DRAFT for REVIEW
IACUC FAQs for Wildlife Research
FDP IACUC Subcommittee
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1. What is an IACUC?

    a. An Institutional Animal Care and Use Committee (IACUC) is required by federal regulations and policy to provide oversight of a research institution's animal care and use program including facilities, personnel and procedures. IACUC oversight is required by the Animal Welfare Act (AWA) for warm blooded animals used in biomedical research and by Public Health Service (PHS) policy for all vertebrate animal used in research, training, and testing conducted or supported by the PHS. Federal responsibility for ensuring IACUC oversight of compliance with the AWA is overseen by USDA Animal Plant Health Inspection Service (APHIS). The responsibility for ensuring IACUC oversight of compliance with PHS policy is overseen by the NIH Office of Laboratory Animal Welfare (OLAW). OLAW expects animal use to conform to the *Guide for the Care and Use of Laboratory Animals* (*Guide*). Federal regulations do not specifically require IACUC oversight of all activities using animals, but because it is often impractical to clearly separate activities based on the source of funding, whether the activity is biomedical, or is considered research, many institutions have chosen to have consistent IACUC oversight of all activities involving animals. Broadly speaking IACUCs are charged with overseeing the humane use of animals and ensuring adequate care at locations and facilities where animals are used. Scientific review beyond ensuring welfare is not the primary function of an IACUC.

2. Does field research on wildlife species require IACUC approval?
    a. If the proposed activities involve warm blooded or vertebrate animals, the IACUC is probably responsible for oversight. Field studies conducted on free-living wild animals in their natural habitat do not require IACUC and approval if the activity does not alter or influence the activity of the animals that are being studied (for example observation, photography, collection of feces). However, if the research activity involves materially altering behavior or influencing activities of the animals, direct interaction (e.g. trapping), an invasive procedure (e.g. tissue sampling), causing pain or distress, or if there is potential for harm to animals to animals, then the research activity must be reviewed and approved by the IACUC. Studies with the potential to impact the health or safety of personnel or the animal's environment may also require IACUC oversight, even if the study is observational. It may be useful for wildlife investigators to consult relevant

professional societies, available guidelines, statisticians, or veterinarians in the design of the field studies.

3. Who should determine whether field research requires IACUC review?

    a. The process for making this determination is not specifically defined by regulations. However, Institutions are ultimately responsible for oversight of animal use; thus, the business process for determination of whether an IACUC review is required is typically defined by the institution. Historically, these business processes have included IACUC pre-review, investigator self-determination, College or Departmental subcommittee or other processes. Because an erroneous determination could result in violations, institutions tend to be cautious is this business process.

4. What should be considered to determine whether field research requires IACUC review?

    a. Research activity that materially alters behavior, influences activities, involves an invasive procedure, causes pain or distress to animals requires IACUC review and approval. Short term behavior of wild animals is frequently altered by other animals and humans with no consequences. Research activities that cause normal and transient behaviors such as increased vigilance, signaling, vocalizing, hiding, or flight should not be considered to "materially altering behavior." Research activities that require capture or restraint of animals even if not involving an invasive procedure (tagging or banding) require review. An "invasive procedure" generally means entry into a body cavity or organ, or removal of a body part, and would not usually include peripheral blood sampling, swabbing, or the insertion of subcutaneous RFID chips. However, in field studies if these procedures require capture and release IACUC review is required. "Pain or distress" is generally considered any procedure that would reasonably be expected to cause more than slight or momentary pain or distress in a human being to which that procedure is applied (e.g. pain in excess of that caused by injections, brief food or water restriction, thermal stress, forced exercise).

