

ANIMAL RECORDS-KEEPING

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Though originally written when ARKS3 was the program in use and the current ISIS software was still in design, the discussions in this work about the principles of animal records-keeping remain valid. However, because CMS/ARAKS4 provides modified or additional fields for data entry, some of the ARKS3 data entry referred to in the original manual is no longer appropriate.

Outdated sections have been removed; sections discussing new CMS/ARAKS4 fields are presented in frames outlined like this one.

The reader is reminded that this work was developed in the United States and reflects the practices used in this region at this time.

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INTRODUCTION

This manual provides guidance in animal records-keeping: the collection and maintenance of data pertaining to live animal collections. It is a model applicable to initiation of a records system as well as to existing systems, including paper files, in-house computer programs, and ISIS programs.

The guidelines set forth in this manual have been developed to aid in standardizing records, thereby accomplishing most efficiently and effectively complete historical records on individual animals.

Comprehensive data recorded in a timely and consistent manner can be compared and analyzed within an institution and across a population.

We recognize the variety of organizational methods and staff sizes at institutions. Regardless, records must meet certain criteria. This manual outlines these criteria and provides examples to assist you in developing or improving the animal records-keeping system at your institution.

This manual addresses only the duties of keeping records on an animal collection, regardless of the number of staff involved or the title of the position(s) held. In addition, we believe that all staff directly involved with the care and responsibility of the animal collection must have a basic understanding of records-keeping, preferably a working knowledge.

This manual provides that knowledge for anyone dealing with live animal collections. As it is not the intent of this manual to dictate how records should be kept, but rather act as a guideline, space is left throughout the manual allowing you to make notations and record additional information unique to your institution. Some sections overlap others so that they may be referenced independently as the need arises. We recommend that initially you review the entire manual.

We hope this manual provides insight and information you will find useful. We also hope it is instrumental in fulfilling the end to which we aspire: data collected and maintained on living animal collections in a manner that reflects complete animal histories, information that is increasingly sought for cooperative conservation programs vital to the survival of species.

Chapter I. THE BASICS OF RECORDS-KEEPING

WHY KEEP RECORDS?

Good records maintain and transmit accurate information about the animal collection so that the information:

- documents a complete history of each animal owned by or kept at your facility. The inclusion of identification numbers at former and subsequent institutions links your specimen records to those of other institutions, expanding the known history of that specimen.
- provides meaningful archival material for the future. Data accumulated on many individuals is more useful than information on a single individual of a species. By maintaining comprehensive information about all specimens held, meaningful analyses are possible.
- provides legal documentation, including proofs of title and reports for permits. Complete records and files of correspondence, permits, and agreements corroborate justification of actions or aid in defense in legal proceedings.
- provides genetic history (pedigree) and basic demographic information used in local and global species management. With species disappearing daily, zoological institutions and aquariums are striving to maintain stable captive populations embodying the genetic representation needed for future release of animals into their native habitats.

- provides data for research and husbandry. Research depends on data, and the records-keeper's files can provide information increasingly referenced in developing and improving husbandry practices.

TENETS TO WORK BY

- Verify and complete all records. These records will:
 - include the basics of specimen identification and transaction history.
 - be written in some form (whether electronically or on paper) and be stored securely.
 - contain information that is either verified or annotated.
- Review paperwork to verify that all necessary documentation is present in the appropriate file(s). No transaction should be considered finished until it is ascertained that all documents are complete.
- Prepare all records as if a reader knows nothing. Give reasons for actions or estimates, provide sources, and include all possible supporting information. Abbreviations, initials, and acronyms should be used sparingly, since their meaning becomes less clear with time. A complete list of abbreviations or acronyms should be maintained in the "[Keys to the Files](#)" (Chapter V). Records are created so they can be consulted in the future, with the expectation that the reader may have only the information contained in the archives to establish the conditions and circumstances at the time of recording. Any information that can give the reader insight into the situation should be included.
- Do not trust to memory - WRITE IT DOWN! Memory is notorious for losing information; if data is not written, there is great danger of it being inaccurate or lost completely.
- Never discard information. Information gains value as time passes. Once an animal leaves the collection, there is no longer opportunity to add first-hand information about the specimen, so the archived data becomes the sole source of information.
- Write out dates to avoid confusion (e.g., is 10/01/90 meant to be Oct 1, 1990 or 10 Jan, 1990?)
- Always include the species and specimen identification (accession) number in all correspondence and on all documents. When a facility has several individuals of a species, it is especially important to refer to a specific individual by identification number.
- Each record should stand alone. One should not have to search all the files to find information - it should be kept in one place. When the reader must consult another file, concise reference should be given to the location of the other information.
- Always go to the PRIMARY SOURCE MATERIAL when researching information. Errors can occur any time data is transferred, so the original document should be consulted rather than a transcription.
- Retain copies of all correspondence, agreements, and permit applications. One must frequently reference previous correspondence, and occasionally resubmit or document applications.
- Provide safeguards for all data. This includes protecting electronic media and paper files against damage by insects, fire, water, magnetism, erasure, etc.

See Chapter V, "[Security](#)" for more detail.

ZOO VOCABULARY

0.0.0 (0/0/0): shorthand used by zoos and aquariums to indicate the number of males, number of females, and number of animals of undetermined (unknown) sex. For example, 1.2.3 (or 1/2/3) translates as 1 male, 2 females, and 3 animals whose sex has yet to be determined.

♂ and ♀: standard symbols for male and female, respectively;

♂♂ and ♀♀: indicate two or more males and females, respectively.

ACCESSION: a) the process by which a record file for a specimen is created. This assumes that the institution has legal title to the animal (i.e., ownership), physical possession of the animal, or both. b) a specimen recorded as part of the collection.

TO ARCHIVE: (within this discussion) to move non-current (inactive) files to a safe storage place where they may be consulted as necessary.

ARKS (Animal Record Keeping System): a specialized computer program developed by ISIS for collecting, reporting, and analyzing animal data within an individual institution.

THE COLLECTION: the total accessioned inventory of animals that are owned by or are on the premises of an institution.

DAM: the female parent of an animal.

DEACCESSION: the process by which a specimen is permanently removed from the collection due to death or title transfer, and its record file closed and archived (files are never discarded)

"HERPS": term referring to reptiles and amphibians as a group.

HOLDING INSTITUTION: the facility at which a specimen is housed, which may or may not be the legal owner of the specimen.

HOUSE NUMBER: in some institutions, a means of identifying a specimen within that institution; this number may refer to a tag number, in-house name, or other designation which is secondary to the use of specimen accession number. For other facilities, it is a synonym for accession number.

"ICHS": term referring to fish as a group.

ISIS (International Species Information System): a non-profit membership organization which maintains computerized animal data, obtained from participating institutions, on animals held in captivity internationally. (Address: ISIS, 12101 Johnny Cake Ridge Road, Apple Valley, MN 55124 USA)

"ISIS NUMBER": a number, unique within an institution, assigned by that institution to one of its specimens. This number is reported to ISIS, not assigned by ISIS. It is usually the institution's specimen identification or house number.

LOANING INSTITUTION: the facility which has title to a specimen but permits another facility (i.e., the holding institution) to be in actual possession of the specimen.

ORIGINATION INFORMATION: documentation of title and acquisition. It includes where a specimen came from, from whom or through whom the specimen was obtained, and any permits necessary for the possession or transportation of that specimen.

PERMITS: documents issued by governmental agencies for a designated facility to carry out specific activities for a stated period of time.

RECORDING INSTITUTION: in this manual, this refers to your facility.

SHIPPING PAPERS: used collectively, all documents required for the transportation of specimens to or from another facility. See Chapter V for more detail.

SIRE: the male parent of an animal.

SPARKS (Single Population Analysis and Records-Keeping System): computer program developed by ISIS to record data about, and generate analyses and reports for, a single species held in many facilities (studbook-type information).

SPECIMEN: an individual animal.

SPECIMEN IDENTIFICATION NUMBER:

(a) identification number that is assigned by the recording institution to an individual animal in order to differentiate that animal from all other specimens at the facility. If the number will be reported to ISIS, a maximum of six characters may be used. See Chapter II, "[Accession Number](#)". This term can be used interchangeably with "accession number," "identification number," and "ID #".

Specimen # = Accession # = Identification (ID) #

(b) Less commonly, it identifies a particular body part, tissue sample, or product from an animal. This sample will have its own ID number (different from the accession number) assigned by the worker involved and will likely refer to the accession number.

STUDBOOK: centralized comprehensive genealogical data about captive specimens of a species, subspecies, or population gathered from regional or international sources and used as a basis for species management. The annual printed report (the Studbook) often includes papers, information about husbandry, or a bibliography.

STUDBOOK KEEPER: person designated to gather information about the subject species from institutions holding specimens and to provide regular printed reports.

STUDBOOK NUMBER: number assigned by a Studbook Keeper and used in a studbook to identify a specimen. While the specimen may have different local ID numbers, the studbook number does not change when the specimen is moved to another facility.

TRANSACTION: the transfer of title to a specimen and/or the shipment of a specimen to or from another location, and the subsequent exchange of data and documents. Birth and death are specialized types of transactions.

In CMS/ARKS4, the term "Transactions" = "Visits"

TRANSACTION CONFIRMATION: a document stating transaction terms, as agreed to by all parties. This may be a letter or an Animal Transaction Confirmation form.

RECORDS COMMONLY MAINTAINED BY A RECORDS-KEEPER

SPECIMEN RECORD FILE. This is a collection of information about a specified individual, noted by its accession number. Included in the specimen file is:

- all information, in a standardized format, about the specimen's identity, including birth or acquisition data, ancestry, and description. For ISIS participants, an ARKS specimen report should contain all the necessary information and is part of the file.

- papers of any kind which directly or indirectly make note of the specimen. This includes, but is not limited to, permits, transaction agreements, and correspondence. The record file is not the sole repository of information; paperwork in this file may duplicate information found in other files, but each document will make reference to the specimen by its ID number.

Ideally, a separate file is maintained for each specimen, though a species file for all individuals of a species might be adequate in some instances. Each paper in any and all files must contain the ID number of the specimen referenced.

Other specialized peripheral files for medical records, permits, or transactions might be kept in other departments (e.g., veterinary or administrative), but are keyed to the records-keeper's specimen file by the specimen identification number.

ACCESSION LOG (ACCESSION LEDGER). This is a listing of accession numbers and the specimens to which they were assigned. This log (preferably a large, difficult-to-misplace, bound ledger) includes AT LEAST the following:

- 1) the sequential listing of accession numbers,
- 2) the species of animal that each number was assigned to,
- 3) the transaction date, and
- 4) the transaction type. It may also contain a daily journal detailing the day-to-day account of specimen transactions by recording the basic facts about collection activities occurring at the institution.

INVENTORY (CENSUS) RECORDS. Each institution should generate annually some type of inventory of the species in its collection. Regardless of the format, an inventory answers the question "How many?" for each species in collection on a specific date. Minimum information for an inventory includes:

- the number of individuals of each species on the start date.
- the number of births/hatches for each species during the report period.
- the number added by other means (non-birth acquisitions) for each species during the report period.
- the number of deaths for each species during the report period.
- the number removed by other means (dispositions) for each species during the report period.
- the number of individuals of each species on the end date.

An inventory provides an "account-balancing" from the previous inventory, i.e., the number of animals at the beginning of the current inventory will be the same as that at the end of the previous inventory. Any discrepancies should be recorded with an explanation.

OTHER TYPES OF RECORDS. These include files that in some institutions are maintained by the records-keeper, but in other facilities may be kept in the curator's or administrative offices. If the original document is in someone else's file, the records-keeper will have a copy. These files may include:

- loan agreements - the documents detailing terms and conditions of breeding, exhibit, or study loans.
- animal transaction papers - any of a variety of documents associated with transfers, usually filed alphabetically by institution (other party).

- permits - permit applications, permits issued, letters of authorization, etc. This file includes all permits (or copies thereof) issued to the institution; copies of permits specific to individual specimens are also placed in that specimen's file.
- "animals removed" (inactive files, archives) - the complete record files of animals which are no longer part of the collection. These files are stored safely, yet may be referenced easily. It should be noted that no records are discarded when an animal leaves the collection. These records become historic files which can be referenced should the need arise. Although the living animal is no longer at hand, the history of that animal still retains value.
- other kinds. This list is not all-inclusive and again, copies of items in these files may be found in one or more other files.
 - correspondence
 - surveys/questionnaires
 - keeper reports
 - weekly/monthly reports
 - cage/enclosure log
 - husbandry letters
 - studbooks
 - state and federal regulations

DUTIES OF THOSE WHO MAINTAIN RECORDS

The size and complexity of an institution determine exactly what duties a records-keeper performs. This section may be customized for your facility by adding a job description or by highlighting or marking the duties below that are pertinent to your facility.

