



Proposal Form - Field Investigations

An IACUC *Proposal* must be completed and approved prior to commencing any form of field investigation utilizing vertebrate animals. This document is meant to serve as a resource for Principal Investigator's and IACUC members.

Professional Society Guidelines and other Sources:

To prepare and evaluate *Proposals*, researchers and IACUC members should consult with experts and refer to professional society guidelines which are useful tools to reference current approaches to field practices. However, such guidelines may deviate from current regulatory policies and require written justification within the IACUC by the principle investigator.

Current applicable guidelines include the below listed references.

- a) American Society of Mammalogists: *Guidelines of the American Society of Mammalogists for the use of wild mammals in research and education*
- b) Ornithological Council: *Guidelines to the Use of Wild Birds in Research.*
- c) American Fisheries Society, American Institute of Fishery Research Biologists, and American Society of Ichthyologists and Herpetologist: *Guidelines for the Use of Fishes in Research.*
- d) American Society of Ichthyologists and Herpetologists: *Guidelines for the Use of Live Amphibians and Reptiles in Field and Laboratory Research.*
- e) Field euthanasia for Wild life 2018, NIH OLAW <https://olaw.nih.gov/education/educational-resources/webinar-2018-03-28.htm>

Experimental Groups and Pain/Distress Classification:

- Principal Investigators are responsible for complying with all local, state, federal and international laws and regulations. Permits should be obtained prior to the start of research and details should be provided within the *Proposal*. Copies of permits must be made available upon request of the IACUC.
- A description of experimental groups should be provided in the *Proposal* summarizing exactly what will happen to each animal and when. The appropriate pain and distress classification should be assigned to each group. The American Society of Mammalogists/Ornithological Council position and addendum #3 cite the following activities as potential pain class I studies:
 - Properly functioning, appropriately placed live traps or nets designed to simply hold an animal without injury until removal provided the traps/nets are checked frequently and the individuals are adequately training in setting the devices and removing the animals.
 - Tissue sampling and marking techniques utilizing procedures that are not more invasive than peripheral blood sampling and involve no or only momentary or slight pain.

Justification of Animal Numbers:

- Estimating and evaluating the number of animals that may be involved in a field investigation may pose a challenge. There may be cases in which the number of animals to be used is unknown as it depends on collection opportunities, the numbers of animals may be justifiably large (perhaps an entire population in some studies), or very limited such as tracking of elusive species. In such cases citations for the numbers of animals used previously in similar activities, seeking input from a qualified statistician, and/or estimates derived from population densities may be useful

Field Study: Species

- Targeted and non-targeted (incidental capture) species should be described, including estimated number of animals.

Field Study: Location

- A detailed description of the study site(s) where the field studies will be conducted should be provided. If applicable, photographs or videos that document specific aspects of the site(s) should be included.

Field Study: Capture and Handling

- The methods of animal capture and handling should be fully described, including the potential short- and long-term effects on animals, and details addressing:
 - How will the animals be captured? Include the type and size of trap.
 - For studies involving recapture, the expected time period between captures should be included.
 - How will researchers minimize the potential harm caused to the animal by the traps?
 - What is the frequency of checking traps?
 - Are there any precautions in place for preventing capture of non-target species?
 - What happens to non-target species if captured?
 - Comment on any expected injury and mortality due to trapping.
 - While in the trap, is the animal appropriately sheltered and protected from predators and the elements?
 - Describe how the target and non-target species will be handled include methods to minimize distress.
 - Does handling have the potential to cause rejection by conspecifics if released?
 - Does handling have the potential to cause decreased survivability if released?

Field Study: Animal Holding/Housing

- The duration of time animals will be held in captivity prior to euthanasia or release should be described, including:
 - The location and duration of housing.
 - Description of caging size (LxWxH) and materials constructed from.
 - How does the caging system support the biological needs of the animal? Note that the design of enclosures and methods of care must accommodate salient features of the animal's ecology, morphology, physiology, and behavior.
 - Will other species be housed or held in the same facility?
 - What are the nutritional requirements and how will they be met? Nutritionally balanced diets must be provided, or natural foods should be duplicated as closely as possible.
 - What are the water requirements and how will they be met?
 - What are the ventilation and temperature requirements and how will they be met?
 - Natural light, ventilation, temperature, and humidity conditions should be provided, unless these are factors under investigation.
 - Include information on providing those aspects of the natural habitat deemed important to the survival and well-being of the animals
 - Will animals be single housed and/or isolated from conspecifics?
 - What enrichment will be provided for the animal(s) while being housed in the lab or in captivity?
- Animals held or housed must be monitored *at least daily* for applicable factors such as appearance, activity level, general behavior, appetite, rate of growth, change in body weight/body condition, breeding success, etc. Documentation of observations and housing parameters must be maintained for a period of three years and available for IACUC inspection at all times.

