Utah Museum of Natural History (UMNH)

Vertebrate Zoology Curation Agreement Guidelines

The Utah Museum of Natural History (the Museum or UMNH) is the primary repository for biological research collections at the University of Utah, and continues to acquire specimens from individual researchers as well as from federal and state agencies. The basic criteria for accepting specimens are outlined in the Museum's Collection Management Policy (CMP). General criteria for acceptance include nature and quality of specimens and associated data, their research and educational potential, fulfillment of institutional objectives, and the availability of Museum resources.

Although the Museum publicly known as the Natural History Museum of Utah, our legal name is **Utah Museum of Natural History**. The acronym **UMNH** will be used for all collections purposes.

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Vertebrate Zoology Curation Agreement

The Museum may enter into curation agreements with individual researchers, research labs, state, or federal agencies to act as a repository for voucher specimens of vertebrates obtained during research or management activities. The Museum also will consider requests to accept "orphaned" collections from other institutions. ***Acceptance of transferred material (in whole or in part) is at the discretion of the UMNH Vertebrate Zoology staff (Dr. Eric Rickart, Curator; Dr. Shannen Robson, Collections Manager).*** Large transfers will require review the UMNH Collections Committee (composed of Museum curators and the Museum Registrar), and are subject to final approval by the Executive Director.

1) Purpose: Specimens associated with particular research or management projects are referred to as voucher specimens. They provide the material evidence to verify the identification of species under study and otherwise augment the value of project results. Vouchers are essential in studies of biological systematics, and in fields such as parasitology and disease ecology where species identification is critical. They are important for any project where identification is doubtful, such as field surveys in regions that are poorly studied, or work involving species groups in need of taxonomic revision. In addition to amplifying the quality of the studies that generate them, voucher specimens have broader value in supporting future research activities. Thus, an individual specimen may serve as a voucher for multiple studies thereby increasing in value over time.

It is important to develop a protocol for vouchering specimens before a project begins. Topics to consider include how vouchering may augment both the immediate project and potential future projects, the number of specimen that may be involved, how specimens will be prepared, the quality of specimens and their associated data, other essential documentation, and the costs associated with vouchering. A written plan for vouchering must be submitted and approved by the Museum beforehand.

2) Legal documentation: The Museum only accepts specimens with proof that they were acquired legally. In the case of research scientists, this includes copies of state or federal collecting or research permits. Specimens originating outside of the US, must include copies of all necessary collecting and export permits from the country of origin, and a copies of US Fish & Wildlife Service import/export permits and forms. Older specimens obtained prior to the enactment of current wildlife laws may be accepted if they are accompanied by documents that can prove their age and place of origin.

3) Ownership or Stewardship: Transferred material becomes the property of the Museum. If the material is claimed by a government agency (e.g., U.S. Department of Interior, National Park Service) the Museum accepts the responsibilities of stewardship. Specimens and their associated data will be preserved and maintained by the Museum, and freely available for future use by the broader scientific community in accordance with our mission. Public access to some specimen data can be restricted for a period while ongoing research is completed, but additional restrictions are not acceptable. All specimen records become part of the public domain accessible though publicly accessible websites.

4) Minimal data standards: A specimen that has no data has minimal research value, whereas one with accurate data may have infinite value. It is best practice to have specimen information entered into a field or laboratory notebook (or spreadsheet). ***Each specimen must have a unique identification number*** that will link it to associated data.

The most important pieces of information are:

What: the nature of the specimen, sex, age, type of preparation and preservation, and how it was obtained and used in the project.

Where: the specific location where the animal was collected. This should include higher geography (State and County) and a specific named place, distance from a place along a named road, or airline distance coordinates (N-S and E-W) from a specific place on a map. GPS coordinates are very useful, but should be accompanied by verbatim locality.

When: date of collection and other dates if specimen were not prepared immediately (e.g., date of death, date prepared). Record dates in an unequivocal format (e.g., Dec. 6, 2018 or 12 June 2018, but NOT 6/12/2017 which could be either date).

Source: name and address of donor, or collector (if different), other contact information (affiliation, phone, e-mail).

5) Specimen quality and preparation: The Museum may accept small lots of frozen animals that have not been prepared as specimens, but otherwise specimens must be prepared before they are received. The value of museum specimens is enhanced when they are well prepared. For mammals, at a minimum a specimen should consist of an intact skull sufficient for species identification. More elaborate preparations increase the breadth of use of an individual specimen. These include study skins with skulls and partial postcranial skeletons, complete skeletons, or a complete fluid-preserved specimen (injected with either formalin or 95% ethanol and preserved 70% ethanol). Prior to preparation, record the sex, age category, and standard linear measurements in a written record. If possible, a small piece of fresh tissue (muscle or liver) should be preserved in 95% ethanol for use in genetic studies. ***The unique specimen id number must be written on labels or containers attached to or containing parts of the specimen, and in the written record containing specimen data (field catalog or spreadsheet).*** Animals frozen rather than prepared should be sealed in bags marked with the unique id numbers.

Hall (1962) provides clear instructions for preparing museum specimens of vertebrate animals. Note that these instructions are dated and include methods for poisoning skins with arsenic compounds to protect them from insect pests – ***this is no longer an acceptable practice***. Advice on specimen preparation and necessary materials are available through the Museum – ***contact Eric Rickart for guidelines on specimen preparation and data requirements.***

6) Field catalogs, notes, and other archival materials: Along with copies of research permits (see earlier section), the Museum requires copies of other primary documents such as field catalogs and notes, or spreadsheets, with the basic data pertaining to each specimen. These materials and the data they contain become part of the public domain. Publications in which voucher specimens are cited should include unique specimen identifiers (i.e., either original specimen id numbers or subsequent UMNH catalog numbers), and these publications reported to the Museum so that they can be directly associated with specimen records.

7) Curation fees and collection support: Accessioning and cataloging new specimens takes staff time and resources, and specimen storage takes up space. Accordingly, the Museum will require payment of curation fees when receiving transferred specimens. The fee schedule outlined here is for small mammal specimens. Larger specimens or special projects may require adjusted fees:

# of Specimens	Per Specimen Cost	Additional curation cost per 100 specimens	Storage Equipment costs
1-50	Gratis	n/a	
50-100	$10/specimen	n/a	
101-500	$10/specimen	$1000	
501+	$10/specimen	$1000	1 specimen cabinet

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Reference

Hall, E. R. 1962. Collecting and preparing study specimens of vertebrates. Museum of Natural History, University of Kansas, Lawrence. 46pp.
Link to pdf: http://museum2.utep.edu/mammalogy/vertebratespecimens.pdf