Animal Welfare Scope Notes

The Animal Welfare Scope Notes has been designed as a guide for indexers. Animals to be covered and subject areas are outlined. There is a brief description of each subject area which includes a list of terms and topics that may be encountered. Term and topic listings following each subject area description are provided only as examples and should not be considered inclusive.

Animals Covered

All warm-blooded animals used for:

- experimentation in biomedical research
- education
- exhibition (e.g., zoos, parks and aquariums)

and cold-blooded and/or invertebrate species when used as alternatives

Species may include:

dogs	mice	transgenic species
cats	rats	***marine mammals
rabbits	pigs	horseshoe crab *(alt)*
guinea pigs	sheep	cold-blooded animals *(alt)*
gerbils	goats	simple organisms *(alt)*
hamsters	cattle	single celled organisms *(alt)*
*non-human primates	horses	fish and cephalopods *(alt)*
**captive wildlife	ferrets	birds and poultry *(alt)*
alt = alternative		

Special Notes:

* The National Library of Medicine has been charged with indexing information on non-human primates. Index only articles in which proper husbandry, handling, welfare or well-being are the primary topics.

** Captive wildlife includes any animal recognized as non-domesticated and housed in an unnatural setting. Zoos, exhibits, laboratories and parks are all considered captive settings.
The Animal Welfare Act covers animals in the above settings. Index only articles in which proper husbandry, handling, welfare or well-being are the primary topics.

*** Marine mammals include: Whales, dolphins, porpoises, seals, sea lions, walrus, sea otter and manatees. Marine mammals used in exhibition or research are covered by the Animal Welfare Act. Index only articles in which proper husbandry, handling, welfare or well-being are the primary topics.

Subject Areas

Alternatives to the use of animals in research, testing and education. Any method that can be considered to reduce, replace or refine research methods utilizing animals. Also, an in-depth discussion of the appropriateness of an animal model for a particular disease can be important to the use of alternatives. Such

methods and terminology may include:

animal model(s)	mathematical models
animal testing alternative	organ culture
alternative	cell culture
birds or poultry	tissue culture
cold-blooded animal system	reduction (number of animals used)
computer simulation	refinement (of techniques)
cyto-toxic tests	replacement (of animals)
fish or cephalopods	simple organisms
in vitro (method, model or technique)	single-celled organisms
mannequin (manikin)	validation

Training and education of:

- Animal caretakers or technicians (laboratory, zoo, aquaria, farm)
- primary investigators
- all relevant personnel who may be responsible for the care of experimental or exhibition animals.

Terminology, techniques, and subjects often covered include:

animal health (disease)	management
animal husbandry	methodology
aseptic technique	pharmacokinetics
blood collection (technique)	protocol
breeding (reproduction)	restraint
catheterization	safety
caretaker (technician, handler)	sanitation
deprivation (food, water)	technique
feeding (nutrition)	trainer
handling	zoonoses
injection	zookeeper
intubation	
investigator	

Analgesia, anesthesia and euthanasia. During experimental procedures or routine surgeries performed on animal species for proper care, pain management and control. Topics and terminology may include:

adjuvant (Freunds, Titermas, Ribi, etc.) analgesics (pain killers, drugs) anesthetics acupuncture conduction epidural intravenous inhalation local neurotropic blocking dissociative euthanasia (death, sacrifice) agents drugs protocol techniques (decapitation, microwave, cervical dislocation etc.)	pain (control, relief, recognition, assessment) *paralytic (immobilizer) neuro-muscular blocking agent paresis preanesthetic tranquilizers anticonvulsant anticholinergic sedatives surgery (operation) presurgical care postsurgical care intra-operative care * paralytics cannot be used without the use of anesthetics.

Transportation and acquisition of animals. The proper transport and care of animal while in route, quarantine, health evaluations and regulations governing transport both national and international. Acquisition of animals includes wild capture, pound animals, dealers, trapping, purpose-bred, pet trade and wildlife trade. Terms and topics may include:

acquisition (of animals) animal shelter auction purpose-bred random source (e.g. pounds) endangered or threatened species health (care during transport, regulations, documents) licensing quarantine	transportation (of animals) air in-house international interstate intrastate national rail (train) road (vehicular) water (ship)

Humane treatment. Any article which defines the humane treatment of animals under any number of circumstances.

- APHIS (Animal-Plant Health Inspection Service)
- bills (state and federal)
- code of practice (animal related)
- cruelty laws (animal abuse)
- directives (agency, government-wide)
- EC (European Community)
- EEC (European Economic Community)
- guidelines (humane care)
- legislation (local state, national international)
- NIH (National Institutes of Health)
- OPRR (Office of Protection from Research Risks)
- PHS (Public Health Service)
- policy (local state, national, international, institutional)
- pubic laws
- regulations (local ordinances, state, national, international)
- USDA (U.S. Department of Agriculture)
- CITES (Convention on International Trade of Endangered Species)
- Fish and Wildlife Service
- Marine Mammal Act