Records-keepers are responsible for (or oversee):

- the recording of all animal transactions and related data
- assigning specimen ID numbers and creating record files for new accessions
- the guaranteed security of records by safe-keeping, necessary duplication and computer back-ups, and restricted access for data entry (limited to authorized personnel)
- obtaining as much accurate information as possible about specimens and making additions or corrections to records as necessary
- dispersing information to other appropriate areas of the facility (e.g., veterinary staff, curators, keepers, etc.) and to other institutions as required.

Most records-keepers also:

- provide information for surveys and questionnaires, federal/state/local permits or licenses, studbook and loan updates

- prepare shipping papers and/or animal transaction forms
- prepare reports (e.g., inventory, statistics)
- act as institution representative/liaison for ISIS

Other duties of a records-keeper might include:

- maintaining medical or other animal related records
- preparing Breeding Loan Agreements
- assisting in the updating and publication of studbooks
- maintaining a file of animal-related publications

Some records-keepers are REGISTRARS who may:

- assure that all animal transactions are in compliance with legal and policy requirements
- have a management-level position
- function as part of the Animal Management Committee
- direct shipping/quarantine arrangements
- monitor animal legislation and are responsible for the procurement of permits

JOB DESCRIPTION

A detailed job description, listing specific responsibilities, serves to prevent ambiguity about "whose job is it to...?"

A written job description, listing the duties of the records-keeper, should be available at your facility for periodic review and amendment.

STANDARDIZED DATA

For ease of interpretation, the format for recording data should be consistent within an institution and, ideally, between all institutions. This standardization facilitates understanding of another facility's records. ISIS took a leading role toward format standardization with the design of their 1974 paper data submission forms. To ensure that the information entered at the ISIS computer facility was what the institution really intended, the format was standardized as much as possible. This format has continued to evolve and be used (even by non-ISIS users) because of its usefulness and clarity.

Every institution should assure that its records system provides the minimum specimen information required by ISIS, but certain data are considered BASIC and REQUIRED in all records-keeping:

- species (scientific and common name)
- specimen ID number assigned by your institution

- sex of the specimen
- date of birth or estimated age, birth type (i.e., wild, captive, unknown), and place of birth or wild capture
- parentage, if captive bred
- previous locations and ID numbers, if any. For other than established institutions, the record should include complete names and addresses.
- all transactions (with dates and names of other parties) which involve the specimen, including information at past locations if known
- tag, band, tattoo, and transponder numbers, their locations and dates of application, and identifying marks or physical features
- permits relating to the specimen
- studbook number(s), if registered
- the date and cause of death, if the specimen is dead
- as much other information as is possible and practical

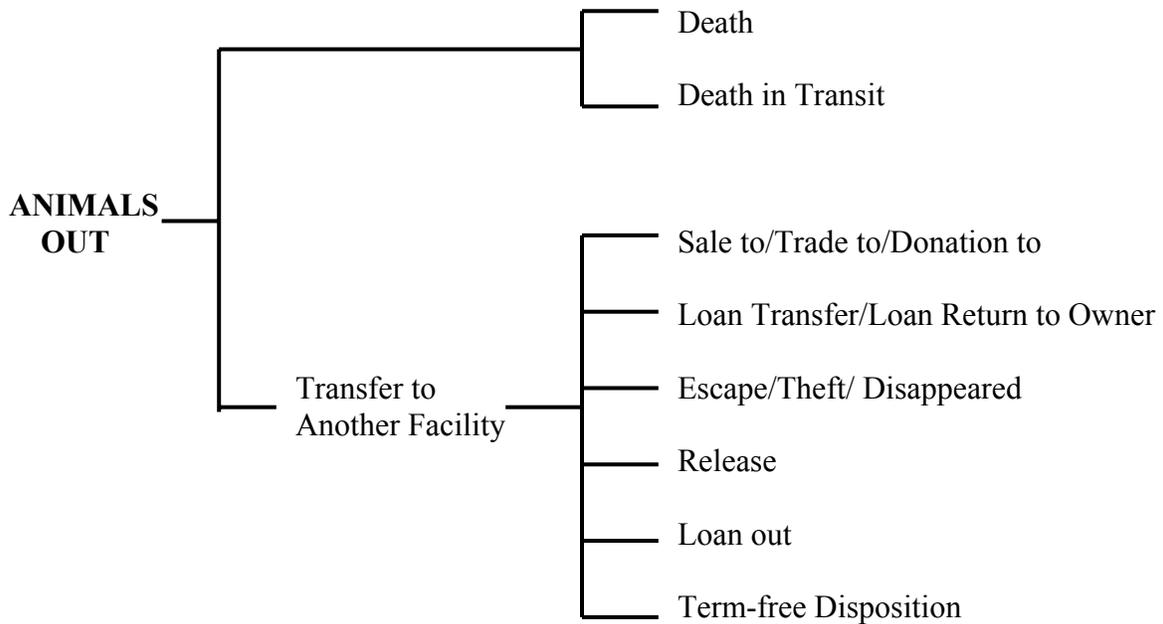
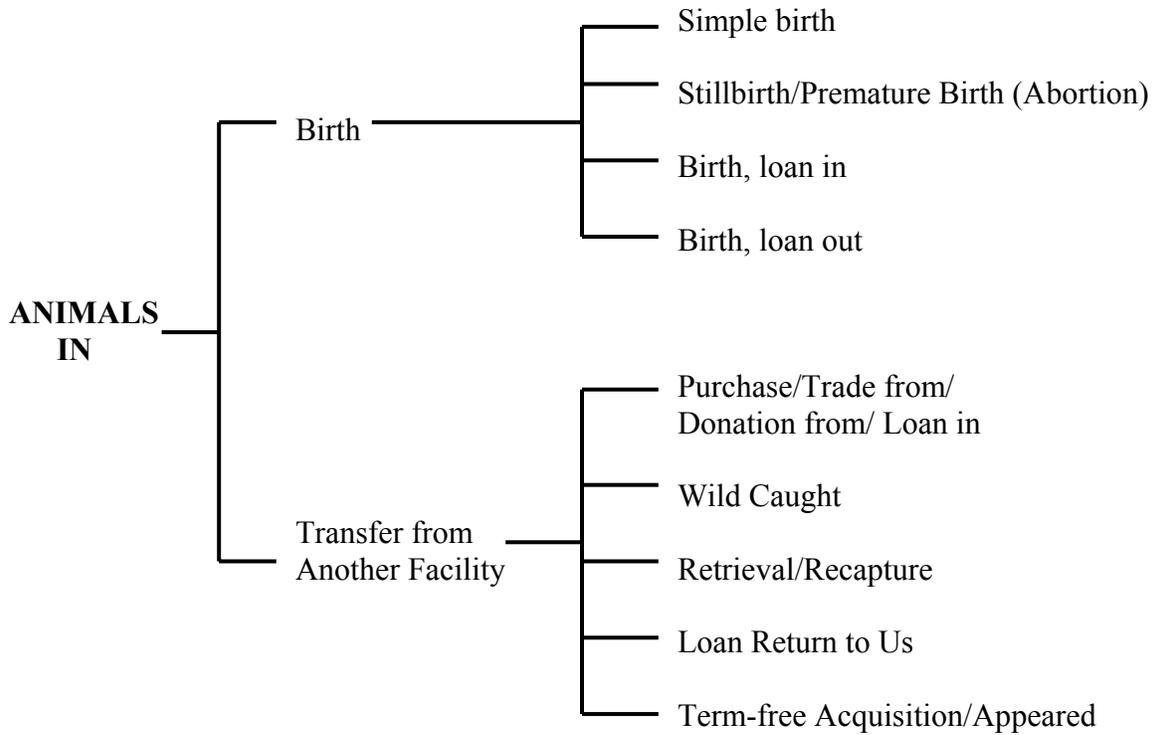
The specimen ID number must be on ALL documents.

All transmissions should meet minimum standards. When corresponding with other facilities or sending follow-up information, *at least* the species, ID number, and sex of the specimen should be included. It is preferred that excess information be transmitted, rather than insufficient data. In all transactions, including those with dealers, documents containing the minimum information (such as ARKS specimen reports) should accompany specimens between institutions.

Information must be transmitted to other institutions in a timely manner to avoid data being lost or forgotten and to establish linkage. (See Chapter V for more on [linkage](#).)

- The data and rationale for each transaction must be consistent between institutions, i.e., both must be in agreement about the kind of transaction, as well as how and when it occurs.
- The sending institution should forward the above-noted basic information in addition to other types of paperwork, ensuring that each page contains the specimen ID number. This allows the receiving institution to understand how previous transactions were treated.
- The receiving institution must inform the sending institution of the ID number assigned by the receiving institution.

TRANSACTION (VISIT) TYPES



Chapter II. ACCESSIONS

The concept of accessioning is perhaps the most important aspect of records-keeping. Once the logic of "why" (see Chapter I) and "how" (Chapters II and III) are understood, records-keeping becomes a much less forbidding task. Familiarity and confidence will follow with practice.

Each specimen has genetic, behavioral, medical, and demographic value. Written records (hand-written, typed, computerized) are kept to document the identity and ancestry of an animal, its history, and the significant events in its life. Because records are written, they are available at any time. Trusting someone's memory is a dubious practice; only written information is permanently accessible and reliable. When this information is preserved and made available, a meaningful body of data can be compiled from a large number of detailed single-specimen records.

ACCESSION vs. ACQUISITION

ACCESSION: the process by which a record file for a specimen is created. This assumes that the institution has either, or both, legal title to the animal (i.e., ownership) or physical possession of the animal.

Accession and acquisition are separate terms. According to Funk & Wagnall's Standard Desk Dictionary (1980),

ACCESSION means "to record, as additions to a library or museum" while ACQUIRE means "to come to possess; receive." The Smithsonian Institution defines ACCESSION as "the formal process or procedure of recording an addition to the collection" and ACQUISITION as "the act of gaining possession" (Smithsonian Institution, Office Memorandum # 808). The key points are title (legal ownership) and physical possession. Thus, a specimen may be accessioned though not physically acquired (e.g., birth on loan out).

Example 1: Your institution purchases a specimen that is currently at, and will remain at, another facility. The specimen is accessioned because your institution gains title to that animal.

Example 2: A specimen on loan to your institution produces an offspring which will belong to the lender. The offspring is accessioned because your institution has physical possession of it.

Example 3: Your specimen on loan to another facility produces an offspring which will be owned by that facility. Your institution does not accession this offspring because your institution has neither title nor physical possession of it.

INDIVIDUAL vs. GROUP ACCESSION

Ideally, every specimen which becomes part of your collection should be accessioned with an individual record in order to maintain the most detailed information. In an INDIVIDUAL ACCESSION, a record file is created for, and an accession number is assigned to, one single animal. No two individuals should have the same number, even if they are identical twins, and the number assigned by your institution is unchanging.

Unfortunately, this standard of individual accession sometimes proves impractical. Recording as individuals a colony of invertebrates whose life span is a matter of weeks is an almost insurmountable task, and because individuals cannot be distinguished, accurate information on each is impossible. Since accessioning carries with it the responsibility of recording all subsequent transactions for the specimen, additional data entries on every specimen would also be required. This is an enormous investment in time for a large number of animals.

In a GROUP ACCESSION, a record file is created for several individuals of a species, all included individuals having common characteristics. If institution policy allows, a single number may be assigned to

an entire litter or colony when specimens cannot be positively and consistently distinguished. Parentage, sex ratios, etc., can be recorded once for all included individuals

Examples of situations acceptable for group accession include:

- a colony of rodents where offspring become part of the breeding group. The founders of the colony are known, but there is constant turnover in breeders and population. The gene pool is limited and is not being managed daily.
- a spawn of amphibians which may occur over an extended period of time. All offspring from a pair or small group over a given period might be included in one group.

Group accession is less desirable than individual accession, but is preferable to incomplete or inaccurate information.

Author's note, August 2004: Species managers and population biologists still have difficulty using data recorded as Group Records for genetic or demographic analyses. Whenever possible, avoid using Group Records for managed species within your collection.

