

**STANDARD OPERATING PROCEDURE ENVIRONMENTAL
ENRICHMENT FOR PSITTACIFORMES USED IN
RESEARCH AND TEACHING**

1.0 PURPOSE:

- 1.1 This standard operating procedure (SOP) describes the methods for environmental enrichment of parrots and cockatoos (*Psittaciformes*) 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:

The order *Psittaciformes* contains cockatoos, parrots, lorikeets, rosellas and their relatives, about 350 different species worldwide. Most psittacines are medium sized birds, often brightly colored. All members of the order nest in hollows and many are very long-lived. They have zygodactyl feet (two toes forward and two back) and a distinctive curved bill with a slightly mobile upper mandible that makes them proficient seed eaters. Psittacines are typically divided into two main groups, the cockatoos and the true parrots. Cockatoos are native to Australia and nearby islands. True parrots are found throughout the world's tropical zones and many in cooler parts of the Southern hemisphere. (*bird.net*) With the diversity of habitat, wild psittacines evolved with their food supply and are opportunistic foragers, eating a wide variety of seeds, plants and fruits. They spend about 67% of their waking hours foraging and handling food. (Seibert and Sung, 2010) In the wild, their choice of a balanced diet is based on generations of experience. Unfortunately, that experience is not seen in captive psittacines, who will often choose a poor diet, high in fat and lacking in essential nutrients. The diet of captive birds must therefore be tightly controlled and benefits from the addition of fruits and vegetables in addition to commercially available seed mixes. (Ullrey et al., 1991) In the wild psittacines spend most of their day flying, foraging, resting and grooming. (Seibert and Sung, 2010) Psittacines are also vocal learners. (Watanabe et al, 2007) They naturally form flocks with complex intraspecific interactions. (Seibert and Sung, 2010) They are a very intelligent birds, with cognitive capabilities in the same range as those of primates. (Pepperberg, 1990)

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

- 2.2.1 The Natural Behavior and needs of Psittacines (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 psittacines include:

- Feather picking, self-mutilation
- Unbalanced aggression
- Restlessness, screaming, weaving
- Overeating or failure to accept new diets
- Fears and Phobias
- Inappropriate sexual behaviors

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 – Psittacines will be group housed whenever possible. If group housing is not possible, animals will be housed in a manner that allows for as much tactile, auditory, visual or olfactory contact as possible. 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 2-3 mobile perches (at variety of heights to encourage climbing and swinging)
 - 3.2.2 Increased cage size to encourage flapping, flying and running
- 3.3 Activity/Food Enrichment - in order of preference
 - 3.3.1 Tropical fruits left whole or in large chunks with seeds (e.g. pineapple, papaya, guava) (1 fruit/bird/week)
 - 3.3.2 Chew sticks made of soft wood (1stick/bird/week)
 - 3.3.3 Foraging devices (e.g. chew toys with food hidden) or feed scattered in cage to encourage foraging
 - 3.3.4 Music playing softly, during the light cycle. (Peron et al, 2012) This will be carefully chosen by staff, with the approval of the AV or AV-designate. Randomly-chosen radio station music is not allowed.

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>)
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