Form, and project outlined therein, is valid for **three years following approval;** contingent upon the PI submitting annual reviews for the first two years. Any changes to the project; e.g. in personnel and/or protocol, must be reported to the NPS IACUC immediately. The significance of such changes will be weighed by the NPS IACUC with three possible outcomes: 1.) Insignificant changes will be noted without amendment, 2.) Significant changes not serious enough to warrant *de novo* resubmission of the project will be noted by official amendment, or 3.) Significant changes deemed particularly serious will warrant a *de novo* resubmission of the project. On the third anniversary of this approved GS Form, you will be notified of its termination. At such time, you will need to submit a new GS Form for review.

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INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE

Check List and Instructions

Don't forget to check this page before submitting your Assurance Form.

___ PIs should read the NPS IACUC Modules ***prior to*** completing the GS form.

___ The GS form ***is a standalone document***. The NPS IACUC will not review study plans or scientific proposals to answer questions left blank on the GS form. Supporting materials may be attached to the GS form, but they cannot substitute for material that must be answered on the GS form.

___ Specific recommendations and guidelines (e.g., Guidelines of the American Society of Mammalogists, Guidelines to the Use of Wild Birds in Research, and American Veterinary Medical Association Guidelines on Euthanasia) **should be reviewed** and **referenced** in the GS form as applicable.

___ PIs **must cite scientific literature** to verify that all project methods employed are the most refined and best possible methods for their work.

___ The GS form **must be signed** prior to submission to the NPS IACUC. Please complete the form in Microsoft Word and complete the submission by pressing "Submit" at the end of the form. Signatures of PIs and supervisors may be created via protocols found in the Resources section of the website.

___ If you are unsure of what is required to complete this form, please visit the NPS IACUC web page (*link here for intra and internet sites*), or contact the IACUC Administrator (NPSIACUC@nps.gov; 970-255-3556).

United States National Park Service
Institutional Animal Care and Use Committee

Assurance of Animal Care Form

NPS IACUC Use Only	
IACUC Number:	**USDA Classification: C, D, or E**
Date Received:	**Initial Review Date:**
IACUC recommendations: Approved: ☐	**Not Approved:** ☐
Date Revisions Received:	**Initital Approval Date:**
Review Month:	**First Annual Review Date:**
Second Annual Review Date:	
IACUC Chair Signature:	**Date:** _

Project Title:

Name(s) of Funding Source(s):

Approximate Starting Date:

Proposed Completion Date:

Ongoing ☐

I. PERSONNEL

Principal Investigator:

E-mail: **Phone:**

Mailing Address:

Due to the fact the PI may not be on site during the entire project, please designate an alternate, and provide a contact name and phone number in case of emergency, after hours, or if the PI cannot be contacted for time-sensitive decisions or concerns regarding the project. This person must be able to assume responsibility for decisions and/or actions necessary to ensure animal health and welfare in the event of unanticipated problems. If this alternate cannot be contacted, the NPS IACUC (via the USDA APHIS AC) will assume responsibility and take actions deemed necessary to ensure appropriate animal care.

Alternate Contact Name:

Email: **Phone:**

Attending Veterinarian:

The official Attending Veterinarian (AV) of record for all projects is the NPS IACUC AV John A. Bryan, II, DVM, MS. However, due to the vast territory of the NPS, it is impractical to have the official NPS IACUC AV serve as the on-location AV for all projects. In cases such as these, the AWAR (§ 2.33 b 3) provides the NPS IACUC AV with the authority to delegate/share this responsibility with another (other) licensed veterinarian(s) involved in the project. Any delegated veterinarian must hold a current, valid license to practice veterinary medicine in at least one state of the United States, and be in exemplary standing under said licensure. Delegated veterinarians must communicate as needed/requested with/by the NPS IACUC AV regarding veterinary care during the execution of the project. The NPS IACUC AV has the authority to, and may, conduct on-site, field evaluations/inspections of the project.