Single animals from a group should be individually accessioned and assigned new (replacement) ID numbers when they become individualized. A note in the group history indicates the new accession number assigned and the individual's new record includes — in addition to other required accession information — a note that the specimen was accessioned from a specified group (e.g., "accessioned from group #123"). Also included is a note as to the reason for the change in accession (e.g., "to be paired with #456")

The reverse of this process is also possible -- several individual records (of the same species) can be combined to form a group record if the individual identities of the specimens have been lost. In this case, the individual records will contain notes about why the individuals are being combined and what the new (group) accession number is. The new group records will contain the previous individual ID numbers and notes about the origin of these individuals.

ACCESSION NUMBERS

A specimen will most likely have several identifying numbers during its lifetime, but these numbers each refer to different aspects of the animal's history. A specimen will have a different accession number at each institution where it is held. The individual also may have International Studbook and Regional Studbook numbers, each assigned by the respective Studbook Keeper. For example, cotton-top tamarin International Studbook #3565 is the same animal as North American Regional Studbook #474, Memphis ID #1287, and Buffalo #1098. Each number must reference the other numbers in the record file; a note of the studbook numbers and Memphis ID # are all part of Buffalo's record for specimen #1098.

ACCESSION NUMBER: a string of characters - up to six for ISIS purposes - assigned by the recording institution, unique to one specimen (or group), and used to identify that specimen (or group) in the files of the recording institution. The accession number is tied to the physical characteristics (tag, tattoo, identifiable color patterns) and transaction information about that specimen (or group). In essence, it is a key or code to a specimen and its history.

Accession # = Specimen ID # = Identification (ID)

NUMBERS MUST BE COPIED EXACTLY whenever possible. Since zero is a numeral, it has value in any place in an accession number. Leading zeroes must not be ignored or dropped: 00011 is not the same as 11. The letter "oh" (O) must be distinguished from the numeral zero (0), which is much more commonly used. Hyphens, slashes, etc. should be copied when encountered, but may need to be sacrificed. Thus 1234/AB might become 1234AB when only six spaces are available. In such cases, contact the institution to determine the essential characters.

The accession number can give information about itself. Some institutions use a sequential numeric system (e.g., 123456). Others use letters or designated numbers in selected parts of the ID number to refer to class of animal (e.g., 112345 or M12345 - where the first character indicates mammals). Specific parts of the number may also be reserved for year of accession (e.g., 910123 or 91M123 - where the first two characters are the year). Many other systems are possible. Letters used in accession numbers increase the available range of possibilities, though some letters can be confused with numbers (e.g., 0 and O, 1 and I, 2 and Z).

NOTE! Currently, the San Diego Zoo uses an 8-digit numbering system. ONLY THE LAST 6 DIGITS ARE USED OUTSIDE THAT INSTITUTION.

Here are some sample numbering systems (with explanations).

Example 1: First two digits are year of accession; last four are sequential

#920006 = sixth specimen accessioned in 1992

Example 2: Strictly sequential: first animal = 000001, second = 000002, etc.

Example 3: Systems in which each series of numbers designates a different class

100000 - 199999 = mammals

200000 - 299999 = birds

300000 - 399999 = reptiles

400000 - 499999 = amphibians

500000 - 599999 = fish

600000 - 699999 = invertebrates

Therefore, in this system, #101234 = a mammal

Example 4: First two characters of number = last two digits of the year in which accessioned; third character = M, B, R, A (for Mammal, Bird, Reptile, Amphibian); last three characters = consecutive order of arrival

#92M6 = sixth mammal accessioned in 1992

NOTE! Accession numbers must not be duplicated within an institution.

RENUMBERING

THOUGHTS TO CONSIDER

ISIS, 15 Jan 1991

Many facilities decide for one reason or another that they want to modify their accession numbering (Specimen ID) system. There are subtle complexities and consequences, as well as options, which might not be immediately obvious. We'll try to explain a few of them here. Please contact ISIS if you want to discuss this.

What should be in an accession number?

Our answer - very little. Especially for computerized records use such as ARKS, it is easy to retrieve extensive information on the specimen, rather than trying to code it all into the number itself. After 17 years of experience working records from (presently) 380 institutions and their numbering schemes, ISIS has noticed quite clearly that the two systems with the least confusion are:

1. Sequential numbers. Possibly starting at 1000 or 10000 to allow earlier historical entries.
2. Sequential numbers with the year of first accession as the first two digits - i.e., the year 1991 starts out 910001, 910002, and so on.

Facilities with one of these systems tend to stay with it, providing the enormous benefit of stability.

What are the complications of accession number changes?

1. Other facilities have made your old numbers part of their records. ISIS has encouraged member facilities to collect, record, and submit this information, as it is the key which links your part of the specimen's history with their part. As a result, your old numbers are recorded in hundreds of zoo's ARKS systems and paper records systems.
2. These other facilities report your number to ISIS, where it is stored in our central database and is critical in "linking" together animal histories.
3. Increasingly, your numbers also are part of studbook data sets maintained by national, regional, and international studbook keepers.
4. In sum total, the impact of you changing "your" numbers is so severe that it might be better not to think of them as belonging exclusively to you.

What is the best thing to do?

If a change is a very good idea - i.e., you're changing to one of the schemes suggested above, then we strongly recommend that you change for new accessions only. Over time, the new scheme will come to dominate, except possibly for the elephants and tortoises who will likely carry their "old" number the day you retire from the facility.

An institution may have several numbering systems through time as systems evolve and are refined. In such cases, it is helpful to have a statement explaining how various numbers were assigned and a time frame for use of those numbers. An explanation is included in the "[Keys to the Files](#)" (see Chapter V).

When a specimen is accessioned at an institution, that institution assigns an identification (accession) number to it. This number is unique within the institution and is intended to remain as part of the active and historic records of that individual (or group). If an animal is returned following deaccession, the same (i.e., previously assigned) ID number is REASSIGNED to it and the old record file is reactivated.

Should a specimen's accession number ever be changed, the new number and old number must both appear in the specimen's record file. This linkage proves that the animal indicated by both numbers is one and the same. The change of accession numbers should not be done lightly, but a change in the numbering system is one legitimate reason for such action. Once a number is assigned, it MUST NEVER BE REISSUED, even in the case that the original accession was an error. A change of ID number must be reported to any facility or studbook having any interest in that animal, and the records of its dam, sire and offspring must also be amended.

Some type of log must be kept of the accession numbers which have been used and the next number in sequence to be assigned.

This log (preferably a large, difficult-to-misplace, bound ledger) includes AT LEAST: (1) the sequential listing of accession numbers, (2) the species of animal that each number was assigned to, (3) the transaction date, and (4) the transaction type. It might be part of a daily diary: a collection point for information about all transactions that occur at or involve the facility. The log is updated as numbers are assigned.

The ledger or diary allows one to determine the last number assigned as well as learn basic information about a previous number, such as when and to what species it was assigned. ARKS maintains its own log, but a manual log is still essential as a back-up for when the computer is down, for perusing a large block of data at once, or determining (by hand-writing) who made an entry.

THE ACCESSION PROCESS

The accession process begins immediately after the specimen arrives - not after some arbitrary interval. An accession number (ID number) is assigned to the specimen and information about the animal is gathered into a file created for it. Information required for each type of transaction is discussed in [Chapter III](#) and [Chapter IV](#).

An animal is accessioned under two circumstances:

1. at its BIRTH/HATCH at the recording institution, or
2. when the specimen or title to the specimen is RECEIVED FROM ANOTHER FACILITY.

See definitions below:

1. The event called BIRTH, for records purposes, occurs in:
 - mammals at exit from the mother's uterus, by natural birth or by Caesarean section. Marsupial and monotreme offspring may be discovered at some considerable time after the birth (e.g., when pouch movement is seen); knowledge of developmental stages of such animals guides the staff in determining the actual date of birth.

Author's note, August 2004: Though there is not yet a global standard for accessioning marsupials and monotremes, records keepers in many regions have recently begun to adopt the same guidelines in the interest of fostering unambiguous data. This involves recording the actual birth date of the specimen (emergence from the birth canal) rather than beginning the record at a specific developmental stage, such as emergence from the pouch.

- birds at pipping (i.e., opening of the egg) or at emergence from the egg
- reptiles at pipping (for egg-laying species) or "birth" (for species which do not lay eggs)
- amphibians at full metamorphosis. The post-hatching larva is not capable of survival out of water and is likened to a mammalian fetus. Its emergence from the water stage is comparable to the birth or hatch of higher animals.

[Stillbirths and premature births \(abortions\)](#) are accessioned; these are discussed more fully in Chapter III.

2. ACCESSION FROM ANOTHER FACILITY occurs:

1. at physical possession (when the specimen is received at the recording institution), or
2. at transfer of legal title: ownership of an animal is transferred to the recording institution, even if the specimen remains at another facility.

Example 1: A specimen on loan out produces an offspring that, by Breeding Loan Agreement, belongs to your institution. Title to the offspring belongs with your (the loaning) institution, though the progeny remains on loan out.

Example 2: Your institution trades animals with institution B, whose specimen is on loan to facility C. Your institution now has title to an animal on loan at facility C.

Authors' note: Zoo practice differs from museum practice, which restricts accessioning to owned objects; museum loans are not accessioned.

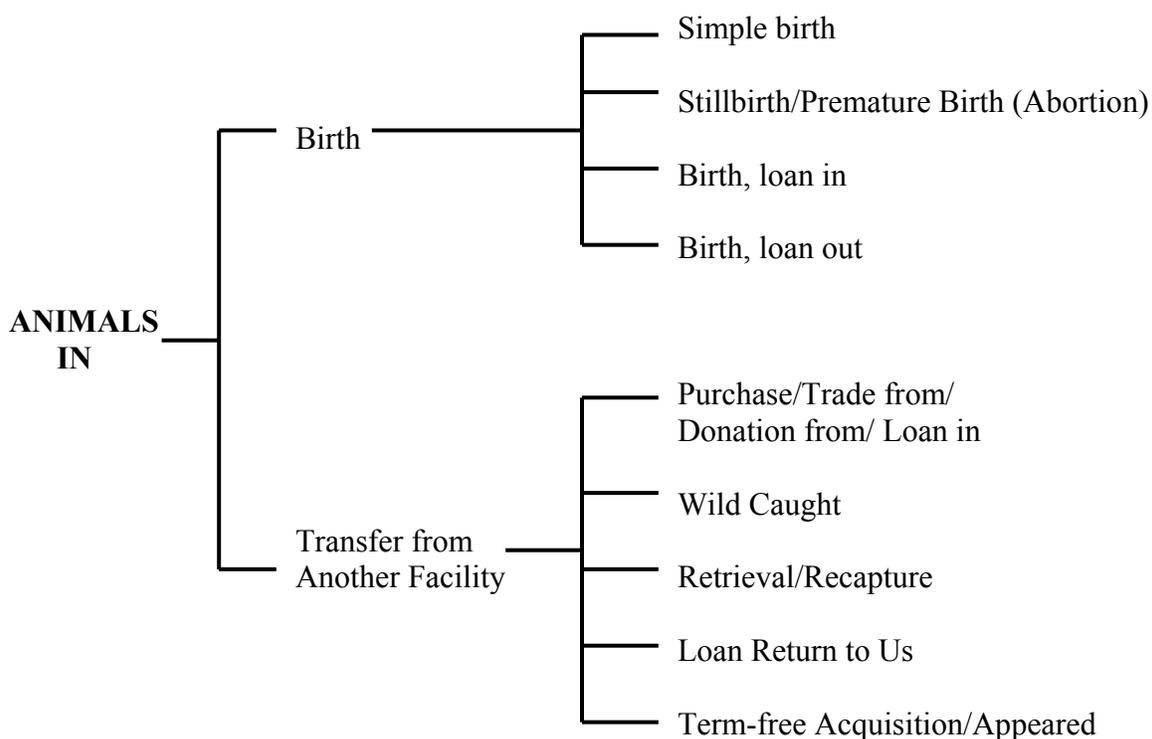
ACCESSION POLICY STATEMENT

Each institution should formulate a written policy which will guide the records-keeper in determining if, how, and when a specimen is accessioned. This differs from an "Acquisitions and Dispositions Policy" (which details acceptable means of acquisition and disposition) and a "Collections Management Policy" (which details the lines of authority). An Accession Policy Statement includes:

- what animals are to be accessioned and what are not
- when specimens are accessioned
- how accession decisions are made and by whom
- the procedure for the actual accession

Since each institution will have its own policy on accessions as determined by the authorities of that institution, a FICTITIOUS [SAMPLE of an Accession Policy Statement](#) is found following Chapter V.