5. What does the IACUC consider when reviewing field research on wildlife species?

    a. Broadly speaking IACUCs are charged with overseeing the humane use of animals and that ensuring adequate care at locations and facilities where animals are used. Scientific review beyond ensuring welfare is not the primary function of an IACUC. IACUCs must know where field studies will be located, what procedures will be involved, and be sufficiently familiar with the nature of the habitat to assess the potential impact on the animals. When capture, handling, confinement, transportation, anesthesia, euthanasia, or invasive procedures are involved, the IACUC must ensure that proposed studies are completed in accord

with the *Guide* (page 32) and other standards such as the AVMA Guidelines for Euthanasia. The IACUC also has oversight of the training of personnel and verifying that the personnel are adequately trained for the procedures they are undertaking.

b. The IACUC must also ensure compliance with the regulations and permit requirements of pertinent local, state, national, and international wildlife regulations. Institutions must have an occupational health and safety program (OHSP) that includes control and prevention strategies based on hazard identification and risk assessment of those hazards (Guide page 18). Because hazards and risks of field work may differ from laboratory or agricultural research, it may be useful for IACUCs to consult relevant professional societies, publications, guidelines, or professional wildlife biologists when reviewing field studies. Such consultation is encouraged by the *Guide* (page 32).

6. Does my research on wildlife species require IACUC approval if I'm collaborating outside of my institution?

   a. The requirements for IACUC review depend on the nature of the collaboration. If an employee of a registered or assured institution is responsible in any official capacity for directing or funding collaborative activities involving animals then IACUC review and approval is required even if the collaborating institution does not require IACUC review (e.g. state, federal or international wildlife agencies). If collaborating institutions have recognized IACUCs there is no requirement for dual review. In this case the IACUCs from participating institutions may choose which single committee will review the activities, but documentation of the initial and subsequent reviews, as well as any issues should be maintained by all committees. Best practices would be to have a memorandum of understanding that addresses responsibilities for animal activities and IACUC review (Guide page 15). The institution is not responsible for IACUC review of activities by employees that are acting as documented volunteers in their free time or as approved consultants for another institution. Volunteers or consultants for activities involving animals are subject to the same requirements and IACUC oversight by the responsible institution as are employees.

7. Does the IACUC's requirement for an occupational health and safety program (OHSP) apply to field research? What is the role of IACUC in occupational safety (protection from zoonoses, personal protective equipment) and other physical hazards during wildlife research?

   a. The Guide (P17) requires that institutions have an occupational health and safety program (OHSP) as part of the animal care and use program (CFR 1984a,b,c;

DHHS 2009; PHS 2002). Moreover, many federal and state regulations require a safe workplace (OSHA 1998a) and recent legal cases indicate employees of academic institutions are responsible for complying with this requirement. IACUCs should recognizes that the hazards and risks of field work are different from those in laboratories and require different training (e.g. emergency procedures differ in an urban and wilderness setting) and different risk assessment and mitigation processes. Because of the broad range of unique and unusual risks in working with wildlife in the field OHSP for field research should emphasize performance and practice standards (Guide, P6) rather than prescribed engineering standards (e.g. specific PPE). *Performance standard*s focus on a desired outcome and provide flexibility in achieving this outcome by granting discretion to the responsible investigator. Performance standards accommodate the consideration of many variables (such as the species and previous history of the animals and staff) encountered in field research. *Practice standard* means the application of professional judgment by qualified, experienced individuals. Professional judgment comes from information in the peer-reviewed scientific literature and experiences in the field. In the absence of other definitive sources, professional experience is appropriate for OHSP recommendations. Investigators should acknowledge their obligation to provide for the safety of all project personnel in both training and planned procedures and recognize that past practices may not be acceptable for contemporary expectations for safety and risk management. Field practices, like laboratory and agricultural practices must evolve and improve to keep pace with social and regulatory requirements. Regardless of the animal activity, an OHSP is intended to protect project personnel and investigators as well as the institution. Development of SOPs for handling emergencies including an updated contact list is generally recommended.

b.