YES NO

☐ ☐ **Does this project intend the use of one or more delegated veterinarians in addition to the official AV?**

If yes, then please complete the following, and add additional names as needed:

Name of Delegated Veterinarian (as appears on licensure):

State of Current Licensure:

Email: **Phone:**

Personnel Qualifications:

List <u>all</u> personnel involved with the animal component of this project and their qualifications. At minimum, include the principal investigator and co-investigator. Please list <u>all</u> personnel (biological technicians, graduate and undergraduate students, and volunteers) involved with field work. Please list their educational background and related qualifications if applicable (e.g., publications, field experience, training, collaborations, research grants, and professional experience) for each task (e.g., capture, blood drawing, and/or euthanasia) proposed. Repeat name blocks as needed if more than six persons need be identified.

Name: Degree(s):

Role(s) on Project:

Brief Outline of <u>Relevant</u> Experience:

Name: Degree(s):

Role(s) on Project:

Brief Outline of <u>Relevant</u> Experience:

Name: Degree(s):

Role(s) on Project:

Brief Outline of <u>Relevant</u> Experience:

Name: Degree(s):

Role(s) on Project:

Brief Outline of Relevant Experience:

Name: Degree(s):

Role(s) on Project:

Brief Outline of Relevant Experience:

Name: Degree(s):

Role(s) on Project:

Brief Outline of Relevant Experience:

II. USE OF VERTEBRATE ANIMALS AND PROJECT DETAILS

ANIMAL SPECIES	Number to be Used	Number to be Used	Number to be Used	General Location

(Scientific and Common Name)	(Year 1)	(Year 2)	(Year 3)	
***OPPORTUNISTIC ANIMALS (Scientific and Common Name)**	**Potential Number Affected (Year 1)**	**Potential Number Affected (Year 2)**	**Potential Number Affected (Year 3)**	**General Location**
*** NON-TARGET ANIMALS (Scientific and Common Name)**	**Potential Number Affected (Year 1)**	**Potential Number Affected (Year 2)**	**Potential Number Affected (Year 3)**	**General Location**

***OPPORTUNISTIC ANIMALS** *include any animal whose capture is accidental or incidental, but whose capture can lead to valuable information. Examples include non-target species of birds whom if captured will be banded anyway and released, etc.*

* **NON-TARGET ANIMALS** *include any non-study animals directly or indirectly affected by the research. Examples include the potential to live-capture or kill non-target individuals (e.g., loss of offspring due to taking of one or both parents) or disturb/harass other species during the research activity (e.g., during a banding drive that employs airplanes and/or boats).*

Please describe the duration and level of disturbance to non-target and opportunistic animals:

Classification:

☐ Field Research ☐ Combination of Field and Laboratory Research

☐ Laboratory Research ☐ Observational Research Only

Specific Study Areas: *[Please describe the location of your study area with anticipated boundaries. Include a map depicting your specific study area, sites, and boundaries. Also include coordinates and/or shape files].*

Animal Housing: *[If animals are to be held captive for any period of time, you must describe the temporary holding facilities that you intend to use, the time the animals will spend there, and your animal care protocol. A photograph, drawing, or illustration of the holding facility may help clarify your description.]*

Permits: *[Identify all relevant permits (NPS, USFWS, MMPA, CITES, USDA, etc.) necessary to conduct this project. Provide permit type(s), permit number(s), and expiration date(s). Please indicate if a permit application is pending a decision.]*

Permit Type	Permit Number	Expiration Date

Purpose of Study:

A) How would you explain to a non-scientist, the specific objective(s) of your study? Please explain how this benefits human health, animal health, and/or how this project will provide a return of knowledge and understanding applicable to the species or biological process under study.

B) Explain why the study does not duplicate previous research. If the study repeats previous research, please justify and explain the hypotheses or questions to be addressed (e.g., to determine potential shifts in migration, breeding distribution, body condition… due to changes in habitat, loss of riparian vegetation, sea level rise…).