TRANSACTIONS (VISITS) IN



Chapter III. TRANSACTIONS OF INCOMING ANIMALS

Transaction types are addressed separately in Chapters III and IV. A brief explanation is given, describing the information that must be recorded, and special situations are addressed. The user is urged to make notes about unusual transaction circumstances and the outcome of such variations; a precedent is then recorded should similar instances arise.

The transactions detailed in this chapter involve animals that come into the collection. Most animals are new accessions, though there are times when animals return and record files for them already exist. Each animal is treated individually unless group accessioned. Regardless of how an institution's records are set up, the same information is recorded.

NOTE:

- In all of the following transactions "birth" is synonymous with "hatch."
- See Chapter V for a discussion about [hybrids](#).

Regarding ID numbers from other institutions:

- "NONE" is used to indicate that a vendor or recipient did not assign an ID number
- "UNKNOWN" indicates that the recording institution has not been informed of the other facility's number

Author's note, August 2004: Since the publication of the original Manual, the meaning of "NONE" has changed slightly, and now indicates that a) a vendor or recipient did not assign an ID number or b) a vendor or recipient has no record of the specimen.

In CMS/ARKS4, the term "Transactions" = "Visits"

BIRTH

Four types of birth/hatch accessions may be recorded at an institution.

- ANY specimen born or hatched at the recording institution must be recorded as a
 1. birth
 2. stillbirth or premature birth (= abortion)
 3. birth on loan in
- A specimen owned by the recording institution but NOT BORN AT THE FACILITY is a
 4. birth on loan out

Birth/hatch includes any animal born at the recording institution

- of parents who both belong to the recording institution, or
- which, by Breeding Loan Agreement, belongs to the recording institution. (If the offspring belongs to the loaning facility, the transaction is "birth on loan in.")

The following information is recorded for EACH specimen

- specimen ID number assigned by the recording institution
- species (both common and scientific name)
- date of birth, backdating the accession to that date if necessary and including substantiating details
- sire and dam ID number

- If not individually known, list any and all possible parents. Any information that restricts the parental probabilities or gives hints as to likelihood is helpful.

Since ARKS4 allows the recording of multiple parents, all potential parents are added on the Sire and Dam tabs. A note should still be added to provide any supporting information.

For a parent on loan in, primary identification is the recording institution's ID number, with the lending institution recorded and the ID number there included if known.

It is especially important in ARKS4 to record a parent only once -- and use the recording institution's ID and location. The other institution's identity information goes in the note field on the Sire or Dam tab, or on the Notes tab (code SX, Dam/Sire ID Elsewhere). Adding the loaning institution's ID number and mnemonic in the Sire or Dam field causes the program to treat them as additional parents: it CANNOT determine that these are merely different methods of identifying one individual.

- sex. If not yet determined, then "unknown" suffices temporarily. Record the sex, date, and method of determination when known.
- number, location, and date of application of tag, band, tattoo, or transponder
- studbook number(s), if registered

Additional information is also added to the record file.

- information about the birth (e.g., time of day, weather conditions)
- any other information about the specimen which might be of importance, such as medical, behavioral, husbandry comments
- house name

IF A PARENT IS ON LOAN IN, the loaning institution must be notified of the reproductive activity. The report must include the ID number of the offspring, the ID numbers of the parents at both institutions, and ownership information.

CMS/ARKS4 has a helpful feature that creates an e-mail message you can send to the owner of a specimen. The message has standardized format but can be edited to include additional information. Attaching a specimen report for the offspring is also suggested.

If there is a question of ownership assignment according to the terms of a Breeding Loan Agreement, the transaction is entered as a simple birth until the criteria for ownership determination are met.

SPECIAL CASES - BIRTH

Litters that are born in areas inaccessible to keepers (such as bears in dens) or specimens concealed by their mothers (ungulate "hidlers") are accessioned as soon as a birth is confirmed. If the number of young in a litter cannot be immediately determined, at least one offspring is accessioned for the actual or

estimated birth date (not the date found) and other litter-mates are accessioned as their existence becomes known. The accession numbers will not be sequential, but all will have the same birth date. Each record will also have notes about reasons for age estimates and circumstances of discovery.

Example 1: Record created 1 Feb 91 for spectacled bear #91M25, born 15 Jan 91

1 Feb 91 - cub sounds originally heard 15 Jan 91; while mother was feeding, keepers checked den and found 3 cubs instead of single cub (litter-mates are #91M3, #91M26)

Example 2: Record created 14 Apr 91 for axis deer #91M42, born 12 Apr 91

12 Apr 91 — from keeper report: dam seen at feeder with obvious slimmer appearance and enlarged udder; keepers will look for fawn

14 Apr 91 — keepers saw this fawn nursing

In the case of monotremes and marsupials, explicit details of reproductive activity or developmental stage should be included in the record to document age estimates.

Example 3: Record created 10 Feb 91 for wallaroo #91M43, born 3 Jan 91

10 Feb 91 - movement seen in dam's pouch. Keeper records say that copulation by parents occurred between 5 Sep 1990 and 9 Sep 1990. Birth date is estimated by copulation and pouch-movement dates.

Note: See note above about marsupials and monotremes.

STILLBIRTH/ PREMATURE BIRTH (ABORTION)

"Stillbirth is the full-term birth of a dead fetus. Premature birth is the birth before term of a dead or inviable fetus." (AAZPA - ISIS Institution Procedures, second edition).

The following information is recorded for EACH specimen:

- specimen ID number assigned by the recording institution
- species (both common and scientific name)
- date of birth, backdating the accession to that date if necessary and including substantiating details
- sire and dam ID numbers
 - If not individually known, list any and all possible parents. Any information that restricts the parental probabilities or gives hints as to likelihood is helpful.

Since ARKS4 allows the recording of multiple parents, all potential parents are added on the Sire and Dam tabs. A note should still be added to provide any supporting information.

— For a parent on loan in, primary identification is the recording institution's ID number, with the lending institution recorded and the ID number there included if known.

It is especially important in ARKS4 to record a parent only once -- and use the recording institution's ID and location. The other institution's identity information goes in the note field on the Sire or Dam tab, or on the Notes tab (code SX, Dam/Sire ID Elsewhere). Adding the loaning institution's ID

number and mnemonic in the Sire or Dam field causes the program to treat them as additional parents: it CANNOT be determined that these are merely different methods of identifying one individual.

- sex. If not determined, then "unknown" suffices.
- studbook number(s), if registered

By definition, **Death** (deaccession) must be recorded on the same date.

'Premature birth' or 'stillbirth' is selected on the Death Codes menu, which appears when 'Death' is selected on the "Visits" tab.

Additional information is also added to the record file.

- information about the birth (e.g., time of day, weather conditions)
- any other information about the specimen which might be of importance, such as developmental stage

A note about the reproduction is appended to the records of both sire and dam. Included are the offspring's ID number, other parent's ID number, and any other pertinent data. (Computer programs generally accomplish this automatically, but the records-keeper must do this manually in paper systems.)

IF A PARENT IS ON LOAN IN, the loaning institution must be notified of the reproductive activity. The report must include the ID number of the offspring and the ID numbers of the parents at both institutions.

CMS/ARKS4 has a helpful feature that creates an e-mail message you can send to the owner of a specimen. The message has standardized format but can be edited to include additional information. Attaching a specimen report for the offspring is also suggested.

SPECIAL CASES - STILLBIRTH/ PREMATURE BIRTH (ABORTION)

Note that these situations involve DEAD progeny; if the offspring survives a premature birth, the transaction is treated as a birth, noting the developmental stage of the young at birth.

Stillbirths and premature births are accessioned as births since they indicate reproduction. They are recorded to maintain statistical and demographic accuracy and are essential for analysis of populations and life histories. Included are amphibian larvae which fail to metamorphose and fertile reptile and avian eggs which fail to hatch or die during pipping. Also included are fetuses discovered at necropsy of the mother (see sample at left).

Though it may not always be possible to distinguish between stillbirth and premature birth, knowledge of breeding dates and developmental stages of the fetus can give clues. ISIS suggests that if it cannot be determined, then "stillbirth" should be used (AAZPA-ISIS Institution Procedures.)

Necropsy information can also provide indication of which is appropriate. Stillbirths and premature births can also occur to parents on loan in from another facility or loan out from your institution. The holding institution (the facility where the birth occurs) records the birth as a stillbirth or premature birth.

For determining ownership, the stillbirth/premature birth may not count as an offspring since most Breeding Loan Agreements stipulate that the offspring must be viable before ownership is assigned pursuant to the terms of the Agreement.

BIRTH ON LOAN IN

An animal born to a parent on loan at your institution and, under the terms of the loan, belongs to the loaning institution, is known as a **birth on loan in**.

The following information is recorded for EACH specimen:

- specimen ID number assigned by the recording institution
- the specimen ID number assigned by the owner. This is added when known.
- species (both common and scientific name)
- date of birth, backdating the accession to that date if necessary and including substantiating details
- sire and dam ID numbers
 - If not individually known, list any and all possible parents.
 - For a parent on loan in, primary identification is the recording institution's ID number, with the lending institution recorded and the ID number there included if known.

Since ARKS4 allows the recording of multiple parents, all potential parents are added on the Sire and Dam tabs. A note should still be added to provide any supporting information.

Any information that restricts the parental probabilities or gives hints as to likelihood is helpful.

It is especially important in ARKS4 to record a parent only once -- and use the recording institution's ID and location. The other institution's identity information goes in the note field on the Sire or Dam tab, or on the Notes tab (code SX, Dam/Sire ID Elsewhere). Adding the loaning institution's ID number and mnemonic in the Sire or Dam field causes the program to treat them as additional parents: it CANNOT determine that these are merely different methods of identifying one individual.

- sex. If not yet determined, then "unknown" suffices temporarily. Record the sex, date, and method of determination when known.
- number, location, and date of application of tag, band, tattoo, or transponder
- studbook number(s), if registered

Additional information is also added to the record file.

- information about the birth (e.g., time of day, weather conditions)
- any other information about the specimen which might be of importance, such as medical, behavioral, husbandry comments
- house name

THE LOANING INSTITUTION MUST BE NOTIFIED OF ITS OWNERSHIP of the new specimen and supplied with all the information noted above. An ARKS specimen report or similar document is an easy means of accomplishing this. (Also forwarded should be a request for the loaning institution's specimen ID number, which is appended to the recording institution's specimen record when received.)

CMS/ARKS4 has a helpful feature that creates an e-mail message you can send to the owner of a specimen. The message has standardized format but can be edited to include additional information. Attaching a specimen report for the offspring is also suggested.

SPECIAL CASES — BIRTH ON LOAN IN

If ownership of a neonate cannot be assigned until the sex of the offspring is known or other conditions are met, the transaction is treated as a "birth" until ownership is determined. Upon receipt of additional information determining ownership, the transaction can be changed to "Birth on loan in." The transaction is back-dated to the original birth date and notes about the date and reason for ownership determination are included in the record.

Although the owner was notified of the birth when it occurred, assignment of ownership requires a second notification.

BIRTH ON LOAN OUT

An animal born at another facility to parent(s) on loan from the recording institution and which, by Breeding Loan Agreement, belongs to the RECORDING institution is considered a birth on loan out.

The following information is recorded for EACH specimen:

- specimen ID number assigned by the recording institution
- species (both common and scientific name)
- specimen ID number assigned by the holding institution
- date of birth, backdating the accession to that date if necessary and including substantiating details
- sire and dam ID numbers. Primary identification is the recording institution's ID numbers, with the holding institution recorded and the ID numbers there included if known.

Since ARKS4 allows the recording of multiple parents, all potential parents are added on the Sire and Dam tabs. A note should still be added to provide any supporting information.

It is especially important in ARKS4 to record a parent only once -- and use the recording institution's ID and location. The other institution's identity information goes in the note field on the Sire or Dam tab, or on the Notes tab (code SX, Dam/Sire ID Elsewhere). Adding the loaning institution's ID number and mnemonic in the Sire or Dam field causes the program to treat them as additional parents: it CANNOT determine that these are merely different methods of identifying one individual.

