Zoo Research Guidelines

Research Sampling Guidelines
Also in this series:


Research Sampling Guidelines for Zoos

These guidelines are meant to be of assistance to zoo staff, scientists and students planning a study on zoo animals. These guidelines have been reviewed by a Home Office representative and approved by BIAZA’s Conservation and Animal Management Committee. Words in italics are direct Home Office terminology. The guidelines will be reviewed and updated, as necessary, on a regular basis.

The guidelines are meant to assist zoo staff, scientists and students planning a study on zoo animals. A Home Office representative has reviewed these guidelines, but each inspector has the responsibility of interpreting the Home Office regulations themselves. We have not included regulated procedures, for which a Home Office license is needed and we do not recommend that your research in zoo goes down this route.

The BIAZA Research Group is happy to provide further advice and support in relation to research.

The Home Office Animals (Scientific Procedures) Act 1986 regulates “any experimental or other scientific procedure applied to a protected animal which may have the effect of causing that animal pain, suffering, distress or lasting harm”.

A protected animal is any living vertebrate, other than man. This includes mammals, birds and reptiles from halfway through gestation or incubation periods and fish and amphibians from the time at which they become capable of independent feeding. If following or during the course of a procedure performed for scientific purposes on an immature form, the animal reaches a stage of development at which it becomes a protected animal, it is treated as one. Similarly, if a procedure causes pain, suffering, distress or lasting harm to a fetus or immature form at or beyond the stage at which it becomes protected, it is regarded as a regulated procedure, irrespective of any effect on the parent animal. It should be noted that all cephalopods should also be considered as protected animals, though the Animals (Scientific Procedures) Act 1986 only currently includes Octopus vulgaris.

Death is defined as the permanent cessation of circulation or the destruction of the brain, which is not complete in decerebrated animals.

A regulated procedure is any experimental or other scientific procedure, which may have the effect of causing a protected animal pain, suffering, distress or lasting harm. These terms include death, disease, injury, physiological or psychological stress, significant discomfort or any disturbance to normal health, whether immediately or in the long term. This remains the case even if the result is mitigated or prevented by anaesthetics or other substance to sedate, restrain or dull perception, by prior decerebration or other procedure for rendering the animal insentient.

Ringing, tagging or marking of an animal or any other humane procedure for the sole purpose of enabling an animal to be identified is not a regulated procedure if it causes only momentary pain or distress and no lasting harm. Procedures carried out for the purposes of recognised veterinary, agricultural or animal husbandry practice are not regulated, if carried out for the benefit of the animal. For example, taking blood or other tissue samples for diagnosis and giving established medicines by injection are recognised veterinary procedures, if done for the
benefit of the animal. Husbandry practices, which may cause pain, like castration, are not regulated procedures unless they form part of a scientific study.

Categories of sampling have been divided into
1. observational
2. material collection

1. Observational sampling

Simply observing a situation:
Taking a situation that is legal under the Zoo Licencing Act and making changes that do not contravene the Zoo Licencing Act or become a Home Office Regulated Procedure and observing the difference in behaviour is allowed. Examples of changes include substrate, furniture, diet, light regime, enrichment device addition, behavioural training and routine. An example of a situation involving a regulated procedure would be studying factors influencing aggressive behaviour, whereby manipulation would increase the likelihood of aggressive contact. That is, observational sampling that would expect a significant chance of the subject experiencing pain, suffering, distress or lasting harm would involve a regulated procedure. Similarly manipulation of the diet such that an animals is deprived of an essential dietary component would require a Home Office licence.

2. Material collection
   a. corpse
   b. live animal

a. Corpse
An autopsy is required/desired of most zoo animal deaths and liaison with the pathologist is necessary for collection of tissue and organs. Some animals, e.g. primates, may be more difficult due to zoonoses that are particularly harmful to humans.

b. Live animal
Some material can be obtained during a health check or recognised procedures. It must be clear and defensible that the sample is to be taken for a genuine veterinary purpose of direct benefit to the animal or its group. The owner’s informed consent must be obtained first.

Restraint of an animal can be recognised as undue stress under Home Office regulations. The type of restraint constituting a regulated procedure, if used for a scientific purpose, includes chemical (e.g. anaesthesia) and metabolic cages. Examples of material include some blood taken when blood sampling is done for a health check. It is best taken by the vet to avoid problems of responsibility and the goal for the blood must be clear. This affects how the blood sample is handled for storage, e.g. spun to draw off serum and stored at –80C.

The volume/type of sample should be commensurate with the veterinary purpose with only a small proportion (no more than 10% of the sample being taken for the veterinary purpose) being used for the secondary, research purpose. The sample collection must be taken at the time determined for the primary purpose (i.e. veterinary health check) and not changed to suit the secondary, research purpose.
Hair (from a non sensitive area of the body) and feathers (non flight feathers) can be collected under these criteria, e.g. when sexing a bird but feathers cannot be plucked for genotyping purposes. Skin samples can be obtained by, for example, obtaining the plug when ear tagging, but ear marking must be the method of choice and not used because this method would provide a source of skin which could be used for a scientific purpose. It should be noted that amphibia and fish can be very stressed on handling and there is the danger of damage to their thin skin and the introduction of fungal infection by taking skin swabs. If there is any doubt about the above please contact the Home Office for guidance.

BIAZA Research Group
10th February 2002