C) Justify the following:

Rationale for the use of animals: *[Why must animals be used rather than computer models, habitat studies, etc.?]*

Appropriateness of species to be used: *[Briefly describe the biological characteristics of the animal species selected that justifies its use in the proposed study. Cost should not be used as a justification, except as a means to choose among species that are equally well-suited for the proposed project. Please explain why this work will benefit the particular species or population under study or serve as a model for other species].*

Number of animals to be used: *[How did you determine the number of animals required? What is the estimated local population size from which the samples will be taken? When possible, include a statistical power justification of the group size(s) or a yield of tissue needed per animal. For complex studies, attaching a flow chart or table showing group sizes, time frame, study locations and other information may be helpful in understanding how the total number of animals was determined.]*

Alternatives to Live Animal Use and Procedures that Cause Pain or Stress:

The Animal Welfare Act, its Regulations, and the Interagency Research Animal Committee require the principal investigator consider alternatives to procedures that may cause more than momentary or slight pain or stress to the animal. Provide a written, narrative description of the methods and sources used to determine that procedures are the most refined possible, and that you have considered alternatives to procedures that may cause more than momentary or slight pain or stress to the animal. This narrative description must provide details on the methods used and sources consulted to determine that alternative procedures are neither available nor acceptable. Examples of sources include a literature search, review of scientific journals, or discussions with colleagues.

Were alternatives to painful procedures considered? And if available, why weren't they acceptable?

Literature Search

As a minimum, principal investigators are to: (i) use the USDA National Agricultural Library (USDA NAL at http://www.nalusda.gov/) and other professional sources (ii) indicate the keywords used, and (iii) summarize or attach results. Principal investigators should indicate the databases searched or other sources consulted; the date of the search and the years covered by the search; and the key words and/or search strategy.

Check the sources of information or databases used to determine your responses to the above questions.

☐ USDA NAL ☐ Academic File ☐ Other

Date of Search: Years Covered:

Key Words:

Search Results:

Summary of Results:

Animal Use Procedures: *Please check either Yes or No, and add any needed information below the appropriate section. Expected information is explained in italics. Some protocols may require information not specifically listed here. Please ensure that all information needed to evaluate your protocol is provided. If an IACUC-approved Standard Operating Procedure(s) exists for the planned study, list the Standard Operating Procedure Protocol number, title, and review date. If you are planning activities not listed below, please describe all procedures under the section entitled* ***"OTHER."*** *For boxes ☐ please use your computer mouse and (i) right click, (ii) click on Properties and (iii) change the Default value from not checked ☐ to checked ☒ .*

YES NO

☐ ☐ **WILDLIFE CAPTURE (LIVE CAPTURE OR KILL TRAPPING)** *[Describe equipment used, duration of trapping/restraint, monitoring protocol/schedule for traps, potential for trapping non-target species, disposition of trapped animals.* ***If anesthesia or immobilization is planned please refer to those sections of this form.****]*

YES NO

☐ ☐ **ANIMAL TRANSPORTATION** *[Describe how animals are transported from a capture location to a field camp or processing site or facility and returned. If an animal (live or dead) is to be transported from the field, please describe measures taken to avoid potential disease transmission.]*

YES NO

☐ ☐ **PHYSICAL RESTRAINT** *[Describe method, duration, equipment used, dimensions of equipment if applicable, and observation schedule during confinement. Provide detailed justification and protocol if animals are to be physically restrained for longer than 1 hour at a time. Explain method(s) to record the time required to complete specific tasks and procedures (e.g., banding, measure and record tarsus and culmen lengths and measure body mass, draw blood…) as well as the end effect on animals in order to better understand the impact and identify possible areas for improvement/refinement.]*

YES NO

☐ ☐ **CLEANING PROCEDURES** *[Please describe the cleaning procedures and frequency of cleaning of any equipment that will be used to capture, transport, contain, etc. animals]*