- sex. If not yet determined, then "unknown" suffices temporarily. Record the sex, date, and method of determination when known.
- number, location, institution where applied, and date of application of tag, band, tattoo or transponder
- studbook number(s), if registered

Additional information is added to the record file if provided by the holding facility:

- information about the birth (e.g., time of day, weather conditions)
- any other information about the specimen which might be of importance, such as medical, behavioral, husbandry comments

A note about the reproduction is appended to the record(s) of the parent(s) owned by the recording facility. Included are the offspring's ID number, other parent's ID number and institution, and any other pertinent data.

THE HOLDING INSTITUTION MUST BE INFORMED OF THE ID NUMBER ASSIGNED BY YOUR INSTITUTION.

SPECIAL CASES – BIRTH ON LOAN OUT

NOT accessioned are offspring of animals on loan out if the offspring belong(s) to the holding institution by Breeding Loan Agreement. In such cases, the reproductive information is recorded in the record files of the parent(s) at the recording institution (use the ARKS "Special Data/Comments -- Reproductive" section of the parents' records -- see sample at left).

Information recorded is dependent on data supplied by (or extracted from) the holding institution. Information about the birth initially may come indirectly and the records-keeper may need to request information that does not come voluntarily.

TRANSFERS IN

Transactions in which TITLE IS CONVEYED to your institution include:

- **Purchase:** money is paid to the vendor
- **Trade in:** the specimen is received in exchange for a current or future specimen, or for credit of specified value. The latter is sometimes called an open-end trade, or trade-credit.
- **Donation in:** the specimen is transferred as a gift (i.e., gratis)

ARKS4 includes an additional in-coming transaction (visit): **Term-Free Acquisition** -- the specimen is received without recording a specific type of transaction, usually because the terms are not known. This transaction should be reserved for historic specimens, since all current transactions should have known terms.

When a specimen is received for breeding, study, or exhibit purposes but TITLE REMAINS WITH THE VENDOR, the transaction is a "**loan in.**"

For all transfers in, the following information is recorded for EACH specimen:

- specimen ID number assigned by the recording institution
- species (both common and scientific name)
- origination information, including documentation of permits
- Birth location, date of birth, and parentage should be known if the specimen is captive born.
- If the specimen originally came from the wild, record capture location, capture date, and estimated birth date.
- the name of the vendor/lender and the specimen ID number there

- sex. If not yet determined, then "unknown" suffices temporarily. Record the sex, date and method of determination when known.
- date, type, and terms of transaction
- number, location, institution where applied, and date of application of tag, band, tattoo or transponder
- any permit numbers and issuing agencies for permits required for transportation and exhibition
- studbook number(s), if registered

Additional information is added to the record file.

- name of the shipper (transporter) or common carrier (commercial airplane, train, or bus) used
- any other information about the specimen which might be of importance, such as medical, behavioral, husbandry comments
- house name
- any other facilities (including dealers) where the specimen was held should be noted, along with appropriate ID numbers

The vendor/lender must be informed of the ID number assigned by your institution.

If the animal arrives from an institution other than the vendor/lender, notation is made in the record of that location and the ID number there. The sending facility and the vendor/lender are both notified of the assigned ID number.

Any reference to unfamiliar facility names should include the full name and address.

The terms involved in these transactions vary greatly and should be simply stated in the record and important conditions noted. Original documents and the bulk of supporting materials may be filed elsewhere, though relevant copies of materials must be in the specimen's record file. In the case of a loan, a copy of the Loan Agreement should be included in the specimen's record file as well.

DIRECT FROM THE WILD ('WILD CAUGHT' IN CMS/ARKS4)

When a specimen is removed from the wild by the recording institution's own staff, the transaction is termed direct from the wild or scientific collection. The animal comes directly to the recording institution with no other intermediary facility involved, unless for temporary housing or quarantine.

The following information is recorded for EACH specimen:

- specimen ID number assigned by the recording institution
- species (both common and scientific name, who made the determination of such, and on what basis)
- date of transaction (arrival in collection). This could be several days or weeks after the capture date because of quarantine and transport.
- capture information

- capture location, which should be expressed as latitude and longitude. However, a less precise location, such as country, state, or nearby city, is often all that is available.
- capture date
- name and title of collector
- other information (time of day, conditions, etc.)
- age at capture, which may be as vague as "adult" or as specific as "two-week nestling." Who made the age determination and on what basis is also noted.
- sex. If not determined, then "unknown" suffices temporarily. Record the sex, date, and method of determination when known.
- number, location, and date of application of tag, band, tattoo, or transponder
- any permit numbers and issuing agencies for permits required for collection, transportation, and exhibition
- quarantine information. The recording institution must obtain and record results of all procedures and tests run during quarantine and identify the agency involved.

SPECIAL CASES - WILD CAUGHT

Included are eggs collected in the wild and hatched in captivity. Descriptions explaining the egg collection and wild parentage are included in the record files of the specimens which hatch from such eggs.

See also Chapter V, "[Captive-born vs. captive-bred.](#)"

RETRIEVAL / RECAPTURE

These transactions reflect the return to the collection of a specimen that was removed by theft (using "retrieval") or escape (using "recapture"). See [Chapter IV](#) for the removal transactions. Since the specimen may not return to the collection in the condition in which it left, the time away must be documented. The animal may have been bred or contracted disease while away, or there may be a reason to suspect that a different animal was returned. Documentation of absence and return must be part of the record.

Retrieval can also be used when a specimen that was 'released to the wild' is brought back into a collection for some reason. This might occur for many reasons, some of which include the failure of the specimen to adapting to the wild, difficulties found with the release site, or the need for more in-hand information on the specimen before another release. The specimen could also be taken to an institution other than the original releasing institution.

The records-keeper must know at least the following information to identify the record file to be reactivated:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature

The following information is recorded for EACH specimen:

- date of the return (retrieval) or discovery (recapture)
- circumstances of that return or discovery
- any other information, such as condition of specimen, references to court proceedings, etc.

It is **not** recommended that the "theft" or "escape" transactions be deleted. Your records are then less complete and the transaction sequence reported to ISIS via ARKS is disrupted.

Once an ARKS removal transaction is reported, there must be a subsequent re-acquisition to maintain the integrity of the pooled data. The retrieval/recapture re-acquisition should be used in these cases.

LOAN RETURN

When a specimen previously accessioned at your institution is physically returned after being on loan out, the transaction is recorded as a **loan return**. This also applies to offspring resulting from a Breeding Loan and originally accessioned as "birth on loan out." In either case, the basic information about the specimen should already be in the record file from the original accession.

The records-keeper must know at least the following information to identify the record file to be updated:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature

The following **new** information is recorded for EACH specimen:

- date of the current transaction and transaction type
- the borrower's ID number if it was not previously part of the record file
- number, location, institution where applied, and date of application of tag, band, tattoo or transponder
- any permit numbers and issuing agencies for permits required for transportation and exhibition

APPEARED (new in CMS/ARKS4)

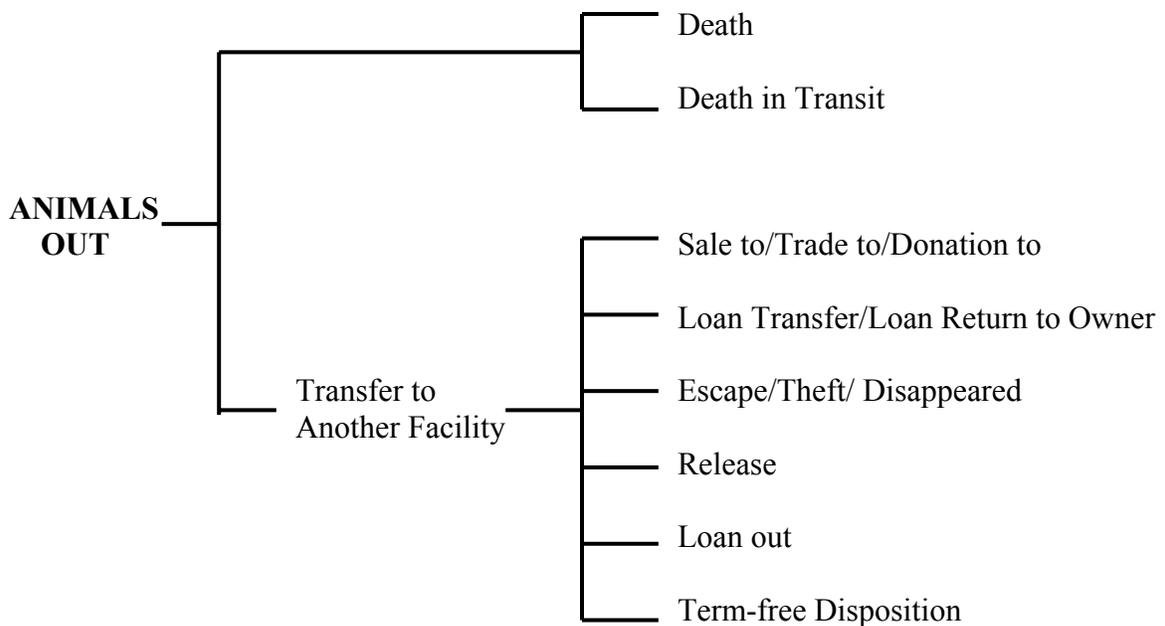
An individual of a species native to the region of the recording institution may sometimes appear in an exhibit of its own volition; some call these specimen 'volunteers'. If this specimen is then accessioned into the collection, the type of 'Visit' used is "appeared".

The following information is recorded for EACH specimen:

- specimen ID number assigned by the recording institution
- species (both common and scientific name, who made the determination of such, and on what basis)
- date of transaction (arrival in collection).

- arrival information (circumstances of the appearance)
- age at appearance, which may be as vague as "adult" or as specific as "two-week nestling." Who made the age determination and on what basis is also noted.
- sex. If not determined, then "unknown" suffices temporarily. Record the sex, date, and method of determination when known.
- number, location, and date of application of tag, band, tattoo, or transponder
- any permit numbers and issuing agencies for permits required for exhibition

TRANSACTIONS (VISITS) OUT



Chapter IV. TRANSACTIONS OF OUTGOING ANIMALS

DEACCESSION vs. DISPOSITION

Deaccession: the process or procedure used to record the removal of an accession from the collection.

Disposition: the physical removal of a specimen from the collection, usually by sale, exchange, transfer, trade, donation, or destruction.

(Both definitions from: Smithsonian Institution Office Memorandum 808)

Compared with the accession process of creating a record file, deaccessioning — the deactivation of record files — is much more simple. So long as the institution retains physical possession of a live specimen **or** legal title to it, the record file remains active. An animal can be removed from the premises **without** being deaccessioned **if** title to the animal is maintained and the specimen is only loaned out; there is no deaccession and the record file remains active. Only after a specimen dies or an institution ships a specimen **AND** conveys title to another facility, does the deactivation process begin.

Deaccessions can be categorized as

1. the DEATH of a specimen, or
2. the PHYSICAL REMOVAL from the premises WITH TRANSFER OF OWNERSHIP

Once all deaccession information is added to the specimen record file, the file is considered inactive and is archived (placed in a safe, but accessible, location). **UNDER NO CIRCUMSTANCES SHOULD THE RECORD FILE BE DISCARDED OR DESTROYED!** The archived material still retains value for management, historic, and legal purposes.

In removal transactions involving another facility, copies of all records (including accession and appropriate medical records) must be transmitted to the receiving institution. Some facilities require that this information be sent in advance with an Animal Transaction Confirmation Form, and in these instances updated records must still be sent with the animal when it is shipped.

DEATH

Death can occur at the recording institution, at a borrowing facility, or anywhere between. It can involve an animal on loan in, as well as a specimen owned by the recording facility.

Regardless of ownership or place of death, the records-keeper must know at least the following information to identify the record file to be deactivated:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature.

The following information is added to the record of the specimen identified by the information above:

- circumstances and date of death, estimating if necessary. If date is estimated, give substantiating information.
- cause of death. This should be required for any studbook or SSP animal, or specimen on loan in, though it is frequently difficult to include at the time of deaccession.
- necropsy information (added at a later time if not immediately available):
 - Provide a necropsy or death number to cross reference between ID number and necropsy file.
 - "Undetermined" or "Unknown" is a valid cause of death.

- Record reasons for euthanasia.

Author's note, August 2004: Beginning with the 24 Jun 2003 version of CMS/ARKS4, a new circumstance of death is available - 'euthanasia: cull'. This is to record a death as a population management tool, differentiated from 'euthanasia', which should be limited to death because of medical reasons.

