

Animal Welfare Perspectives on Wildlife Research: US National Science Foundation



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US National Science Foundation

- \$8.5 billion = 12,000 new grants/year
- About 1/4 of US govt funding for basic research at US colleges and universities
- Wildlife research funded through
 - Biological Sciences Directorate (BIO)
 - Geosciences Directorate (GEO)



Portfolio Characteristics

NSF Funded Wildlife Research

- Wide diversity of animals
- Large range of environments and settings
- Diverse ecological and physiological questions
- Organisms being studied are the objective
- Animal availability impacts options
- Data and sample collections maximized



Varied Study Designs

Field-based only

Lab-based with wildlife

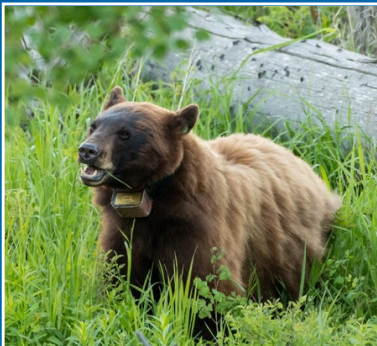
Captive that mimics
natural environment

Combination of field and lab

Observational

Manipulative

Terminal sampling



Recent Awards

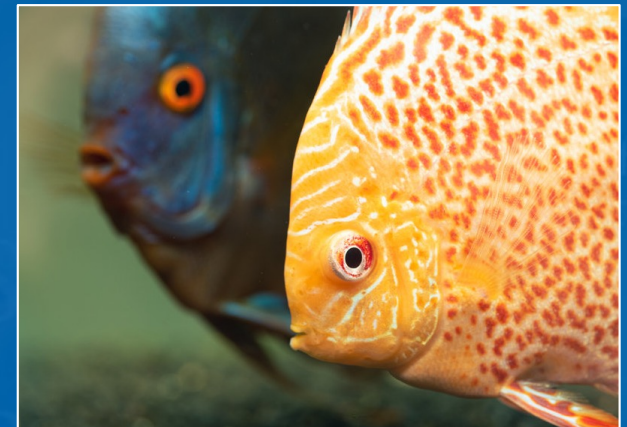
NSF/BIO: Integrated Organismal Systems



Evolution of behavior



Physiological mechanisms



Development and functional impact of genetic variation

Recent Awards

NSF/BIO: Environmental Biology



Identifying and recognizing biodiversity



Evolutionary mechanisms



Response to environment

NSF Guidance

Proposal and Award Policies and Procedures Guide

- Follow: *Guide for the Care and Use of Lab Animals*
- Supplement with:
 - *Guidelines to the use of Wild Birds in Research*
 - *Guidelines for the Use of Wild Mammals in Research*
 - *Guidelines for the Use of Fishes in Research*
 - *Guidelines for the Use of Live Amphibians and Reptiles in Field and Laboratory Research*



*Examples of challenges faced by
NSF-funded researchers
conducting wildlife studies*

Challenge

Anesthesia and euthanasia practices developed on captive-bred model animals: these practices don't always work the same or as effectively on wildlife.



Challenge

Feeding and care protocols for captive-bred animals can be detrimental to wildlife taken into the lab.



Challenge

Use of some lab-based safety requirements and protective equipment may endanger wildlife (or researcher) in the field.



Challenge

Field sites frequently are isolated with no internet or cellular service: implications for the ability of IACUCs to approve/inspect (especially for smaller organizations).



Challenge

Different countries may have different requirements: what is suitable in one country may not be suitable/available in another.



Challenge

IACUCs/attending veterinarians may not have the appropriate taxonomic or wildlife expertise or may not have contacts with the appropriate expertise.



Challenge

Field sites often cannot support standard housing protocols, and wildlife needs often are non-standard and species-specific.



Challenge

Organizations that receive NSF funding for field research and no other federal support for vertebrate animal research may have difficulty obtaining PHS-approved Assurance.



Take-Home Message

- Wildlife research is diverse (organisms, settings, design).
- Wildlife research is critical to recognizing and understanding the rules, principles, and mechanisms of life.
- Wildlife researchers face unique challenges and require more guidance and resources to insure the welfare of their study organisms.

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