YES NO

☐ ☐ **PERSONAL PROTECTIVE EQUIPMENT (PPE)** *[Please describe any and all PPE that will be used by personnel including, gloves, respirators, goggles or faceshields, etc.]*

YES NO

☐ ☐ **MONITORING OF PHYSIOLOGICAL VITAL SIGNS** *[Describe physiological parameters (e.g., temperature, pulse rate, respiration rate, capillary refill time) to be recorded, frequency of measurements, and expected normal ranges for all physiological parameters monitored. Provide protocol for addressing physiological parameters outside of normal ranges (e.g., how do you plan to treat hypothermia?]*

YES NO

☐ ☐ **MARKING OR TAGGING** *[Describe leg band type (e.g., USGS, colored, alphanumeric code), neck collar (manufacturer & model), transmitter (e.g., VHF, satellite, GPS), passive integrated transponder (PIT) tags, or other devices or methods (e.g., dying feathers or fur) to be used. Document why the device or method is not expected to interfere with the behavior, health, or social status of an individual. Provide the mass of attachment device, range of body mass of the study species, device mass as a proportion of body mass, and the recommended device mass as a percent of body mass.]*

YES NO

☐ ☐ **BLOOD SAMPLING** *[Describe needle gauge and length, collection site preparation, location of collection sites, sample volumes, frequency of sampling(s), total samples per animal, and how long an animal is retained for sampling; indicate the percent blood loss per sample based on the animal's body mass and, describe how animal(s) will be monitored for anemia.]*

YES NO

☐ ☐ **URINE/FECES SAMPLING** *[For all methods indicate the length of time the animal is maintained for sampling(s).]*

YES NO

☐ ☐ **OTHER BODY FLUIDS AND TISSUE SAMPLING** *[Indicate the type of substance, e.g. hair, feathers, scales, muscle tissue, abdominal fluid, swabs, bone marrow; method of collection; volumes per sample; frequency of sampling(s); length of time animal is maintained for sampling; total samples per animal.]*

YES NO

☐ ☐ **BEHAVIORAL OR OBSERVATIONAL STUDY (WITHOUT SIGNIFICANT RESTRAINT OR NOXIOUS STIMULI)** *[Describe procedure.]*

YES NO

☐ ☐ **BEHAVIORAL OR OBSERVATIONAL TESTING (WITH SIGNIFICANT RESTRAINT OR NOXIOUS STIMULI)** *[Describe restraint procedure, equipment, duration, frequency, type of noxious stimulus, methods used to monitor animals and minimize discomfort and stress. Provide scientific justification for the degree of restraint and/or noxious stimuli.]*

YES NO

☐ ☐ **SPECIAL DIETS** *[Will food items other than routine husbandry diets be used? If yes, describe diet, duration of use, anticipated nutritional deficit/adverse effect, weight monitoring of animal(s), amount of weight loss that will be allowed, monitoring protocol/schedule for effects.]*

YES NO

☐ ☐ **FOOD AND/OR WATER DEPRIVATION** *[Describe duration, frequency of deprivation, reason(s) for deprivation, monitoring protocol of animal(s), amount of weight loss that will be allowed, anticipated deficit/adverse effect, monitoring protocol/schedule for effects.]*

YES NO

☐ ☐ **INDWELLING CATHETERS OR IMPLANTS** *[Describe type, size, duration of use, maintenance and monitoring protocol/schedule. If implantation requires a surgical protocol please complete the section on Animal Surgery Information.]*

YES NO

☐ ☐ **ADMINISTRATION OF PARALYTICS** *[Describe agent, dose (mg/kg), route of administration, frequency of administration, duration of paralysis. If used in conjunction with a procedure(s) involving potential pain, how will the presence of pain, depth of anesthesia, degree of analgesia be assessed? If associated with a surgical procedure please indicate and refer to the Animal Surgery Information section.]*

YES NO

☐ ☐ **ADMINISTRATION OF ANESTHETICS** *[If associated with a surgical procedure please indicate and refer to the Animal Surgery Information section. Describe agent, dose (mg/kg), route of administration (manufacturer & model of equipment), duration of anesthesia, method of monitoring anesthesia; maintenance/monitoring procedures to ensure normal body temperature is maintained in the animal, procedures employed in*

case of anesthetic emergency over-dose, 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.]