IF THE SPECIMEN WAS ON LOAN IN, the owner must be notified of the death immediately. Since the carcass of a specimen on loan in belongs to the loaning institution, the Veterinary Department of the recording facility must be aware of what specimens do not belong to your institution. The owner must be consulted before anything is done to the carcass. An ARKS specimen printout containing necropsy findings (or document containing similar information) is a suitable means of formal notification.

The following additional information (which may be required or optional according to institution policy) is also added to the record file:

- method of carcass disposal. Note the specifics if all, part, or samples of the carcass go to another facility. If the specimen was on loan in, the owner must give approval for disposal.
- circumstances leading up to or occurring at the time of death. This information may not be available to the records-keeper, though notes on keeper reports such as "found dead in a.m." or "off feed for 2 days prior" provide more information than no entry at all.

SPECIAL CASES — DEATH

If the death occurred out on loan, the loan agreement is terminated or altered to reflect the new status.

DEATH IN TRANSIT occurs when an animal dies at some point between departure from the sending facility and arrival at the receiving facility. The shipping facility may say, "Title passed to the recipient when the animal left our facility." The recipient may say, "The transaction was never completed because the live animal never arrived." Someone will end up with a carcass to be disposed of and there may be legal ramifications regarding possession.

"Death in Transit" in CMS/ARKS4 is a two-step process and is recorded by both parties. The vendor records the actual removal, i.e. the disposition terms, then a subsequent 'death in transit' disposition; the recipient records the terms of acquisition, then a subsequent 'death in transit' disposition.

TRANSFERS OUT

These transactions assume that legal ownership resides with the recording institution.

NOTE!! YOU CANNOT SELL/ TRADE/ DONATE/ LOAN OR OTHERWISE DISPOSE OF A SPECIMEN THAT YOU DO NOT OWN.

The terms of these transactions vary:

- **Sale:** money is received from the recipient
- **Trade out:** the specimen is sent in exchange for a current or future specimen or for credit of specified value. The latter is sometimes called open-end trade or trade credit.

- **Donation out:** the specimen is transferred as a gift (i.e., gratis)

• ARKS4 includes an additional outgoing transaction (visit): **Term-Free disposition** -- removal without specifying any transaction type, usually because the terms are not known. This transaction should be reserved for historic specimens, since all current transactions should have known terms.

The records-keeper needs to know at least the following information to identify the record file to be deactivated:

- species (both common and scientific name is best)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature

The following information is added to the record of the specimen identified by the information above:

- date of transaction (the date of transfer of ownership, usually the date the specimen leaves the facility). If the date of shipment is different, the specifics are noted.
- type and terms of transaction
- receiving institution and ID number assigned there
- shipper (transporter) or common carrier (commercial airline, train, or bus) used
- if the recipient is a dealer, the ultimate destination of the specimen should be added to the record if it is at all possible to determine
- any permit numbers and issuing agencies for permits required for transportation

The information above (or an ARKS specimen report) is forwarded to the receiving institution. Other information about the specimen should also be sent to the recipient:

- date of birth or acquisition at the recording facility
- if not born at the recording institution, all known previous locations and ID numbers at those locations
- parentage (ID numbers of parents and at what institution) and pedigree
- any other information, such as tag or band information, medical and reproductive history, management notes, etc.

Other paperwork usually accompanies the specimen:

- medical records
- husbandry or diet information (or AAZK Animal Data Transfer Form)
- permits, if required
- paperwork which must accompany the animal(s) during transportation, including Health Certificate and USDA "Record of Acquisition, Disposition or Transport of Animals"

If the receiving institution does not forward an ID number, the records-keeper must request one. This number is appended to the recording institution's specimen record as part of the deaccession process. The process should not be considered complete until the new ID number is included.

If the other party in the transaction is not the actual recipient of the animal, the transaction with that party is recorded but a note of the final destination must be in the record.

LOAN RECALL ('LOAN RETURN TO OWNER' in CMS/ARKS4) / LOAN TRANSFER

LOAN TRANSFER and LOAN RETURN occur when an animal on loan in is sent to another institution at the request, or with approval, of the owner. If the receiving institution is also the owner, this becomes a **loan recall** (ISIS refers to this as "LOAN RETURNED"); if the specimen goes to a third party as a loan, the transaction is a **loan transfer**.

The records-keeper needs to know at least the following information to identify the record file to be deactivated:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature

The following information is added to the record of the specimen identified by the information above:

- date of transaction (the date of the physical move)
- type of transaction
- receiving institution and ID number assigned there
- shipper (transporter) or common carrier (commercial airline, train, or bus) used
- any permit numbers and issuing agencies for permits required for transportation

The information above (or an ARKS specimen report) is forwarded to the receiving institution and to the owner.

In a LOAN RETURN TO OWNER ('Loan Recall' in ARKS3), the above information is sufficient since the owner will already have full information on the specimen. In the case of a LOAN TRANSFER, the following additional information as well as ownership information is sent to the recipient:

- date of birth or acquisition at the recording facility
- if not born at the recording institution, all known previous locations and ID numbers at those locations
- parentage (ID numbers of parents and at what institution) and pedigree
- any other information, such as tag or band information, medical and reproductive history, management notes, etc.

Other paperwork usually accompanies the specimen:

- medical records
- husbandry or diet information (or AAZK Animal Data Transfer Form)
- permits, if required

- paperwork which must accompany the animal(s) during transportation, including Health Certificate and USDA "Record of Acquisition, Disposition or Transport of Animals."

The ID number assigned by the receiving institution must be obtained and recorded. (In a loan recall, the number at the loaning institution will already be part of the record file from the original accession process.) The deaccession process should not be considered complete until the receiving institution's ID number is included.

IN A LOAN TRANSFER, the owner must be sent a complete report, including the ID number at the receiving facility and ***the recipient must be informed of the ownership of the specimen.***

ESCAPE /THEFT /MISSING ('DISAPPEARED' in CMS/ARKS4)

Escape, theft, and discovery that a specimen is **missing** (has '**disappeared**' in **CMS/ARKS4**) are situations in which the details of the physical removal are not usually known. When there is no carcass to confirm death, the records-keeper is guided by keeper reports or animal staff in determining the type of removal.

The records-keeper needs to know at least the following information to identify the record file to be deactivated:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature

The following information is added to the record of the specimen identified by the information above:

- date of transaction (date the disappearance is noted)
- type of transaction. Include all known circumstances, who made the determination, and on what basis.

If the specimen is later found or returned, the removal process is reversed:

- the record is brought back to the active file by the use of the "recapture" (for escape) or "retrieval" (for theft) transactions
- the date and details of the discovery, recapture, or return are added to the record file

NOTE: The removal information is not deleted because the specimen was actually, or presumed to be, absent from the collection during the intervening period. See Chapter III, "[Retrieval/Recapture](#)."

IF THE SPECIMEN WAS ON LOAN IN, the loaning institution must be sent complete information in a timely manner.

RELEASE

A **release** is the deliberate freeing of a specimen into the wild by staff.

This is NOT the same as an **escape**, in which a specimen leaves the collection and returns to "the wild" without intentional intervention by the staff.

The records-keeper needs to know at least the following information to identify the record file to be deactivated:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature.

The following information is added to the record of the specimen identified by the information above:

- date of release
- type of transaction (i.e., release)
- site of release. This information should be as precise as possible. The location may be kept confidential for the protection of the specimen, but the information is recorded.
- any other information about the release can be added to the record file as desired
- any permit numbers and issuing agencies for permits required for transportation or release
- name and title of person who does the release

LOAN OUT

The **loan out** is the only out-going transaction which is not a deaccession. A specimen is moved to another facility for breeding, exhibition, or study purposes, but legal **ownership remains with the loaning institution**. Included are:

- the move of a specimen from the owning facility
- leaving a specimen at a facility subsequent to obtaining ownership from that facility
- subsequent transfers to different facilities

The records-keeper needs to know at least the following information to identify the record file of the specimen involved:

- species (both common and scientific name)
- specimen ID number or some identifier such as a tag, band, or tattoo number, house name, or an identifying physical feature

The following information is added to the record of the specimen identified by the information above:

- date that the specimen leaves the premises
- type of transaction (i.e., loan out)
- receiving institution and ID number assigned there
- shipper (transporter) or common carrier (commercial airline, train, or bus) used
- any permit numbers and issuing agencies for permits required for transportation

The information above (or an ARKS specimen report) is forwarded to the receiving institution. Other information about the specimen should also be sent to the recipient:

- date of birth or acquisition at the recording facility
- if not born at the recording institution, all known previous locations and ID numbers at those locations
- parentage (ID numbers of parents and at what institution) and pedigree
- any other information, such as tag or band information, medical and reproductive history, management notes, etc.

Other paperwork usually accompanies the specimen:

- medical records
- husbandry or diet information (or AAZK Animal Data Transfer Form)
- permits, if required
- paperwork which must accompany the animal(s) during transportation, including Health Certificate and USDA "Record of Acquisition, Disposition or Transport of Animals"

The ID number assigned by the receiving institution must be obtained and recorded; the process of recording the loan should not be considered complete until the receiving institution's ID number is included.

The loaning institution customarily prepares a Loan Agreement, though either party may do so. Authorities of the parties involved must sign (and retain a copy of) the Agreement, ideally prior to shipment. The written agreement safeguards all parties against mistaken assumptions.

Chapter V: MISCELLANEOUS TOPICS and CLARIFICATIONS

KEYS TO THE FILES . . . or how records-keepers know where their information is found.

Record files may be organized in any number of ways in order to meet the needs of different institutions. Each specimen (i.e., each ID number) will have a file (folder) that contains all information pertaining to that specimen, such as identifying information, origination documents, significant dates, current location, etc. Duplicate documents may be held in other locations. A file in the Veterinary Department might contain day-to-day medical information. No matter how these records are filed, they must be easily and quickly accessible.

"Keys to the Files" are listings and descriptions with brief explanations of where to find what. They explain the numbering system(s), who holds what type of files, or who is the source of information. Acronyms and abbreviations used within the institution are defined. A brief manual of records policies and procedures at the institution should be included. Each time a change is made to the system, a copy of the old procedure with dates of usage should be filed to explain past practices to colleagues and successors. Out-dated ISIS manuals should be kept as well to explain how older records were entered, since records-keeping is an evolving process.

BACKDATING

If a transaction occurs several days or more before the records-keeper is notified, the accession is dated as of the actual arrival date. If there is an unusually long time between occurrence and reporting, a note of the recording date is included in the record file.

Example: Record created 1 Feb 91 for spectacled bear #91M25, born 15 Jan 91

1 Feb 91 - cub sounds originally heard 15 Jan 91; while mother was feeding, keepers checked den and found 3 cubs instead of single cub (litter mates are #91M3, #91M26)

LINKAGE

Throughout records-keeping, "threads" of data connect specimens and files within an institution and also between institutions. Verification of several critical pieces of information about a specimen provides the basis for linkage -- the more connections that can be confirmed, the more positive the linkage becomes. (This is one reason for recording all possible information about each specimen.)

Some slight discrepancies in data, such as date of arrival from another facility (accounting for shipping time), changing sex from "unknown" to "male" or "female," or subspecies variations will always exist, but should be investigated as much as possible to keep inaccuracy to a minimum.

Linkage between institutions requires cooperation: the sending and receiving facilities must exchange specimen ID numbers. The most positive linkage occurs when institution B tells institution A: "Your Tasmanian devil ID #1 is now our #2." Linkage involving historic specimens can usually be established with a fair degree of certainty as long as adequate information was recorded at both institutions. If any uncertainty remains when documenting information, a tentative link is all that can be established.

This should be noted in the records with a detailed statement of the findings, on what basis the decision was made, and by whom.

Example: Record of Japanese macaque #77777, received 2 Feb 1972 from XYZ Zoo

12 Feb 1991 - per phone this date with Registrar at XYZ Zoo, this specimen is probably XYZ Zoo #1234; based on their record of specimens removed and our 1972 "Annual Report and Statistics," each zoo indicating only one animal moved - jdm

-----(*Document published by ISIS*)-----

"LINK" Rules Studbooks and ISIS3

15 Jan 1991 - Nate Flesness

The most critical judgement in assembly of studbook - data sets is deciding whether or not the sets of records from two facilities refer to the same individual specimen. The decision facing a studbook keeper is very similar to the decision facing ISIS - which acts as the default international studbook keeper for most species. The decision is easily and confidently made when all of the following are true:

- both facilities report the transfer of one specimen between them,
- One or more reliable specimen identification systems unambiguously and exactly 'link' the reported information from the two facilities,
- the transfer dates are reasonable, and

- there is no important conflicting data from these two or other reporting institutions.

