

STANDARD OPERATING PROCEDURE

ENVIRONMENTAL ENRICHMENT FOR CATS USED IN RESEARCH AND TEACHING

1.0 PURPOSE:

- 1.1 This standard operating procedure (SOP) describes the methods for environmental enrichment of cats (*Felis silvestris catus*) used for research and teaching purposes.
- 1.2 These methods are intended to improve the well-being of these animals by increasing species-specific behaviors and reducing maladaptive behaviors.
- 1.3 This SOP is part of the UGA Environmental Enrichment Program that fully complies with the requirements of the National Research Council, *Guide for the Care and Use of Laboratory Animal*, ed8 available at <http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf> and the Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act available at <http://www.nal.usda.gov/awic/legislat/awa.htm> .

2.0 STANDARDS:

2.1 Natural Behavior:

Recent archeological records suggest that domestication of the cat occurred at least 8000 to 12,000 years ago, making it one of the earliest domesticated animals. (Zax, 2007) Although cats are solitary animals in the wild, domestic cats have evolved some social organization. Social interactions depend on factors such as food availability, population density, degree of relatedness and individual characteristics such as age, sex and social status. Cats communicate with each other primarily through auditory, visual and olfactory cues. Early socialization is critical for the behavioral development of kittens. Play behavior is important in the development of motor, cognitive and social skills. (Bradshaw, 1992) Cats are predatory carnivores with excellent balance for climbing and jumping and an innate desire to observe and stalk prey. Cats prefer to sleep on an elevated perch. Cats also have a need to scratch for territorial marking and maintenance of their claws.

2.2 Environmental enrichment must be evaluated by taking into account the following:

- 2.2.1 The Natural Behavior and needs of cats (see above)
- 2.2.2 Social Enrichment – Housing of compatible co specific offers a high level of enrichment. Every effort will be made socially house social species. If social housing is not possible, animals should be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. Social housing is a recognized and important part of the Environment Enrichment Program but should not be viewed as the sole means of meeting the enrichment needs of animals.
- 2.2.3 Physical Enrichment (devices, toys, etc) – Physical enrichment can be an important part of the Environmental Enrichment Program. However the selection of physical enrichment should take into account the safety of the device, its ability to stimulate and maintain the animal's interest and its impact on the research being conducted. Physical enrichment should be carefully monitored to assess its impact of the goals of increasing natural behaviors.

2.2.4 Activity/Food Enrichment – Activity/food enrichment can be an important part of the Environmental Enrichment Program. However, the selection of activity/food enrichment should take into account the health of the animal, the limitations of its confines and its impact on the research being conducted. Any activity/food enrichment should be planned in consultation with the Attending Veterinarian (AV) and the Principal Investigator (PI).

2.3 The enrichment program is carried out by University Research Animal Resources (URAR). Specific needs and requirements should be communicated to the Assistant Director of the Animal Resources (AR) Unit.

2.4 Unless specifically justified by the PI in the Animal Use Proposal (AUP), all animals will receive enrichment. It is recognized that animal enrichment can be a research variable. In caring for the psychological well-being of animals, it is important to recognize limitations and use a balanced approach in providing the best possible care and allowing for the expression of species-typical behavior within a functioning research environment.

2.5 Abnormal Behaviors:

The Environmental Enrichment Program is a dynamic process. Ongoing evaluation is a necessary component to meeting the goal of more species-specific natural behaviors. University Research Animal Resources (URAR) will regularly monitor all enrichment, in part, by looking for stereotypical behaviors that might indicate animal stress or maladaptation to the laboratory environment.

Abnormal behaviors in cats include:

- Increased aggression or fearfulness
- Poor reproductive success
- Anorexia
- Pacing, tail chasing, self-mutilation
- Over grooming or not grooming
- Destructive behavior such as excessive marking or not using the litter box

When these behaviors are observed, URAR will evaluate the need for additional environmental enrichment. All changes to enrichment will be approved by the AV and the PI. Enrichment changes will be made for all animals on study, in order to minimize research variability, even if all of the animals are not showing the stereotypical behavior.

3.0 PROCEDURES:

3.1 Social Enrichment – Cats, especially females and neutered males, will be pair-housed whenever possible. If pair housing is not possible, due to research, incompatibility, or veterinary reasons, animals will be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. Unless not possible due to research, incompatibility, or veterinary reasons, singly housed cats will be offered the opportunity for social activity outside of the cage at for at least 30 minutes/day. Positive human interaction will be provided by Animal Care Staff on a regular basis.

- 3.2 Physical Enrichment - in order of preference
 - 3.2.1 Hammock or raised bed platform away from the litter box
 - 3.2.2 Scratch post or board
 - 3.2.3 Cat toys that are rotated on a biweekly basis
 - 3.2.4 Cardboard box or empty feed bag to hide in
- 3.3 Activity/Food Enrichment - in order of preference,
 - 3.3.1 Hiding food or treats (e.g. inside bedding, in toys, under boxes) rotated on a biweekly basis
 - 3.3.2 Treats given directly during human interactions

4.0 RECORDS:

The Animal Care Staff will log provision of enrichment daily according to their facility specific documentation records.

5.0 DEFINITIONS AND REFERENCES:

5.1 Definitions:

- 5.1.1 Animal Use Proposal (AUP): a detailed written description of the procedures involving the use of animals in a research or instructional project.
- 5.1.2 Attending Veterinarian (AV): the veterinarian responsible for the health and well-being of all laboratory animals used at the institution
- 5.1.3 Enrichment: a method of providing animals with the opportunity to behave as they do in the wild, playing, foraging, grooming, and interacting in other ways with one another.
- 5.1.4 Principal Investigator (PI): the scientist who plans and coordinates all phases of the research or instructional work and the protocol.
- 5.1.5 Standard Operating Procedure (SOP): a set of standardized instructions for dealing with routine laboratory procedures

5.2 References:

Animal Welfare Act and Regulations: Public Law 99-198 – The Improved Standards for Laboratory Animal Act (<http://www.nal.usda.gov/awic/legislat/awa.htm>)
 National Research Council, *Guide for the Care and Use of Laboratory Animals*, ed 8 available at <http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf>
<http://www.nal.usda.gov/awic/pubs/enrich/labcat.htm>
<http://www.awioline.org/pubs/cq02/Cq-cats.html>
http://www.adelaide.edu.au/ANZCCART/publications/TheCat_8Arch.pdf
<http://www.awic.nal.usda.gov/research-animals/environmental-enrichment-and-exercise>
 Zax, David (2007) *A Brief History of House Cats*. Smithsonian.com