8. What type of personal protective equipment do I have to wear? Is the PPE different when handling sick or dead animals? The PPE that my IACUC requires for lab animal studies would cause insurmountable problems in the field. How do I convince them this PPE is not necessary?

    a. While an occupational health and safety program (OHSP) is part of the overall animal care and use program, the institution determines structure of the OHSP which may be monolithic or divided across multiple administrative units. Compared to laboratory or even agriculture animal use, safety programs for field research are problematic because there are few recognized sources of expertise or academic training. Many OHSP staff have a background or degree in chemical or industrial safety but these programs seldom address hazards and risks common in

field studies. Because of the broad range of unique and unusual risks in working with wildlife in the field OHSP should emphasize Performance and Practice standards (Guide, P6) rather than prescribed engineering standards. This is particularly the case for Personal Protective Equipment Standard (PPE) where generic application of rules is likely to be inappropriate, ineffective, or insufficient (e.g. wearing Tyvek over or under insulated coveralls). *Performance standard*s focus on a desired outcome and provide flexibility in achieving this outcome. Investigators should participate in defining safety issues so that desired safety goals for PPE can be clearly defined and performance and outcomes monitored.

9. Can IACUC approve procedures that vary from the AWA, PHS policies or the Guide? Can the IACUC waive requirements that don't apply to wildlife studies?

    a. IACUCs cannot approve research that does not comply with the AWA or PHS policies. IACUCs can review and approve deviations from the *Guide* if an investigator provides convincing scientific justification. Scientific justification for an IACUC protocol is similar to that for manuscripts or grant applications, generally requiring citation of previous publications, analysis of results, statistics, and logic. Cost, convenience, or habits are not scientific justification. The IACUC or institutional official must report serious deviations from the *Guide* or continuing noncompliance. IACUC requirements are intended to ensure animal welfare and humane practices during research or animal use applies to both domestic animals and to wildlife.

10. What training does IACUC require for me or for my students?

    a. The IACUC must ensure that personnel involved in animal activities are qualified. Training must include humane methods, appropriate care of species used, minimizing animal distress, proper use of anesthetics, analgesics, and tranquilizers, methods for reporting deficiencies, alternatives to the use of live animals, and unnecessary duplication. IACUC's are also responsible for ensuring the institution provide or oversee an occupational health and safety program (OHSP) which includes training (G*uide* pages 17-23)**.** At some institutions, the IACUC may be responsible for specifying additional training for animal activities that are offered by other compliance units, including areas such as biological, chemical, or radiation safety, or scientific diving.

    b. Investigators frequently are experts in specific procedures or appropriate methods for a particular wildlife species or procedure used in a wild species or in the field, and it is appropriate for the IACUC to defer to investigator expertise or to delegate training in taxon and species specific areas just as the committee may use

consultants to help with areas outside its expertise. The IACUC is still responsible for ensuring qualifications and investigators are responsible for establishing their expertise. Demonstration of taxon or species expertise by an investigator to an IACUC is similar to establishing expertise in other areas of science, generally involving documentation of training and education, experience, publications, talks, or grants. The number of years working in an area is a good, but not necessarily sufficient, indicator of expertise or qualifications.

11. How soon do I need to have IACUC review proposed activities? What work can I do before I have IACUC approval?

    a. The IACUC reviews and approves activities involving animals. No work with animals may be done without or before IACUC approval. Once approved, all changes in procedures, samples, species, numbers, and locations also require IACUC review and approval before making the change. Work that does not involve animals is not reviewed by the IACUC, although some types of field work may require other review processes.

12. How can I be sure that someone with practical knowledge of field studies is reviewing my wildlife protocol? I know more about the species I work with than any IACUC member. How can they tell me how to do my research?

    a. The primary function of an IACUC is to ensure animal welfare, not to provide scientific review beyond the impact on welfare. Practically, evaluation of a contemporary standard for animal welfare depends on a combination of regulation, guidance, and experience of committee members which include a veterinarian, a practicing scientist, a non-scientist, and a non-affiliated or public member. Because of required training the IACUC is likely to know more about animal-use regulations and should help investigators understand and meet welfare expectations. An investigator is very likely to know more about his area of expertise than an IACUC. However, taxon- or species-specific knowledge is not necessary to evaluate welfare components such as statistical evaluation of the number of animals to be used, whether euthanasia methods are considered humane by scientists and the public, or whether proposed design and procedures are likely to result in intended goals and outcomes. Investigators should recognize the expectation that a scientist clearly explain goals, procedures and outcomes is inherent in any peer review process or public communication and an IACUC protocol review is comprised of both. Institutions must be sure investigators are trained in humane use of animals and an IACUC protocol requires application of this knowledge to all types of animal research including wildlife field research.