However in the real world we seem to encounter 4 cases:

1. Link made by the facilities- one or both facilities reports an identifier used by the other, such as their Specimen ID (accession number), or the other party's House Name. ISIS tries to encourage member facilities to link most animals, by requiring that they try to report the other parties' Spec ID. When available, such data is a direct indication from the institution(s) that they have linked their records. However, such direct information and lines of responsibility are frequently not available; some institutions do not assign such Specimen ID's, there may be no records showing the other's identifier(s), etc.

2. 'Matching identifiers reported by both facilities - the next-best case is when linkage can be established by matching-up specimen identification systems. When both facilities report specimen identifiers which match exactly such as identical transponder numbers, or tattoos, tags, bands, notches, or even house names, or both describe similar improbable natural or accidental markings, perhaps by way of their house name (and there are no important conflicting data) the facilities are indirectly indicating beyond a reasonable doubt that the specimen is the same one, and their separately reported information can be linked together as the history of one specimen.

3. Strong inference - an assortment of sets of data might support a strong inference that the specimen is the same one. For example, both institutions report transfer of a specimen between them, neither reports the other's Specimen ID, there is little data (and no exact matches) on other identifiers, but each reports only one specimen transferred within a reasonable period of time. Another 'probable' case is when several specimens were shipped and the only linking information available is house names - which are close but not exact - i.e. 'Jonathan' and 'Jon'. Other perhaps similar cases include (1) shipment to a dealer and acquisition from the same dealer of a relatively rare specimen of roughly the same age, matching sex, in a short time interval. or (2) one facility reporting in great detail the transfer to another, but the recipient institution does not respond, neither confirming or denying that they have received the specimen. For links based on strong inference, additional evidence should be considered - i.e. matching sex and/or approximate age adds to the probability, except in notoriously hard-to-tell species.

4. Suspicion - sometimes the available information seems too weak to support linkage, or contains some conflicting information, we may still suspect that a link can eventually be made. For example, if one facility reports the other's Specimen ID, it does not match up, but you notice that it seems to be inverted or might contain a typographical error - we should not link the specimens records, but should instead note our suspicions and re-contact the facilities in hopes of clarification. A similar case occurs when one facility reports an acquisition date before the date of shipment reported by the other.

-----(*End of ISIS document*)-----

TAXONOMY

Taxonomy is the science of classification: categorizing living things according to differentiating characteristics. The chart at left shows the major divisions in the taxonomic system, going from kingdom (the broadest, most general division) to the subspecies (a single kind of living organism). The chart is set up to show how a mammal (Siberian tiger) and a bird (Andean condor) are classified.

Taxonomy is by no means a static study; there are still on-going discussions about how animals should be identified and names are changed occasionally. For convenience in this manual, the ISIS designations are used.

ARKS4 uses an updated taxonomic list. Visit the ISIS web site for a listing of the references used for updates to the CMS Taxonomic List.

SCIENTIFIC / COMMON NAME

When corresponding with another institution, scientific names should be used along with common names so that the other institution will know exactly how the specimen was identified.

If the scientific name has been changed (e.g., the Puerto Rican crested toad, *Bufo lemur*, is again *Peltophryne lemur*, its original designation), a note should be placed prominently in the specimen file stating that the two names are synonymous. This lets the reader know that at some other point in time, records may have been prepared using the other name.

The common name chosen for a species can be quite confusing since animals sometimes acquire very localized names. *Felis concolor* is variously called panther, puma, mountain lion, catamount, cougar, and painter. As with the scientific name, a list of synonyms used for the common name should be included in the record file. Whatever name is chosen, it must be used consistently within the institution.

If there is any doubt as to species, the specimen record needs to document who made the species determination and on what basis. If the specimen was identified differently at a previous or subsequent facility, appropriate notes should be added to the specimen file.

SUBSPECIES AND HYBRIDS

Unless a specimen is known to be of a particular subspecies, identification will usually stop at the species level. Only if there is solid evidence of physical or chromosomal characteristics, pure lineage, or place of capture should a subspecies be designated.

Rarely a specimen arrives that is the result of breeding between two species (e.g., lion X tiger), but more often a hybridization occurs between subspecies (e.g., *Capra falconeri cashmiriensis* sire X *C. f. falconeri* dam). The resulting offspring is not truly the same as either parent and should not be identified as such.

Offspring can be identified only as precisely as the least precisely identified parent. If a breeding is subspecies X subspecies or subspecies X species, the offspring cannot be subspeciated. In the *C. falconeri* example, the offspring would be *C. falconeri*, no subspecies.

Author's note, August 2004: In CMS/ARKS4, the user enters the correct taxonomic name of the specimen, not the taxon of the dam, as was done in ARKS3. The program will ask for confirmation of the taxonomic names of the parents; indicate to accept them, then using the criteria above, record both the 'Sire taxon' and 'Dam taxon' on the Identifiers tab. Hybrids can be recorded at the family level, but 'species hybrid' must be selected since there is currently no correct designation for a higher level hybrid.

Care must be taken that this designation continues correctly. This is particularly critical if the facility also houses specimens of the same species but different or undetermined subspecies. The taxon used by a vendor should be accepted until and unless good reason is found for a change in classification (which change is then fully documented in the specimen record.)

PARENTAGE INFORMATION

When parents of an animal born in the collection cannot be identified, possible parents should be noted, listing those males which could have sired (backdating gestation time) and females which could have given birth. By so listing the possible parents, those animals not part of the collection at the time, those not housed together, and those not of breeding age are eliminated from the specimen's genealogy.

Since ARKS4 allows the recording of multiple parents, all potential parents are added on the Sire and Dam tabs. A note should still be added to provide any supporting information.

Parents of animals born at the recording institution are identified by the ID number assigned by that institution. For parents on loan in, the lending institutions and ID numbers there are also recorded. When transmitting information to an institution that loaned one or both parents, the parental ID numbers at both the recording and loaning institutions should be used.

It is especially important in ARKS4 to record a parent only once -- and use the recording institution's ID and location. The other institution's identity information goes in the note field on the Sire or Dam tab, or on the Notes tab (code SX, Dam/Sire ID Elsewhere). Adding the loaning institution's ID number and mnemonic in the Sire or Dam field causes the program to treat them as additional parents: it CANNOT determine that these are merely different methods of identifying one individual.

ANCESTRY

Ancestry, or family lineage, is a request frequently made of records-keepers. When replying, provide as complete a genealogy as you are able, including a pedigree on the subject specimen, and any and all information you have on the origins of the specimen's ancestors.

Genealogies help complete histories. Should you receive or hear about ancestral information which you know other institutions lack or are seeking, provide it to them at your earliest convenience.

CAPTIVE-BORN vs. CAPTIVE-BRED

While most captive-born animals today are also captive-bred, the two terms are not synonymous. Captive-born merely means born in a captive environment. Captive-bred describes an offspring that results from the mating of two captive animals, even if the now-captive parents were both born in the wild.

The following instances of wild-bred, but captive-born animals, may be encountered by a records-keeper:

- the birth/hatch of an animal whose dam was impregnated in the wild, but bore her offspring after capture. One-half of the genes of the captive-born offspring are from an unknown wild sire.
- the removal from the wild of eggs which were laid by a female that was not captured. Both parents are unknown and each offspring is considered a genetic founder - just as is any wild-caught animal which reproduces in captivity. (A founder is an animal that becomes the origin of a traceable genetic line.)

All pertinent details regarding the parentage of such offspring must be in the offspring's record file.

SHIPPING PAPERS

"Shipping papers" are documents that accompany an animal in its move to another facility. Some forms will have been sent prior to the actual shipment, while other forms must accompany the specimen. Since regulations vary widely according to the species being moved, appropriate state, federal, or international authorities should have been contacted well in advance of the shipping date to obtain approval for the move.

Mammal shipments within the U. S. must be accompanied by the following:

- USDA Veterinary Services "Record of Acquisition, Disposition or Transport of Animals" (VS 18-20)
- a health certificate (e.g., American Association of Zoo Veterinarians Standard Certificate of Veterinary Inspection)

- a shipping label meeting USDA directives
- required permits, whether originals or copies. These may include state, federal or international documents.

The above documents are not currently required for other classes of animals, but are recommended.

An ARKS specimen report or similar information should also accompany the specimen. We also recommend including the American Association of Zoo Keepers Animal Data Transfer Form since it can provide insight to the animal's behavior, dietary needs, etc.

EDITING RECORDS

Records can and should be edited to reflect changes that alter original entries, such as new tag/band, determination of sex, etc. In these cases, the date of the change and explanation for the change are recorded, and depending on the type of information, the original entry is also retained.

LOAN, PURCHASE, AND TRADE AGREEMENTS

Loan Agreements, Purchase Agreements, and Trade Agreements are legal contracts, stating in writing the transaction terms and conditions which the parties agree to. The agreements usually involve two parties, but the inclusion of a third party is not unusual. All parties named in the Agreement sign it.

The party initiating the transaction usually prepares the Agreement, though either party may do so.

SECURITY

The safe-keeping of records is paramount. Hazards such as vermin, fire, flood, light, erasure, and vandalism are realities. Additionally, the integrity of the data must be ensured. To safeguard against such hazards we recommend the following:

- If possible, maintain paper files utilizing archival quality materials. Fire-proof files and dry/cool storage away from direct sunlight is recommended.
- For computerized records, maintain regularly up-dated back-ups on diskettes in at least two different and physically separated locations. Diskettes must be safeguarded from heat, moisture, magnetism, and physical damage.
- Only authorized personnel should be able to make, change, or delete information. Precautions that can be taken include the use of indelible ink for hand-written records and computer access limited by the use of a password.

It is recommended that in addition to duplicate diskettes, hard copies (printouts) of specimen reports also be made at regular intervals and safely maintained with other paper records.

SAMPLE ACCESSION POLICY STATEMENT

The following is a **FICTITIOUS SAMPLE of an Accession Policy Statement.**

Remember that this is only a **SAMPLE.**

Each point will vary with each facility. It carries no implication that facilities include any or all points noted; it is merely to show form and possible content.

WHAT IS ACCESSIONED?

The following are accessioned into the Zoo collection:

- any specimen born/hatched at the Zoo, regardless of ownership
- specimens born at other facilities and deemed to be property of the Zoo by terms of a Breeding Loan Agreement
- specimens which arrive from another location (including captures from the wild) and become part of the collection. Included are specimens which become property of the Zoo and those which are only on loan in (ownership is not transferred to the Zoo)
- all mammalian premature births (abortions) and stillbirths, avian and reptilian eggs that contain developing embryos and that fail to hatch, and amphibian larvae that fail to metamorphose

Exceptions to any of the above are not accessioned into the Zoo collection. Data on the following animals is not maintained as accession records; however, the appropriate authority or department still must maintain complete information.

- Education Department animals - records kept by Education Department
- animals brought in under rehabilitation permits. Records of accepted animals must be maintained by the permit holder (if an individual) or a person designated by the Zoo (if the Zoo holds the permit)
- animals placed here by governmental agencies while awaiting legal proceedings (regardless of time required for such). Once a case involving such an animal is resolved, ownership might be transferred to the Zoo and the specimen accessioned, or the specimen might be removed from the premises. Until disposition is determined, data about these specimens is recorded by the records-keeper in the "For-the-Record" file - which must include all information necessary should the specimen ultimately be accessioned into the collection.
- animals that are quartered here on route to some other facility and remain under the care of the shipper/sender - keeper records should document what type of animal, the owner/shipper, and the source and destination
- feral and wild animals which live on Zoo grounds - no records are kept
- animals purchased for immediate use as feed stock - no records are kept

TYPES OF ACCESSIONS

Individual Accession. All animals individually identifiable will be accessioned individually. Whenever possible, members of group accessions will be removed from the group record and accessioned individually when they can be specifically identified by markings, tags, or other identifiers.

Group Accession. Group accessions may be used for species or colonies in which members are not individually, genetically managed and which generally reproduce at high levels.

Example a): small rodents kept in colonies, e.g., Cairo spiny mice — x.x adults are placed in one enclosure and remain there with no manipulation of breeders or selected removal of animals.

Example b): birds, reptiles, or amphibians that:

- deposit eggs over a protracted period of time, and
- the young that are from the same parents, e.g., young-of-the-year of a group of green/black poison arrow frogs.

