

## Should captive wild animals be used in research institutions?

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Yes! They have since long been there.

Most talked about and awaking sometimes very strong feelings is the use of primates in medical research. However, they are sometimes hard to replace as in the case of HIV/Aids research. The number of monkeys used for this purpose is very low compared with the total number of wild, captured animals used in different research institutions.

In fact wild or semi-domesticated animals are sometimes used to study the susceptibility to various infectious agents;

- 1: Zoonotic diseases, i.e., tularemia (Mörner, 1994), leishmaniosis, brucellosis, antrax, hemorrhagic fevers etc. or diseases affecting several animal species (Bornstein, 1995).
- 2: Discases known or suspected to be transmissible from wild animals to domestic animals, such as malign catarrhal fever, bovine virus diarrhoea, trypanosomiasis etc.

These investigations may have very different goals, such as basic research, studing details of the microbiological agent, vaccine production, the epizootiology of the disease and finally the impact on population dynamics. They are mainly performed in order to protect man as well as domestic animals and the wild animal populations.

Most experiments involving wild animals are population studies and ethology studies where the manipulation and capture and keeping the animals is very limited.

Research involving wild caught animals and semi-domesticated animals is, in Sweden, governed by the same provisions and general recommendations, as is the use of animals specifically bred for scientific purposes, and the animal protection act also applies to wild or semi-domesticated animals kept in captivity. Hence, every investigation which includes the restraint or manual handling of wild or semi-domesticated animals has to be evaluated by ethical committees or by an ethical committée.

Research using wild animals is sometimes undertaken in order to protect endangered species (Mörner et al., 1988). Research is also performed in order to

vaccinate wild animals and thus controlling a disease that may be dangerous to animals as well as men. An example of that is the combating of rabies in central Europe and not at least, some years ago in Finland (*Workshop on Arctic Fox rabies*, 1990). Extensive work and experimental work can also be put into the study of parasitic infestations in wild animals in order to understand the life cycle of the parasites (Anderson, 1982), their impact on the animals and the possibility to control a disease (Steen, 1991) (Figs 1-2). Large investigations are also made on other specific diseases of wild animals, such as the studies on a wasting syndrome in moose, just now going on in Sweden. The ultimate goal is of course, if possible, to

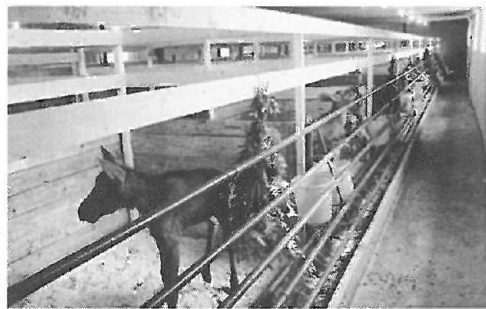


Fig. 1. Moose calves used for the study of *Elaphostrongylus alces* in moose. (Photo M. Stéen).



Fig. 2. Blood sampling from moose calf. (Photo B. Ekberg).

diminish the impact of and in rare cases (such as rabies) to free the wild population of these diseases. In order to obtain information regarding the effects on environmental pollution caused by chemicals or radioactive substances, animals are also tested, sometimes killed, sometimes captured and sampled. Numerous studies are using wild animals as experimental subjects studying population dynamics, migratory patterns etc. in which individuals require some form of monitoring or surveillance. This means that animals are radiocollared, kept in large fenced areas, tagged or painted for identification, while other studies may require that the animals are kept continuously or intermittently under total control in boxes or stables. The impact of these measures is dependent of the kind of animal used, the animal's ability of perception and of course how tamed they are. Wild caught monkeys may, even when kept under ideal conditions, be under a varying but permanent stress depending on how tamed they are and how much they respect the care-taker as the flock leader, whereas wild caught frogs kept in a large aquarium have a nearly ideal situation, with plenty of food and no stressful threats.

Examples of wild animals used in experimental research in Sweden during 1994 are moose (*Alces alces*), roedeer (*Capreolus capreolus*), reindeer (*Rangifer tarandus*), fox (*Vulpes vulpus*), blue fox (*Alopex lagopus*), door mouse (*Muscardinus avellanarius*), bats (*Chiroptera* spp.), tree frog (*Hyla arborea*), squirrel (*Sciurus sciurus*) and great tit (*Parus major*).

Most research performed on wild animals is non-invasive and without the use of restraint. However, animals may be killed for the removal of organs, or parts of organs, or be exposed to invasive and restraint methods. Still, as most research is performed in order to increase the knowledge about wild animals or for the treatment of animals or the protection of endangered species, these experiments are pretty well recognized/accepted by the public. Wild or semi-domesticated animals may be used in the study of their diseases and diagnosis. Sometimes experimental models are created where small laboratory animals, such as mice, are used in order to study the disease of larger mammals (Rehbinder et al., 1978, Rehbinder et al., 1978) (Fig 3). Wild animals are utterly seldom used in the development of pharmaceuticals and vaccines or used in toxicology, education or training and the production of biological products.



Fig. 3. Reindeer used to investigate *kerato-conjunctivitis* in reindeer. (Photo C. Rehbinder).

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