13. Will the IACUC approve capturing wild animals? What do I do if I trap an animal not on my protocol?

    a. Capture and release of wild animals is common for animal activities involving marking, banding or sampling. In reviewing capture and release protocols the IACUC should evaluate potential distress, pain and injury of the target animals resulting from the capture method, risks to project personnel, and management of potential by-catch. The IACUC should review procedures for ensuring that distress, pain, and injury for captured animals will be minimized. Steps to minimize risk to project personnel, including OHS training, should be reviewed with the recognition that field work, like agricultural research, has different inherent and unavoidable risks than laboratory activities, and alternative risk mitigation strategies may be most effective. If capturing non-target animals is likely, management plans should minimize potential distress and injury to animals and personnel. Activities involving wildlife capture may require permits and investigators should confirm appropriate permits have been or will be obtained before starting work.

    b. If captured animals will have surgery, aseptic technique should be reviewed. Conducting surgery procedures in the field may reduce overall distress and potential injury compared to prolonged holding and transport to and from conventional surgical facilities and IACUCs should weigh overall animal welfare when reviewing field procedures. Modifications of aseptic techniques may be desirable or necessary for field studies but should not compromise animal well-being. Use of analgesic, anesthetic, and tranquilizing drugs, and restraining devices, should be appropriate to minimize distress, pain, or injury and should be consistent with Guide recommendations unless there is scientific justification for approving a deviation. Difficulty in transporting supplies or equipment would not provide scientific justification. Holding animals for a prolonged recovery from surgery, greater than 12 or 24 hours, presents a special challenge for IACUC approval as regulations regarding animal housing and IACUC inspection of facilities come into play. Researchers should plan on ensuring adequate recovery from anesthesia after a procedure to prevent increased risk for predation or exposure to the elements.

14. Can I bring captured wildlife species back to my lab for my research? What are the requirements for housing captured wildlife species?

    a. If appropriate permits have been obtained wildlife species can be brought from the field for research and education activities. Once live specimens are brought to institutional facilities, they are treated as laboratory animals rather than wildlife. Housing, animal care and veterinary care requirements must be consistent with

the Guide unless the IACUC approves a deviation for scientific or medical reasons. Cost is not considered scientific justification for housing exceptions. IACUCs should consult with wildlife biology or wildlife veterinary experts to establish appropriate housing conditions rather than strictly applying Guide requirements for a similar species or taxon. The IACUC should ensure requirements for enrichment and housing of social animals are applied as appropriate. The requirement for IACUC to inspect facilities where animals are kept on a semiannual basis applies. The regulatory requirements for IACUCs to consider refinements to research, reduction of animal numbers, replacement with non-animal models, and unnecessary duplication applies to protocols bringing wildlife animals back to the lab. The IACUC is responsible for ensuring appropriate standards for transporting live animals are met if institutional personnel are transporting the specimens to the institution. Holding wild species within institutional animal facilities may require special attention to biosecurity issues, and may require quarantine periods, permanent isolation from other holding areas or pathogen testing.

15. Would I be permitted to euthanize wild animals as part of my research?

    Wildlife activities reviewed by an IACUC are generally conducted with the overall goal of benefitting wild species, habitats or ecosystems, as well as adding to the knowledge of a particular species or group of species. IACUCs recognize that this sometimes requires euthanasia, for example for the study of tissues or diets, or vouchering so that the existence of an animal is documented for a particular location and time. Other studies may involve invasive species, and the IACUC would not expect such animals to be released once captured. In any case, animal collection permits specify the species and numbers that may be lethally collected.