YES NO

☐ ☐ **ADMINISTRATION OF ANALGESICS** *[Describe agent, dose (in mg/kg), route of administration, frequency, and duration of use. If associated with a surgical procedure please indicate and refer to the Animal Surgery Information section.]*

YES NO

☐ ☐ **USE OF CONTROLLED AND/OR PRESCRIPTION SUBSTANCES** *Irrespective of source, describe arrangements for use, ordering, record keeping, storage, and precautions taken to avoid unauthorized access.*

YES NO

☐ ☐ **ADMINISTRATION OF DRUGS, TOXINS, REAGENTS, CELLS, ETC. (OTHER THAN ANALGESICS, ANESTHETICS, OR PARALYTICS)** *[Describe agent, dose (mg/kg), diluent, route of administration, list equipment used for administration (e.g., gavage needle, stomach tube, cerebral cannula, venipuncture, etc.), frequency of administration, length of time animal maintained, anticipated deficit/adverse effects, and monitoring protocol/schedule for effects. State if no adverse effects are anticipated. Describe monitoring procedures to ensure cell lines have been screened for rodent pathogens. If injectable agent(s) or silastic implant(s) are not commercially prepared and sterility guaranteed please describe method used to assure the agent's sterility when injected.*

YES NO

☐ ☐ **SURVIVAL SURGERY (MINOR)** *[If YES, complete Animal Surgery Information. A minor operative procedure example is implanting a subcutaneous transmitter or passive integrated transponder (PIT) tag.]*

YES NO

☐ ☐ **SINGLE MAJOR SURGERY INVOLVING AN INDIVIDUAL ANIMAL** *[If YES, complete Animal Surgery Information. A major operative procedure is one that enters a body cavity for example, implanting a telemetry device into the body cavity).*

YES NO

☐ ☐ **MULTIPLE MAJOR SURVIVAL SURGERIES INVOLVING AN INDIVIDUAL ANIMAL** *[A major operative procedure is one that enters a body cavity. You must provide additional justification to perform multiple major operative procedures on one animal. Removal of telemetry devices is an acceptable reason. If YES, complete Animal Surgery Information.]*

YES NO

☐ ☐ **NON-SURVIVAL SURGERY** *[If YES, complete Animal Surgery Information]*

YES NO

☐ ☐ **DEATH AS AN ENDPOINT** *[If the protocol involves observing or studying the animal until death occurs or collecting the animal by shooting, lethal trapping or other means, you must provide scientific justification as to why an earlier endpoint is not acceptable.]*

YES NO

☐ ☐ **OTHER** *[Describe any other procedure to be administered not previously addressed.]*

YES NO

☐ ☐ **WILL ANY PROCEDURES CAUSE PAIN OR STRESS?** *[**If yes**, complete the following table and describe measures taken to alleviate adverse effects. What methods are used to estimate presence or degree of pain or stress? If no measures are taken to alleviate adverse effects, you must provide scientific justification.* ***Refer to Attachment A for category descriptions***]

	NIL	LOW	MODERATE	HIGH
PAIN IS EXPECTED PRIOR TO PROCEDURE	☐	☐	☐	☐
STRESS IS EXPECTED PRIOR TO PROCEDURE	☐	☐	☐	☐
PAIN IS EXPECTED DURING PROCEDURE	☐	☐	☐	☐
STRESS IS EXPECTED DURING PROCEDURE	☐	☐	☐	☐
PAIN IS EXPECTED POST PROCEDURE	☐	☐	☐	☐
STRESS IS EXPECTED POST PROCEDURE	☐	☐	☐	☐