Environmental factors affecting laboratory animals. Physiological and/or psychological problems encountered in different species that are due to environmental factors. Terms that may be encountered are:

aquariums (holding tank) biohazard (hazard) caging design (of facilities) enrichment devices environmental enrichment exercise lots (pens or runs) food (delivery systems, quality) housing (indoor, outdoor) humidity illumination (light) macroenvironment	measurements (lumen, decibels, etc.) microenvironment noise (auditory) oxygenation photoperiodicity population density psychological well-being temperature toys ventilation (air exchange) water (quality, chemistry, systems)

Animal management. All information regarding management systems or strategies employed for proper management of a laboratory/zoo/exhibit/aquatic facility. Terms or subjects may include:

- animal identification systems
  - ear punching
  - ear tags
  - dyes
  - microchip
  - tattooing
  - toe clipping
  - banding
- animal procurement
- charting/tracking systems
- computer software (animal management systems)
- field stations
- radiotelemetry
- research protocol management

Institutional Animal Care and Use Committee. Guidelines established for committees to oversee and evaluate experimental protocols, usage and care of experimental animals. All topics relating to the proper installment and functioning of the committee should be covered. Terms and acronyms often associated with animal care committees may include:

- ACC (Ammal Care Comnuttee)
- ACUC (Animal Care and Use Committee)
- FOIA (Freedom of Information Act)
- guidelines
- IACUC (Institutional Animal Care and Use Committee)
- lay member
- open meeting laws (sunshine)
- research protocol (review)
- review board (committee)

Philosophies of animal welfare and animal rights as well as bioethics. Human use of animals and the inter-relationship with other elements of the biological world. Book chapters or articles covering ethical view points or moralistic teachings regarding man's relationship with animals. Arguments for or against the use of animals by man for research, food, recreation, companionship, etc. should be covered. Much attention is being paid to the human-animal bond. Terms that may be encountered are:

animal liberation animal protection animal rights (philosophy, groups, organizations e.g. P.E.T.A, Animal Liberation Front) animal welfare (philosophy, groups, organizations e.g. Scientists Center for Animal Welfare) anthropomorphism bioethics ethics human-animal bond (relationships) moral(s) philosophy sentience speciesism vegan (as it relates to animal welfare/rights) vegetarian (as it relates to animal welfare/rights) eco-feminism (as it relates to animal welfare/rights)

Animal Behavior or Applied Animal Ethology or Ethology. All the terms in this heading deal with the study of the behavior of animals either in their natural state (ethology), in domestication (applied animal ethology) or under laboratory manipulation (behaviorism). Most of the animals used in both food production, biomedical research or as companion animals are gregarious by nature. Many species of marine mammals (e.g., whales and dolphins) are social animals as well. The social behavior of these species becomes important when they are group or singly housed. Parameters such as the age, weight, sex, genetic relationship to other group members becomes important when housing social animals in groups. Likewise the effects of isolated housing or minimal contact housing are important to the well-being of such animals (non-human primates, dogs, rodents, ferrets, livestock, mini-pigs etc.). In order to understand the social infra-structure of these animals detailed studies are made in both natural semi-captive and unnatural (lab) conditions. Housing/exhibit/aquarium designs and strategies often depend on this type of research to develop facilities that accommodate an animals behavioral needs.

Other behaviors are also important. Spatial behavior of all species in both a group or single animal situations provides the criteria by which cages, aquariums, exhibits, exercise yards and pens are designed. Space allotment has often been the point of contention among animal welfare/rights groups and researchers. Space is one of the basic items addressed in laws and regulations covering laboratory, farm and marine mammal facilities. Be sure to look these articles over carefully to establish the link to animal welfare. The following are a list of terms that may help to identify articles that could be relevant:

abnormal behavior (stereotypies/anomalies)	investigative behavior (curiosity)
adaptive (or adaptation)	learned helplessness
affiliative behavior (grooming,care giving)	matemal/paternal behavior
aggression	normal behavior
agonistic behavior (fights, threats)	perception
behavior (behaviour)	preference (tests)
cognition	psychological well-being
deprivation (maternal, social)	recognition (sell individual kin, family, item)
developmental behavior (neonatal ontogeny)	reproductive behavior
diurnal patterns (circadian rhythms)	self destructive behavior (self-mutilation)
dominance (rank or hierarchy) enrichment	social (organization, interaction, facilitation)
habituation (adaptation)	spatial behavior (spacing)
instinctive behavior (inherent)	stress/distress/eustress

Topics Considered Not in Scope

Examples:

1. When animals are used as the experimental unit but there is little or no discussion with regard to welfare and/or use of the animal as a model.

2. When animals are used for behavioral research that is Skinnerian in-nature. This research is usually used for making comparisons to learning processes in human beings, is often conducted in elaborate boxes or mazes, and involves animals making a response that is not normally found in their natural repertoire.

   Exception:

   Operant conditioning is being used more frequently to teach animals to relax during a procedure or as a means of exploiting their environment. For example pigs have been taught to stand quietly for veni-puncture because they have been conditioned by receiving a reward of food or drink. Operant techniques help to alleviate stress to the animal and provide a physiological background clear of stress induced responses. Information relating these techniques should be covered.

3. An experimental paper giving data on a disease in non-human primates (e.g. polio in chimpanzees). Disease process papers are covered by NLM.