

# Ethosearch: A Comprehensive Repository of Ethograms for Use in Animal Behavior Research

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## ABSTRACT

Ethograms, as logically compiled catalogues of a species' behavioral repertoire, represent a fundamental underpinning of behavioral research. Well-designed ethograms underlie any rigorous quantitative study of behavior, because they actually specify "units" of data, the acts or events that are recorded and relationships analyzed. As the recognized need for the collection of standardized behavioral information in zoos and other study sites, along with the increase of collaborative, multi-institutional research, the need for a searchable, and easily used database of ethograms becomes critical. Ethosearch: the Ethogram Archive Project (EAP) is designed to address the lack of consistency and develop a tool that will be of critical value to zoological managers, researchers and students.

In 2000, a diverse group of behavioral scientists representing members of the Animal Behavior Society, Association of Zoos and Aquariums, International Society for Behavioral Ecology, and the American Psychological Association founded "EthoSource", envisioned as a centralized web portal through which to find, organize and interpret behavioral data. In 2003, this daunting initiative was divided into several components, one of which was an Ethogram Archive. In 2006, the Institute of Museum and Library Services (IMLS) provided funding to launch the Ethosearch Project. The Ethogram Archive Project (EAP) aspires to develop a central web-based tool, Ethosearch, that will serve a wide range of users: zoological managers, researchers, and students. It will consist of an Ethogram Archive and associated tools for searching, adding and relating ethograms to each other.

The goals of Ethosearch are:

1. To create a searchable, expandable database of existing and new ethograms;
2. To encourage and enhance the capacity of zoos to engage in collaborative, multi-institutional behavioral

research;

3. To develop multi-level user interfaces and tools for specialists to use the database for their own research goals;
4. To provide educational outreach and research opportunities for students from K-12 through graduate school, associated with developing, writing, and utilizing ethograms.

The structure of Ethosearch is based upon the classification of specific behaviors and their functional and operational definitions. Every ethogram will have a number of informative "metadata" tags. These will include such information as author, publication and citation information and details on the animal population on which the ethogram is based. Users of the database will be able to use these tags to access specific ethograms or behaviors of interest. For instance, Agonism is a category within the functional hierarchy of the behavioral ontology. This breaks down still further, and allows the submitter to identify head bob as a particular type of agonism (threat). The behavior is also categorized as a body part movement in the operational hierarchy. This form of multi-level and flexible ontology will maximize the effectiveness of this tool for researchers and educators.

The applications for an archived database of ethograms are broad. Zoological managers are frequently in need of reliable descriptions of animal behavior to help guide and measure the impact of a variety of environment and management interventions on animal use and welfare. Likewise, students are often in need of a resource with which they can work to begin rudimentary animal behavior investigations. Such "starter projects" can take place at zoological gardens but also in less formal animal environments such as backyards, parks and farms. With potential application to both the scientific and education community, Ethosearch has a proven niche to address and has positioned itself as a critical resource to encourage high quality ethological endeavors. The Ethosearch website is scheduled to launch publicly on the world wide web in the fourth quarter of 2010.

## Author Keywords

Measurement, behavior, ethogram.

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