WHEN SPECIMENS ARE ACCESSIONED

Specimens born/hatched at the Zoo:

- most mammals are accessioned at birth (natural or surgical). Marsupials and monotremes, however, are accessioned when they first leave the pouch. Notes about the date of appearance in the pouch will be recorded and added to the new record when accessioned.
- birds and reptiles are accessioned at complete emergence from the egg or at birth
- amphibians are accessioned at full metamorphosis
- non-viable offspring (premature births, stillbirths, and embryos which die in the egg) are accessioned when discovered
- offspring discovered at some later date are accessioned as of the estimated birth date. Include notes about circumstances of discovery and reasons for giving age estimates.

Animals that come from another source are accessioned when the animal arrives on grounds or when legal title to a specimen remaining elsewhere is conveyed to the Zoo.

PROCEDURE FOR ACCESSIONING (consult manual for specifics)

1. Information is gathered from all available sources and compiled on the "Daily Report Sheet"
2. Numbers are assigned sequentially to each new specimen according to the current numbering system:
 - a. for animals born here or that are direct from the wild, number males of a species first, then females, then specimens of undetermined sex
 - b. animals from other facilities are numbered in the same order as the other facility numbered them
3. The information is transferred to:
 - a. a new medical card, which is forwarded to the Veterinary Department
 - b. the appropriate species page in the Species Binders

c. ARKS. Specimen reports are sent to keepers and any other institutions involved.

WHO MAKES DECISIONS ABOUT ACCESSIONS?

Curators decide what animals are made part of the collection, under what accession type (individual or group), and transaction terms (i.e., trade, purchase, loan).

[End of Sample Accession Policy]

SUGGESTED RESOURCES

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Additionally, depending on each collection's species contents, most if not all IUCN Red Data Books and IUCN Action Plans will prove very useful.

ACRONYMS & ABBREVIATIONS

AAAS American Association for the Advancement of Sciences

AABGA American Association of Botanical Gardens and Arboreta

AAM American Association of Museums

AAZK American Association of Zoo Keepers

AAZPA see AZA; American Association of Zoological Parks and Aquariums

AAZV American Association of Zoo Veterinarians

ACS Antarctic Conservation Strategy (prepared by IUCN)

ADB Asian Development Bank

AERSG African Elephant and Rhino Specialist Group

AfDB African Development Bank

AHA American Humane Association

ALF Animal Liberation Front

APHIS Animal and Plant Health Inspection Service

API Animal Protection Institute

APL Animal Protection League

ARAZPA Australasian Regional Association of Zoological Parks and Aquariums

ARC Animal Rights Coalition

ARKS Animal Record Keeping System

ASPCA American Society for the Prevention of Cruelty to Animals

AWF African Wildlife Foundation

AZA American Zoo and Aquarium Association

AZDANZ Association of Zoo Directors of Australia and New Zealand

AZH Association Zoological Horticulture

BGCS Botanic Gardens Conservation Secretariat of IUCN

BLM Bureau of Land Management (of the USDI)

BMZ Bundesministerium für Wirtschaftliche Zusammenarbeit (Federal Ministry for Economic Cooperation), Federal Republic of Germany

BOSTID Board on Science and Technology for International Development of National Research Council

CAP Conservation Assessment Program

CATIE Centro Agronomico Tropical de Investigacion y Ensenanza (Tropical Agricultural Research and Training Center, Costa Rica)

CAZPA Canadian Association of Zoological Parks and Aquariums

CBSG Captive Breeding Specialist Group

CCAMLR Convention on the Conservation of Antarctic Marine Living Resources

CCO Chief Conservation Officer (IUCN)

CDC Conservation Data Center

CET Commission on Education and Training (IUCN)

CEPLA Commission on Environmental Policy, Law and Administration (IUCN)

CGIAR Consultative Group on International Agricultural Research

CI Conservation International

CIDA Canadian International Development Agency

CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora

CIPRA Commission Internationale pour la Protection des Regions Alpines (International Commission for the Protection of Alpine Regions)

CMEA Council for Mutual Economic Assistance

CNPCA Commission on National Parks and Conservation Areas of IUCN

COE Commission on Ecology (IUCN)

COGBAZ Council of Governing Bodies of Australasian Zoos

CPR Captive Propagation Rescue

CRC Conservation Research Center (of the National Zoological Park at Front Royal)

CREW Center for Reproduction of Endangered Wildlife (of the Cincinnati Zoo)

CSD Commission on Sustainable Development (IUCN)

CU Communications Unit (IUCN)

CWF Canadian Wildlife Federation

DANIDA Danish International Development Agency

DGO Director General's Office (IUCN)

DICE Durrell Institute of Conservation and Ecology

ECAZA European Community of Zoological Parks and Aquariums

ECE Economic Commission for Europe (UN)

ECNAMP Eastern Caribbean Natural Area Management Program

EEC European Economic Community

EEP Europaisches Erhaltungszucht Programm

EIA Environmental Impact Assessment

ELC Environmental Law Centre of IUCN

EPA Environmental Protection Agency

ESA Ecologically Sensitive Area

ESA Ecological Society of America

FAO Food and Agriculture Organization of the United Nations

FASEB Federation of American Societies for Experimental Biology

FFA Fund for Animals

FIC Founder Importance Coefficient

FINNIDA Finnish International Development Agency

FoA Friends of Animals

FOD Field Operations Division (IUCN)

FNNPE Federation of Nature and National Parks of Europe

FRG Federal Republic of Germany

GATT General Agreement on Tariffs and Trade

GDP Gross Domestic Product

GEMS Global Environment Monitoring System of UNEP

GIS Geographic Information System

GLT Golden lion tamarin

GMPWG Global Management Plan Working Group

GNP Gross National Product

GRID Global Resource Information Database

GSA General Services Administration

GTZ Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation)

ha hectare

HSUS Humane Society of the United States

IATA International Agency for Transportation of Animals

IBAMA Instituto Brasileiro de Recursos Naturais Renováveis e Meio Ambiente (Brazilian Institute of Renewable Natural Resources and Environment)

IBPGR International Board for Plant Genetic Resources

IBRD International Bank for Reconstruction and Development

ICALPE International Centre for Alpine Environments

ICBP International Council for Bird Preservation

ICIMOD International Centre for Integrated Mountain Development

ICOMOS International Council on Monuments and Sites

ICONA Instituto Nacional para la Conservación de la Naturaleza (Spain)

ICSU International Council of Scientific Unions

IDA International Development Association

IDB InterAmerican Development Bank

IEEP Institute for European Environmental Policy

IFAW International Fund for Animal Welfare

IFTF International Fur Trade Federation

IGBP International Geosphere Biosphere Project of ICSU

IGBR International Geosphere and Biosphere Program

IIASA International Institute of Applied System Analysis

IIED International Institute for Environment and Development

IMAG Invertebrate Management Advisory Group

IMATA International Marine Animal Trainers Association

IMF International Monetary Fund

IMFPG Indonesian/ Malaysian Fauna Propagation Group

IMO International Maritime Organization

IMS Institute for Museum Services

INFOTERRA International Register for Sources of Environmental Information (UNEP)

INTECOL International Association for Ecology

IPAL Integrated Project on Arid Lands (Kenya)

IPCC International Panel on Climate Change

IPPL International Primate Protection League

IRRI International Rice Research Institute (Philippines)

ISIS International Species Information System

ITTO International Tropical Timber Organization

IUCN International Union for Conservation of Nature and Natural Resources

IUDZG International Union of Directors of Zoological Parks

IWC International Wildlife Coalition

IWRB International Waterfowl and Wetlands Research Bureau

IZY International Zoo Yearbook

JAZGA Japanese Association of Zoological Gardens and Aquariums

JMSG Joint Management Species Group

JWPT Jersey Wildlife Preservation Trust

LTM Lion tailed macaque

MAB Man and the Biosphere Programme (IUCN)

MAP Museum Assessment Program

Marine Coastal and Marine Conservation Programme (IUCN)

MEDARKS Medical Animal Records Keeping System

MFG Madagascar Fauna Propagation Group

MMF Marine Mammal Fund

MMIG Marine Mammal Interest Group

MMPA Marine Mammal Protection Act

MOP Memorandum of Participation (in the SSP program)

MS Manuscript

MVP Minimum Viable Population

NAS National Academy of Sciences

NAUI National Association of Underwater Instructors

NCS National Conservation Strategy

NCWCD national Commission for Wildlife Conservation and Development (Saudi Arabia)

NEA National Endowment for the Arts

NEH National Endowment for the Humanities

NESDIS National Environmental Satellite, Data, and Information Service

NFRZG National Foundation for Research in Zoological Gardens (Netherlands)

NG New Guinea

NGO Non-Governmental Organization

NIC National Institute for Conservation

NIH National Institutes of Health

NMFS National Marine Fisheries Services

NOAA National Oceanic and Atmospheric Administration

NOAH National Online Animal Histories (European version of SPARKS)

NORAD Norwegian Agency for International Development

NPS National Park Service (of the USDI)

NSF National Science Foundation

ODA Overseas Development Agency of the United Kingdom

OECD Organisation for Economic Co-operation and Development

ORCA Regional Office for Central America (IUCN)

ORSTOM Institut français de recherche scientifique pour le développement en coopération

OSI Office of Scientific Integrity (of the NIH)

OTA Office of Technology Assessment of the US Congress

PADU Protected Areas Data Unit of WCMC

PAG Joint IUCN-WWF Plant Advisory Group

PCBs Polychlorinated biphenyls

PETA People for the Ethical Treatment of Animals

PFC Population Founder Coefficient

Plants Plants Conservation Programme (IUCN and WWF)

PNRP Population and Natural Resources Programme (IUCN)

PSU Publications Services Unit (IUCN)

PTEQ (correction: see PPEQ)

PPEQ Post Entry Quarantine

PVA Population Viability Analysis

Ramsar Convention on Wetlands of International Importance especially as Waterfowl Habitat

RDB Red Data Book of IUCN

RSPB Royal Society for the Protection of Birds

SAARC South Asian Association for Regional Cooperation

SADCC Southern African Development Coordination Conference

SAREC Swedish Agency for Research Cooperation with Developing Countries

SAVE Save African Endangered Wildlife Foundation

SCAR Scientific Committee on Antarctic Research

SCB Society for Conservation Biology

SCE IUCN Service in Conservation Education (proposed)

SCMU Species Conservation Monitoring Unit (WCMC)

SCOPE Scientific Committee on Problems of the Environment (ICSU)

SIDA Swedish International Development Authority

SMCC Species Management Coordinating Council (of the ARAZPA and COGBAZ)

SMP Species Management Programme (the Australasian version of SSP)

SPARKS Single Population Analysis and Record Keeping System

SPMCA Small Population Management Advisory Committee

SPREP South Pacific Regional Environment Programme

SSC Species Survival Commission of IUCN

SSP Species Survival Plan

SSPSC Species Survival Plan SubCommittee (of the AAZPA, WCMC; no longer exists)

TAG Taxon Advisory Group

TFAP Tropical Forestry Action Plan

TNC The Nature Conservancy

TPU Threatened Plants Unit

TRAFFIC Trade Records Analysis of Flora & Fauna in Commerce

TRF Tropical Forests Programme (IUCN)

UN United Nations

UNDP United Nations Development Programme

UNEP United Nations Environment Programme

Unesco United Nations Educational, Scientific, and Cultural Organization

UNFPA United Nations Fund for Population Activities

USAID United States Agency for International Development

USDA United States Department of Agriculture

USDI United States Department of Interior

USFWS United States Fish and Wildlife Service

USGCRP United States Global Change Research Program

USGS United States Geological Survey (of the USDI)

USMAB United States, The Man And the Biosphere Program

USNPS United States National Park Service

VASP Viability Analysis and Survival Planning

WCED World Commission on Environment and Development

WCI Wildlife Conservation International

WCMC World Conservation Monitoring Centre

WCMC Wildlife Conservation Management Committee

WCS 90s Revised and Updated Version of the World Conservation Strategy

Wetlands Wetlands Conservation Programme (IUCN)

WHO World Health Organization

WMA Wildland Management Area

WMO World Meteorological Organization

WNRM Women in Natural Resources Management Programme (IUCN)

WRI World Resources Institute

WTMU Wildlife Trade Monitoring Unit

WWF World Wide Fund for Nature (previously World Wildlife Fund, and still World Wildlife Fund in the United States)

ZSM Zooresearch Studbook Management (European computer studbook manager)

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- End of -

**ANIMAL
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