- Newly captured animals that are brought to the laboratory should be quarantined from resident animals. Investigators should refer to IACUC policy “*Animal Security in Investigators Laboratories*” for additional security measures.
- Housing may require collection permits from various agencies.

Field Study: Transportation

- If animals will be transported from the capture site, details of transportation should be fully described and include:
 - Describe the method of transportation (e.g., private vehicles, commercial services, etc.).
 - Describe the transport enclosure, including dimensions (LxWxH) and construction material.
 - Estimated time in transit.
 - Describe animal care in transit (e.g., food/water provided, bedding, temperature control, etc.).
 - Describe measures in place to prevent escape.
 - Will the animal be exposed to other animals during transit?

Field Study: Population Impact

- Describe any anticipated impact on local populations of target and non-target species.
 - If the target species is endangered, you should include that information here.

Field Study: Permits

- Principal Investigators are responsible for complying with all local, state, federal and international laws and regulations. Permits should be obtained prior to the start of research and details should be provided within the *Proposal*. Copies of permits must be made available upon request of the IACUC.
 - **Federal and State permits:** If your research requires federal or state permits, it is unlawful to begin work until all permits have been obtained. You may not start the work for which permits are required until the permits are issued, even if your *Proposal* has been approved.
 - **Permits required by other agencies:** If applicable, must be stated in the *Proposal* and obtained prior to conducting the study.
 - Other permit considerations:
 - Each state has its own requirements for collecting, housing, sampling, displaying, and generally using wildlife.
 - When animals or their tissues are moved between states, each state’s fish and game agency (or department of natural resources), including wildlife preserves and refuges, should be consulted for compliance with specific policies and regulations.
 - When animals or animal tissues are imported from another country, several agencies should be contacted to ensure that necessary permits and precautions are taken. Common regulatory agencies that oversee the collection and handling of wildlife include the United States Fish and Wildlife Service, the Department of the Interior (specifically in terms of the Convention on International Trade in Endangered Species of Wild Fauna), the United States Department of Agriculture Animal and Plant Health Inspection Service (for protection against importing animal pathogens), and the Centers for Disease Control and Prevention (CDC) (for protection against importing human pathogens).
 - Other relevant federal legislation includes: the Lacey Act, which pertains to movement of wild mammals or parts thereof to non-designated ports of entry and anything related to injurious wildlife that could cause environmental or agricultural damage; the Marine Mammal Protection Act, which regulates the harassment and handling of all marine mammal species; the Migratory Bird Act, which regulates the

handling and banding of migratory bird species; and the Endangered Species Act of 1972.

Field Study: Occupational Health and Safety Considerations

- Principal Investigators should be knowledgeable about relevant zoonotic diseases and associated safety issues (e.g., traumatic injuries, use of venomous species). This section should detail:
 - Potential risks including: location associated risks (e.g., weather, terrain, remoteness, insect, poisonous plants, etc.); risk of injury (e.g., bites, kicks, needle stick, restrain and capture injury, etc.); and risk of contracting zoonotic disease.
 - Methods of training personnel.
 - Other methods to ensure personnel safety.

Procedures:

- All procedures to be performed and manipulations of animals should be described. The following should be given consideration when planning procedures:
 - Methods used for sampling tissues or specimens from wild animals should be designed to obtain the maximal amount of scientific data, with the least amount of animal handling, restraint, and distress, involving a minimum number of animals.
 - Aseptic sampling techniques and surgical procedures must be utilized.
 - Researchers must consider whether antimicrobial drugs should be administered following sampling or surgical procedures.
 - Methods that cause more than slight or momentary pain or discomfort require the use of appropriate anesthetics and/or analgesics.

Analgesia and Anesthesia:

- Very little information exists concerning the pain perception in many species potentially studied in a field investigation. According to IRAC principle four “Proper use of animals, including the avoidance or minimization of discomfort, distress, and pain when consistent with sound scientific practices, is imperative. 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.” Because information concerning appropriate anesthesia and analgesia regimes, doses, and routes may be limited, Professional Society Guidelines, veterinarians, and experts in the field should be consulted to determine the best application. Investigators should explain how the animal will be monitored and supported until fully recovered from any anesthesia provided.
- In addition to individual animal pain and distress, special consideration should be given to the following questions:
 - Could anesthesia facilitate less stressful and safer handling?
 - Are there legal requirements for use of the proposed agent in a field setting?
 - What is the probability the agent will enter the food chain and affect other species?