16. What are acceptable methods for euthanasia in the field?

    a. Wildlife activities reviewed by an IACUC are generally conducted with the overall goal of benefit for wild species by scientists interested in understanding and preserving wildlife so it is seems self-evident that field studies should conform with best available methods to minimize any necessary pain and distress to the species being studied. Methods of euthanasia must be reviewed and approved by the attending veterinarian and the IACUC. Unless the IACUC approves a deviation for scientific or medical reasons, methods should be consistent with the most recent edition of the AVMA Guidelines on Euthanasia. Approved methods vary by species and may include gunshot, but may not include some historic methods for wildlife euthanasia derived from trapping, hunting or management practices. Neither convenience nor cost is considered scientific

justification for alternative methods. The IACUC is responsible for ensuring personnel are skilled or trained in euthanasia methods to be used and can confirm death of the animal. A secondary method (e.g. exsanguination) can be used to ensure death.

17. Can I collect voucher or museum specimens of wildlife species?

    a. Methods of euthanasia for museum specimens must be reviewed and approved by the attending veterinarian and the IACUC and should be consistent with the most recent edition of the AVMA Guidelines on Euthanasia. The federal mandate that IACUCs consider the three "Rs" (Refinements to research, Reduction of animal numbers, and Replacement with non-animal models) and minimize unnecessary duplication when reviewing protocols applies to collection of museum specimens. Because there are no recognized standards or methods for determining appropriate frequency or number of sampling for reference or museum collections, it is incumbent of the investigator to demonstrate that these requirements are met. If the methods of obtaining museum specimens may include by-catch species, the investigator should describe how procedures to be used minimize by-catch. If the goal of obtaining specimens is a multiple species survey (e.g. biodiversity) the investigator should demonstrate that procedures minimize overall animal use to obtain a reliable survey.

18. How do I minimize the number of animals used when I don't know how many I'll capture?

    a. When an IACUC protocol is required for wildlife research (non-observational field research) the expectation that investigators and IACUCs consider alternatives (refinements to research, reduction of animal numbers, non-animal alternatives) and minimize unnecessary duplication applies. The Guide indicates that if possible, the number of animals to be used should be statistically justified (e.g. based on power analysis or published citations) but not all wildlife studies requiring IACUC review involve statistically testable comparisons. Even for statistically based designs there may be little information on population variation or occurrence of by-catch. In these cases the investigator should demonstrate that alternatives and duplication have been considered to the extent possible in establishing the number of animals to be used and the IACUC should recognize that the technical challenges in justification of numbers in some wildlife studies. Both investigators and IACUCs should consider animal numbers requested on an IACUC protocol as a maximum since actual field conditions may preclude any animal's capture or use.

19. How do I write an IACUC protocol that allows opportunistic sampling when working with the public or state wildlife agencies? What do I do when someone brings an injured wild animal to my station? What do I do if I encounter an injured animal in the field and there is nothing in my protocol?

    a. A common example of this situation is a member of the public bringing an injured animal or bird to a wildlife scientist for help. While this is a long standing public practice, there is little that a scientist at a covered institution can do without an IACUC protocol. Aside from any permit or safety issues, this is a sensitive area. Although it is certainly good public relations to help these individuals, the practice has certainly been abused in the past by unscrupulous individuals and invites scrutiny. Writing an IACUC protocol for these situations should be possible as 1) a standalone rehabilitation protocol, 2) a component of a museum or zoo specimen program, or 3) a component of an investigative protocol. In each case, all of the welfare issues and standards for care and use of laboratory animals would apply, including physically appropriate housing and feeding, veterinary care, IACUC inspection of facilities, appropriate training of personnel, and an OHSP. Justification for a rehabilitation protocol would typically have some staff or public education component. IACUCs and investigators should consider the range of permit and practical issues for returning rehabilitated animals to the wild, and defining the range of acceptable taxons in the protocol. Use of opportunistic animals for recognized museum collections could reduce overall animal use as long as the investigator were not "directing" the opportunity to obtain animals. Even in the absence of any museum collection, a euthanasia protocol for injured wildlife would be fully consistent with the intention of welfare regulations. Adding opportunistic animals to an investigative protocol would likely be least common because it would require a compatible design and scientific justification. Although not an IACUC issue, investigators should consider the potential costs of such protocols, recognizing that some source of funding might not be usable for care of non-research animals or that different care rates might apply.