METHODS USED TO ESTIMATE PAIN/STRESS:

MEASURES TO ALLEVIATE ADVERSE EFFECTS:

III. TYPE, FREQUENCY, AND TREATMENT OF INJURIES

Describe the most likely forms of injuries to research animals, how frequent an injury (ies) is (are) expected to occur, and planned procedures to treat injuries. **Even if you do not intend or expect to injure an animal, you must describe potential injuries and expected methods of treatment(s).**

IV. EUTHANASIA AND DISPOSITION

All methods of euthanasia must follow the American Veterinary Medical Association Panel on Euthanasia Guidelines on Euthanasia (June 2007, 36pp). Any deviations must be scientifically justified. ***Even if you do not intend to euthanize animals at the completion of your project, a method of euthanasia must be listed in cases of emergency.***

Describe the method of euthanasia planned. If by chemical agent you must identify the compound and specify the dose (mg/kg) and route of administration. Physical methods (gunshot, captive bolt, cervical dislocation, or decapitation) may be used only after other methods have been excluded and when scientifically justified; e.g. as environmentally advantageous field methods.

Describe the method used to ensure the animal will not revive and method of disposal of remains. Please verify that a university, museum, or other research/educational institution has agreed to accept the remains.

V. ANIMAL SURGERY INFORMATION

☐ Check here if no surgery is planned.

ANIMAL SPECIES (Scientific and Common Name)	Number to be Used	S = Survival N = Non-survival	Surgery Location (Anatomic)

Pre-operative Procedures and Care:

a) Have unhealthy animals been exempted from surgery? Yes ☐ No ☐

If no, explain the rationale for performing surgery on unhealthy animals.

b) Identify the individual responsible for evaluating pre-operative health status of animals.

c) Provide a brief description of all pre-operative procedures and care. *[Including withholding of food and water, pre-operative antibiotic/therapeutic drug/fluid administration (agent, dose in mg/kg), route of administration, frequency, duration of treatment, preparation of surgical site (e.g., clipping, use of antiseptic scrub/solution, etc.)]*

d) Provide a description of the facility or the area where the surgery will be performed, how it is prepared before each surgery, how surgical instruments are prepared, and how individuals responsible for surgery prepare themselves.

Anesthetic Procedures:

a) Provide a brief description of anesthetic procedures. [*Describe agent, dose (i.e., mg/kg or % if by inhalation), route of administration, expected duration of anesthesia, monitoring procedure to evaluate depth of anesthesia; maintenance and monitoring procedures to ensure normal body temperature is maintained in the animal, procedures employed in case of anesthetic emergency over-dose, 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.*]

b) Identify the individual(s) performing and monitoring anesthesia.

Surgical Procedures:

a) Provide a brief description of all surgical procedures to be performed. *[Include site of incision, procedures performed, anticipated duration of procedure, method of wound closure including type and size of suture/staples.]*

b) Describe procedure(s) employed to ensure aseptic technique is maintained throughout surgical procedure. *[Describe sterilization method used for instruments, equipment and supplies; indicate the use of sterile gloves, gowns, drapes, mask, cap, sterile implants, and sterile suture/closure material. If same surgical instruments are used for multiple animals (i.e. birds), describe how the instruments are managed to assure continued sterility.]*

c) Identify all individuals performing surgery.

Post-operative Procedures and Care:

a) Provide a brief description of all post-operative procedures and care. *[Include criteria to assess animal pain and the need for analgesics, type of post-operative analgesics (describe agent, dose, route of administration, frequency, duration of treatment); techniques used to ensure maintenance of normal body temperature in the animal; incision care, monitoring and time of suture removal; catheter or long term care of any chronically instrumented/implanted animals, monitoring and time of removal; bandage/dressing monitoring and changing schedule.]*

b) If post-operative analgesics will not be used, provide scientific justification.

c) Describe arrangements for post-operative monitoring of animals, the individual(s) responsible for performance of monitoring, including after-hour, weekend and holiday care.

d) Describe the use of any antibiotics or other therapeutic drugs. [*Describe agent, dose (i.e. mg/kg, IU/kg), route of administration, frequency, duration of treatment.*]

e) If this surgical procedure induces a disease or other functional alteration, describe any anticipated adverse effects and deficiencies, monitoring protocol/schedule for animals, animals' degree of tolerance to disease/functional deficit.