Euthanasia and/or Final Disposition:

- Method(s) of euthanasia or release must be described in the “Euthanasia or Other Disposition” section of the IACUC proposal.
- Information should also include the method of euthanasia that will be used for target and non-target species as part of planned experiment or due to unexpected injury or outcome, even if not anticipated (E.g., broken wings, hyperthermia, and seizure). All methods should comply with AVMA *Guidelines for Euthanasia* and any exceptions must be justified. Any carcass that has the potential to negatively impact surrounding wildlife (chemicals injected) should be disposed of in a way to prevent impact on surrounding wildlife (e.g., Bury deeply, landfill, incinerate.)

- Whenever practical, ecologically appropriate, and in accordance with any applicable laws and regulations, wild-caught animals should be released as soon as possible after capture at the site of original capture if: their ability to survive has not been impaired; they can be expected to function normally; conditions are conducive to their survival; their release is not likely to spread pathogens; and the release will not be detrimental to the well-being of the existing native animals. The release of animals held in captivity for more than a short period of time should be considered carefully to minimize potential impact on the local population and stress to the released individual. See: *Guidelines of the American Society of Mammalogists on the Use of Wild Mammals in Research.*

Alternatives to Painful Procedures:

- This section should clearly demonstrate that the methods proposed are the best practice as determined by applicable Professional Society Guidelines and pertinent literature searches. The following potential distresses should also be addressed:
 - Does any of the procedures to be performed increase the likelihood of predation or ability to compete?
 - Does the procedure have the potential to cause rejection by conspecifics?
 - Is research occurring during timeframe when target species is likely to have independent young? Could young animals be negatively impacted due to capture of care giving adults?



References:

1. *Animal Welfare Act and Animal Welfare Regulations, as amended. Title 9 CFR Subchapter A - Animal Welfare, Parts 1, 2, and 3.* USDA Animal and Plant Health Inspection Service. Current Edition.
2. *ASM/OC Position and Addendum #3 to 2007 Guidelines of the American Society of Mammalogists on the Use of Wild Mammals in Research*—approved June 2010
http://www.mammalsociety.org/uploads/committee_files/Addendum%203.pdf
3. *Disease Precautions for Hunters.* www.avma.org/public/Health/Pages/Disease-Precautions-forHunters.aspx • UC Davis
4. *Ethical Issues Concerning Animal Research Outside the Laboratory.* Nisbet, I.C.T. and E. Paul. 2000. *ILAR Journal* 45(3):375-377.
5. *Field Manual of Wildlife Disease: General Field Procedures and Diseases of Birds -*
http://www.nwhc.usgs.gov/publications/field_manual
6. *Field Studies and the IACUC: Protocol Review, Oversight, and Occupational Health and Safety Considerations.* K. Laber, B.Kennedy, L. Young. *Lab Animal* Volume 36 No. 1 January 2007
7. *Fundamental Differences between Wildlife and Biomedical Research* Sikes, R.S. and E. Paul *ILAR Journal*, Volume 54, Number 1 2013
8. *Guide for the Care and Use of Laboratory Animals.* (1985). Bethesda, MD: U.S. Dept. of Health and Human Services, Public Health Service, National Institutes of Health. Current Edition.
9. *Guidelines for Euthanasia.* American Veterinary Medical Association. Current addition.
10. *Guidelines of the American Society of Mammalogists on the Use of Wild Mammals in Research*—approved June 2010 http://www.mammalsociety.org/uploads/committee_files/Addendum%202.pdf
11. *Institutional Animal Care and Use Committee Guidebook 2nd edition, Section C3d Field studies.* OLAW and ARENA 2002.
12. *Interagency Research Animal Committee. U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research, and Training.*
13. OLAW online seminar “*Oversight of Research Involving Wildlife*” 2014.
<https://olaw.nih.gov/education/educational-resources/webinar-2014-03-20.htm>
14. OLAW online seminar “*Wildlife Research Permits: What IACUCs need to know*” 2017.
<https://olaw.nih.gov/education/educational-resources/webinar-2017-03-29.htm>
15. OLAW PHS Policy on Humane Care and Use of Laboratory Animals FAQs Q A6. 2020.
<https://olaw.nih.gov/guidance/faqs>
16. *Pain classification ASM/OC Position and Addendum #3 to 2007 Guidelines of the American Society of Mammalogists on the Use of Wild Mammals in Research*—approved June 2010
17. *Standards for Wildlife Research: Taxon-Specific Guidelines versus US Public Health Service Policy.* Sikes, R.S., E. Paul, and S.J. Beaupre. *Bioscience* Sept 2012, Volume 62 No.9
18. *USGS – Zoonotic Diseases (Mammalian): Work Smart, Stay Safe*
www.nwhc.usgs.gov/outreach/MammalianZoonoticDiseases2009b.pdf • USGS – Zoonoses and Travel
19. *Wildlife Researchers Running the Permit Maze.* Paul, E. and R.S. Sikes. 2013. *ILAR Journal* 54(1):14-23.
20. *Working with Marine Mammals and Your Health*
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