

SURGERIES IN THE FIELD



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WHY IS COMPLIANCE WITH ANIMAL WELFARE ACT (AND IRAC PRINCIPLES AND PHS POLICES) AN ISSUE NOW?

- **IACUC approval usually required to obtain a collection permit.**
- **Many journals now require indication of IACUC approval for manuscript submission.**
- **Increased hiring of veterinarians by agencies and institutions.**
- **One Health.**

Mulcahy. 2017. The Animal Welfare Act and the conduct and publishing of wildlife research in the United States.

Proulx. 2017. Animal welfare concerns in wildlife research and management. Canadian Wildlife Biology & Management 6:1-3.

Field et al. 2019 Publication reform to safeguard wildlife from researcher harm. PLoS Biology 17(4):e3000193.

National Research Council. 2013. Veterinarians in wildlife and ecosystem health. National Research Council. Workforce Needs in Veterinary Medicine. The National Academies Press, Washington, D.C. doi:10.17226/13413.

WHAT FIELD SURGERIES ARE DONE ON WILD ANIMALS?

- Implantation of devices (transmitters, data loggers, transponders, sensors) into abdomen, coelom, subcutaneous space, muscle, thorax, skull.
- Biopsies (e.g., skin, fat, blubber, muscle)
- Surgical sterilization (neutering)
- Surgical marking (e.g., ear-clipping, toe-clipping)
- Extraction of teeth (for aging)
- Other (e.g., laparoscopy, ultrasound, fracture repair)

WHERE ARE WILDLIFE SURGERIES DONE?



ISSUES WITH WILDLIFE SURGERIES

- **Who can do surgeries on wild animals?**
 - No federal laws provide guidance (that I know of!). May be state laws or even local statutes defining this issue. Definitely may exist in other countries.
 - Most surgeries done on wild birds and mammals are done by veterinarians.
 - Most surgeries done on fish are done by biologists.
- **The goal for surgeons should be to produce high-quality, repeatable results to support the goals of the project.**
- **When biologists do surgeries on wild animals, they should aspire to acquire the same levels of skill and to meet the same standards as veterinarians doing the same surgery.**
- **Experience should be concentrated in as few people as possible to assure the highest quality product.**

DRUGS AND WILDLIFE SURGERIES

- US Food and Drug Administration and the Animal Drug Use Clarification Act (1994; AMDUCA; PL 103-396, 21CFR Part 530)
- Intended to control the use of a drug in a manner other than for which it was approved (“extra-label use”).
- Requires record-keeping.
- Requires establishing of a withdrawal interval.
- Congress intended drug use in animals to be under the control of veterinarians.



www.usfarad.org/drug-labels.html

DRUGS AND WILDLIFE SURGERIES-ANTIBIOTICS

- **Currently controversial due to emergence of drug resistance.**
- **Probably overused in wildlife research.**
- **Vastly overused for transmitter implantations in fish.**

Mulcahy 2011. Antibiotic use during the intracoelomic implantation of electronic tags into fish. *Reviews in Fish Biology and Fisheries* 231(1):83-96.

DRUGS AND WILDLIFE SURGERIES-CAPTURE DRUGS


- **Laws administered by the Drug Enforcement Agency (DEA).**
- **A permit, issued by DEA, is required to possess covered drugs.**
- **Accounting of use must be scrupulous.**
- **Legal requirements for storage and accounting.**
- **Losses must be reported within 24 hours.**
- **Unannounced on-site audits by DEA agents.**

WHAT SHOULD AN IACUC EXPECT FROM A SURGERY PROTOCOL? *

- Capture techniques.
- Holding and movement techniques.
- Sample numbers.
- Drug use for capture, anesthesia, analgesia (AMDUCA, DEA, FDA).
- Anesthesia techniques (including monitoring).
- Surgery techniques.
- Recovery monitoring and release decision-making.

*ASSUMES OTHER PROJECT GOALS WILL BE APPROVED.


Aseptic Technique in Surgeries Done in the Field

- “Federal regulations (9 C.F.R. 1A 1 2.31(d)ix)...(and) the Animal Welfare Act (7 U.S.C. 11 2131–2159) state that, ‘All survival surgery will be performed using **aseptic** procedures, including surgical gloves, masks, sterilized instruments, and **aseptic** techniques’” and that ‘Operative procedures conducted at field sites need not be performed in dedicated facilities, but must be performed using **aseptic** procedures.’ ”
- “The Guide for the Care and Use of Laboratory Animals (National Research Council 2011:118) states, ‘General principles of **aseptic** surgery should be followed for all survival surgical procedures.’ ”

Mulcahy, D. M. 2013. Legal, ethical, and procedural bases for the use of aseptic techniques to implant electronic devices. J Fish Wildl Manage 4(1):211-219

STANDARDS OF CARE FOR WILDLIFE SURGERIES

- Many “Guidelines”, “Standards of Care”, and “Best Practices” have been published.
- Not all guidelines are in agreement as to specifics. Taxon-specific differences are common.
- Guidelines are often written by people with vested interests, presenting possible conflicts of interests.
- Guidelines are neither laws nor regulations and therefore carry no force of law.
- Guidelines are not substitutes for laws and regulations.
- Guidelines sometimes contain erroneous statements.

A green helicopter is parked on a snowy mountain peak. A person is visible in the cockpit. The background shows rugged, snow-covered mountain ranges under a clear sky.

“Ultimate responsibility for the ethical and scientific validity of an investigation, and the methods employed therein, must rest with the investigator.”

(American Society of Ichthyologists and Herpetologists. 2004. Guidelines for use of live amphibians and reptiles in field and laboratory research. 2nd edition)
Available: <http://www.asih.org/files/hacc-final.pdf>

THANK YOU
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