Multiple Surgeries:

Will animals be subjected to more than one (1) survival surgery? Yes ☐ No ☐

If yes, provide scientific justification and explain how surgeries are related.

V. AUDIOVISUAL RECORD

AUDIOVISUAL RECORD (AVR): *Upload all audiovisual records (e.g., sound files, photographs, maps, and/or video footage) of your field work including but not limited to: animal capture,*

anesthesia, analgesia, restraint, handling, sample collection, recovery, release, or euthanasia. Include descriptive captions for all photographs; i.e. what action is taking place, how, and why.

An AVR is submitted in accompaniment to this GS form:

☐ YES

☐ NO

If no AVR is submitted; explain why:

VI. LITERATURE CITED

PLEASE PROVIDE COMPLETE CITATIONS (AUTHOR, DATE, PUBLICATION TITLE, AND PUBLISHER) OF ALL LITERATURE CITED TO SUPPORT THE ASSURANCE FORM.

VII. 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 PROTOCOL. ALL INDIVIDUALS WORKING UNDER THIS ASSURANCE WILL COMPLY WITH THE PROCEDURES AND METHODS OUTLINED IN **THE ANIMAL WELFARE ACT**, ITS **REGULATIONS**, AND THE **INTERAGENCY RESEARCH ANIMAL COMMITTEE**. ALL FIELD RESEARCH WILL BE CARRIED OUT IN ACCORDANCE WITH THE PRINCIPLES OUTLINED IN ACCEPTABLE FIELD METHODS OF MAMMALOGY, AND GUIDELINES FOR THE USE OF WILD BIRDS IN RESEARCH. ALL WORK PROPOSED HEREIN IS DESIGNED IN THE ATTEMPT TO AVOID DISCOMFORT, STRESS, AND PAIN TO THE ANIMALS; DOES NOT UNNECESSARILY DUPLICATE PREVIOUS EXPERIMENTATION; AND NON-ANIMAL ALTERNATIVES HAVE BEEN CONSIDERED.

PRINCIPAL INVESTIGATOR

_____

DATE

_____

UNITED STATES NATIONAL PARK SERVICE
INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE

Assurance of Animal Care Form

Attachment A: Categories of Invasiveness in Animal Experiments

Each year the U.S. Department of Agriculture, Animal and Plant Health Inspection Service requires an annual report from the NPS IACUC in which animal projects are categorized as to degree of invasiveness. **Please assist the NPS IACUC in this determination by assigning the animal procedures in your project to one of the categories below.** The *U.S. Government Principles Regarding the Care and Use of Animals* state, "Unless the contrary is established, investigators should consider that procedures that cause pain or distress in human beings may cause pain or distress in other animals."

1. Experiments which cause little or no discomfort or stress.[**] **(Nil)**
   Examples: individual or small numbers of animals being confined and maintained in natural habitat that affords an appropriate quantity and quality of food, cover, and water; injection of materials in amounts that will not cause adverse reactions by the following routes: intravenous, subcutaneous, intramuscular, intraperitoneal, or oral, but not intrathoracic or intracardiac (Category 2); acute non-survival studies in which the animals are completely anesthetized and do not regain consciousness; approved methods of euthanasia following rapid unconsciousness such as anesthetic overdose or decapitation; short periods of food and/or water-deprivation equivalent to periods of abstinence in nature.