20. How do I write a protocol that allows me to study unusual or interesting animals that I can't predict before I go into the field? How do I write an IACUC protocol that allows research during a crisis response (e.g. to a wildlife disease outbreak or environmental disaster)?

    a. Observation and documentation of new, unusual or interesting animals is a foundation of the scientific method and does not require an IACUC protocol. However, capturing, sampling, or killing unusual animals would require an approved protocol. An IACUC must review and approve activities on a project-specific basis, taking into account welfare requirements such as consideration of alternatives and minimization of pain and distress, so it is challenging to write a

protocol with sufficient detail that would cover a broad range of unpredictable situations. However, IACUCs may approve SOPs for routine aspects of research that can be cited by investigators in their protocols. Developing a reviewed and approved SOP that covered all potential procedures would be possible and citing the SOP should allow the rapid turnaround of a specific protocol necessary for response to investigate a wildlife disease outbreak. SOPs should be reviewed by the IACUC at least once every three years to ensure they are current and accurate.

21. Besides AWA and PHS regulations, should the IACUC be concerned about permits and other regulations for wildlife research?

    a. An IACUC must ensure compliance with the regulations and permit requirements of pertinent local, state, national, and international wildlife regulations. IACUC's may also be charged by the institution with non-regulatory functions such ensuring that investigators comply with other institutional requirements directly related to animal activities such as biological safety or scientific diving certification.

22. Do I need to have all my collection permits for my species of interest in order to obtain my IACUC approval?

    a. The order or sequence of obtaining various approvals and permits from different entities is a non-regulated business process determined by the institution or the IACUC. Institutions and IACUCs should have a sufficiently flexible business process to accommodate variation in the business processes of funding sources, government agencies, or institutional units.

23. Are wildlife field practices or wildlife management such as pest control or hunting regulated by the IACUC?

    a. No. IACUCs are concerned with pest management only in so far as it affects care and use of housed animal species. IACUCs are not concerned with recreational hunting, except in the case of an institutional employee directing the hunting as part of a research project. Obtaining post-mortem samples from animals killed by recreational hunters (e.g. at a check station) would not require an IACUC protocol. However, it is possible such an activity would still require safety training or participation in an OHSP.

24. I have all the state and federal permits needed for my research. Doesn't that cover any IACUC concerns?

    a. No. In general, state and federal permits address different requirements than IACUC review. Permits are generally intended to manage wildlife populations,

wildlife disease and, wildlife transport. These are different than the functions of an IACUC protocol review. Broadly speaking IACUCs are charged with overseeing the humane use of animals and ensuring adequate care at locations and facilities where animals are housed and used.

25. My research is about wild animals in the field. Why should I need to do an "alternatives search" for wildlife research?

    a. For activities that require IACUC approval, investigators are expected to minimize pain or distress and to minimize the number of animals used. Consideration of alternatives is only required when procedures proposed are expected to cause more than minimal pain or distress. Limiting the use of animals is accomplished by considering alternative procedures (often referred to as the "three Rs"). Alternative approaches which may *replace* animals with less sentient species or non-animal methods, *reduce* the number of animals used, or *refine* the methodology used. IACUCs should recognize the requirement to *consider* alternatives does not mean alternatives must be found and that scientific considerations should underlie design and procedure choices. The common approaches for R*eplacement* of animals with less-sentient species or tissue culture would have little relevance if the goal was study of biological processes in a specific wildlife species or of an animals relationship to its habitat. Wildlife investigators should recognize that considering alternatives involves providing justification for proposed design and procedures compared to alternatives, not simply stating that the alternative will not work. Photographs or videos are an alternative that could replace museum or voucher specimens in some cases and euthanasia or lethal collection should be justified. *Reduction* of animal use generally involves statistical planning to obtain desired power. Investigators may find it helpful to consult a statistician to determine the appropriate number of animals and should provide the IACUC with sufficient information to understand the analysis. IACUCs should recognize a study with an inadequate sample size is not useful and should consider the uncertainty of encountering animals in field research, uncertainty about variance in wild compared to domestic animals, and the possibility of by-catch when reviewing animal numbers. *Refinement* generally refers to choosing the most efficient and advanced methods to obtain good results, which tends to be priority for cost conscious investigators. IACUCs should recognize that refinements requiring comparison of new methods to previous methods that may be easily done in a laboratory may be very difficult in the field because of access, seasonal variation, weather, or other factors. Investigators should recognize that previous use of a method or procedure does not demonstrate refinement nor is it adequate justification for continued use in the face of better alternatives.