2. Experiments which cause minor stress or pain of short duration**. (Low)**
   Examples: cannulation or catheterization of blood vessels or body cavities under anesthesia; minor surgical procedures under anesthesia, such as biopsies or laparoscopy; short periods of restraint beyond that required for simple observation or examination, but consistent with minimal stress; short periods of food and/or water deprivation which exceed period of abstinence in nature; behavioral experiments on conscious animals that involve short-term, stressful restrain; short term exposure to noxious but non-lethal levels of drugs or chemicals. Such procedures should not cause significant changes in the animal's appearance, in physiological parameters such as respiratory or cardiac rate, or fecal or urinary output, or in social responses.

3. Experiments which cause moderate to severe stress or discomfort. **(Moderate)**
   Examples: major surgical procedures conducted under general anesthesia, with subsequent recovery; prolonged (several hours or more) periods of physical restraint; induction of behavioral stresses such as maternal deprivation, aggression, predator-prey interactions; procedures which cause severe, persistent or irreversible disruption of sensorimotor organization; the use of adjuvants which cause clinically evident swelling or abscesses. Other examples include induction of anatomical and physiological abnormalities that will result in pain or distress; the exposure of an animal to noxious stimuli from which escape is impossible; exposure to drugs or chemicals at levels that impair physiological systems. Note: procedures used in Category 3 studies should <u>not</u> cause prolonged or severe clinical distress as may be exhibited by a wide range of clinical signs, such as marked abnormalities in behavioral patterns or attitudes, the absence of grooming, dehydration, abnormal vocalization, prolonged anorexia, circulatory collapse, extreme lethargy or

[**] The text of these categories has been freely adapted from a document originally published by the Canadian Council on Animal Care (CCAC).

disinclination to move, and clinical signs of severe or advanced local or systemic infection, etc..

4 Procedures which cause severe pain near, at, or above the pain tolerance threshold of unanesthetized conscious animals. **(High)**
Examples: exposure to noxious stimuli or agents whose effects are unknown; exposure to drugs or chemicals at levels that (may) markedly impair physiological systems and which cause death, severe pain, or extreme distress: completely new biomedical experiments which have a high degree of invasiveness; behavioral studies about which the effects of the degree of distress are not known; use of muscle relaxants or paralytic drugs without anesthetics; burn or trauma infliction on unanesthetized animals, a euthanasia method not approved by the American Veterinary Medical Association; any procedures (e.g., the injection of noxious agents or the induction of severe stress or shock) that will result in pain which approaches the pain tolerance threshold and cannot be relieved by analgesia (e.g., when toxicity testing and experimentally-induced infectious disease studies have death as the endpoint).

I have read and understand the above Categories of Invasiveness in Animal Experiments: ☐

The U.S.D.A. Annual Report requires the NPS IACUC to report the number of animals used by or under control in each of the following categories:

(A) Number of animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not yet used for such purposes.

(B) Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use of pain-relieving drugs.

(C) Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.

(D) Number of animals upon which teaching experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs would have adversely affected the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests (An explanation of the procedures producing pain or distress in these animals and the reasons such drugs were not used must be attached to this report.

One of these categories will be assigned and approved by the NPS IACUC and recorded on the approval letter sent to the principal investigator of each project.

I have read and understand the above USDA APHIS AC Categories: ☐

SUBMIT

Paperwork Reduction Act Statement: The National Park Service is authorized by the Animal Welfare Act Regulations (7 U.S.C. 2131-2159;§2.31, d, 1) to collect this information for the purposes of reviewing activities related to the care and use of animals and to approve all research, teaching, and exhibition activities involving vertebrate animals on NPS managed lands and territories. Your response to this request is mandatory in order to conduct research involving vertebrate animals on NPS managed lands and territories. The time to complete this form is estimated to be 3 hours per response. A Federal agency may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. You may send comments concerning the burden estimate or any aspect of this information collection to: John A. Bryan, II, DVM, NPS IACUC Chair and Attending Veterinarian, National Park Service, 1201 Oakridge Drive, Suite 200, Fort Collins, CO 80525.