26. What is the role of the Institutional or Attending Veterinarian in wildlife studies? Who is responsible for veterinary care of captured wildlife species?

    a. Federal regulations define the roles of the institutional official, the IACUC, and the institutional or attending veterinarian in an animal care and use program. The attending veterinarian is a member of the IACUC and is responsible for the health and wellbeing of all animals used at an institution, including captured or wild-sourced vertebrate species, regardless of location of the animals. The attending veterinarian oversees animal housing, husbandry, and provision of adequate veterinary care for vertebrate animals housed by the institution for more than 24 hours or USDA covered species housed for more than 12 hours. The attending veterinarian must have access to animals and their medical records, access to facilities where animals are housed or used, and must provide for appropriate preventive, clinical, and emergency veterinary care. Investigators are responsible for consulting with veterinarians and the IACUC in order to develop workable plans for delivering adequate veterinary care. Adequate veterinary care at remote field sites may be provided by a variety of mechanisms, for example by training of project personnel, by contracting with local veterinarians, or even by remote connection to an institutional veterinarian. IACUCs should be receptive to flexible or novel plans for veterinary care for field sites as long as animal welfare is not compromised. The Institutional Veterinarian must be involved and ultimately approve of the veterinary oversight plan.

Additional Suggestions that should be addressed:

Field procedures

27. What types of procedures (capture, bleeding, surgery, implants, etc.) are allowed in the field with captured wildlife species?
28. Can I collect blood or tissue from a threatened or endangered wildlife species?
29. Can I surgically implant a Passive Integrated Transponder (PIT) tag in the field, or do I need to bring the animal back to a surgical unit?
30. What training do my undergraduates and graduate students have to undergo in order to implant pit-tags and take tissue samples?
31. Can I use shooting or hunting to collect wildlife samples?
32. What does IACUC consider to be appropriate methods for capturing, immobilizing, and euthanizing wildlife species?

Husbandry

33. What are the husbandry requirements for captive wildlife species?
34. Is environmental enrichment required for captured wildlife species?

IACUC committee

35. Does the IACUC need to be worried about the size of wildlife populations or use of endangered species?
36. Should the IACUC be concerned with captured wildlife species after release back into the field?
37. Should the IACUC be concerned with impact of proposed research on wildlife behavior or their environment (fencing, modification of behavior, imitating animals) even if no animals actually used?
38. What determines the USDA pain categories for research with wildlife species?
39. Is an IACUC protocol required when working with wildlife species outside of the United States?

Misc.

40. The National Park Service has an IACUC that approved my research. Do I need review by my IACUC as well?

41. How does IACUC oversight of a field study differ from oversight of a laboratory study?
42. Are there fundamental difference between review of animal use in biomedical and wildlife research?
43. What special considerations are necessary for the IACUC to review wildlife proposals?
44. What taxonomic groups are exempt from IACUC review?
45. What procedures with wild life species have to be completed by a veterinarian?
46. How do I answer questions on IACUCs when they are so completely inappropriate to field research?
47. Why is my wildlife research covered by IACUC rules designed for lab animals? The *Guide* is really for laboratory animals. Where can I get information on acceptable procedures for wildlife?
48. I know more about the species I work with than any IACUC member. How can they tell me how to do my research?

Project Personnel

48. If I have volunteers helping with research, do they all need to be listed on the protocol? How quickly can I have them added? Do they need to do all of the online training modules?
49. If I have a short-term (few days to month) intern do I need to add them to a protocol before they can assist with research?
50. If I do not know who some of my field technicians will be when I submit my protocol (e.g. I hire some number of temporary field techs each field season), how do I convey that on my protocol submission?