

# **Course- FRW- 602 Wildlife Management & Research**

## **Course Instructor; Dr. Sangam Khalil** **Dept. Forestry Range & Wildlife** **Management**

### **10<sup>th</sup> Lecture**

#### **Captive management and utilization ...Captive breeding programs**

##### **What is captive breeding?**

Captive breeding is the process of breeding animals outside of their natural environment in restricted conditions in farms, zoos or other closed facilities. The choice of individual animals that are to be part of a captive breeding population, and the mating partners within that population, are controlled by humans.

Captive breeding is generally carried out for one of these main purposes:

1. To produce animals for commercial purposes (pets, food, fibre, medicine, and other human uses).
2. To produce animals for zoos, aquaria, research institutions, and other public facilities.
3. To increase captive population numbers of threatened or endangered species. In some cases, these individuals are part of a management programme aimed at eventually reintroducing captive-bred animals into wild habitats and populations. In other cases, captive facilities claim to be breeding animals for such purposes -but the animals may not be suitable - or they are not part of a legitimate conservation and management programme.

This position statement considers the risks/values of captive breeding programmes to conservation efforts to boost threatened species numbers in the wild. The focus of this position statement is on rare, threatened, and endangered species. There are many important and valid concerns related to the welfare and husbandry of animals in captivity, but these are not the subject of this statement, nor are they the focus of WWF's work.

##### **Is captive breeding a useful conservation tool?**

WWF considers captive breeding of rare, threatened, or endangered species, with the aim of eventual reintroduction to the wild, to be a "last resort" strategy. It is exceedingly difficult and must be part of a scientifically-based management plan for the species, working closely with the range country government authorities. It is also expensive, and should not be seen as a substitute for in-situ efforts, except in rare circumstances. Captive situations may interfere with the behavioural development of animals by removing them from natural predators and prey. Furthermore, having captive populations

of animals does not solve underlying problems of habitat destruction, which are often one of the key causes of the species' decline.

Captive breeding programmes should never be seen as a substitute for in-situ conservation of a species, and can only provide positive benefits for species conservation if designed and applied as part of a science-based conservation management plan for the species.

This means ensuring that maintenance and possible introduction of captive animals is an appropriate long-term strategy for the species, that there is appropriate habitat for reintroduction, and managing this habitat to ensure that threats such as poaching, building damaging infrastructures such as roads or dams, or conflicts with local communities are mitigated. Without such management plans, any introduction of captive animals will be undermined, as these threats will lead to high levels of mortality of the reintroduced animals.

Captive breeding programmes may act as a research platform for zoologists, veterinarians and others to conduct research designed to enhance understanding of the biology of the species. In these cases, such research may yield invaluable information to inform conservation efforts. However, removal of animals from the wild for captive breeding must not endanger the survival of already vulnerable wild populations. Maintenance of zoo and aquarium populations may be appropriate for research and public education, but should not be seen as a panacea for the hard work of conservation in the field.

### **What are the risks associated with captive breeding?**

The greatest conservation risks associated with captive breeding are when threatened or endangered species are bred for commercial purposes—for financial profit. This is particularly risky when individual animals or their parts and products are of high value, while at the same time the animals are highly endangered in the wild. This is yet again riskier if there is a high risk of poaching and illegal trade in wild individuals of the same species. For example, one of the greatest conservation risks today is the breeding in Asia in commercial farms of captive tigers, for use in traditional medicine. This puts wild tigers, of which there may be only 3,000-5,000 or fewer remaining in the wild, at an unacceptable risk (by promoting a market, stimulating consumption, and risking increased illegal trade).

Only when threatened species are bred for commercial purposes but the market is controlled, poaching and illegal trade are under control, wild animals are worth less than captive ones (e.g., pets), and the commercial value is low enough not to stimulate further illegal trade and removals from the wild—only then can we say that commercial captive breeding presents a lower risk to wild populations.

In the case of zoos, the lack of international standards for zoos and captive breeding operations has been a contributing factor to the proliferation of captive breeding facilities for commercial purposes, including commercial breeding programmes for threatened and endangered species such as tigers. Though claiming to be conservation driven, there are a number of risks which may completely negate, or seriously undermine, the appropriateness and conservation contribution (if any) of such captive breeding programmes:

- Many captive breeding programmes take place in facilities that call themselves “zoos”, but that are really farms, circuses or entertainment parks, without any contribution to conservation. The lack of international standards for zoos makes this distinction difficult, and undermines the contributions of

legitimate zoos to conservation. WWF urges the international zoo community to consider the development and adoption of such international standards.

- Species that are popular as pets such as reptiles or birds have sometimes been labelled as “captive bred” but have since been discovered to have been laundered and removed from the wild unsustainably, thus damaging wild populations.
- Captive breeding for conservation purposes necessarily must include a viable plan for reintroduction of species to the wild. Although IUCN—the World Conservation Union lists over 200 reintroduction projects currently under way around the world, re-establishing animals in their original habitat is more than a matter of simply setting them loose and hoping they will go forth and multiply. It is a complex, long-term effort that poses a raft of difficult economic, social, and environmental challenges.
- Disease spread, social disruption and the introduction of alien genes which will may ultimately cause mortality is a risk for animals reintroduced into natural habitats. Although most reintroductions take place in areas where no remnant population exists and where possible, reintroduction candidates are of the same subspecies or race as the original, (since they are more likely to possess genetic traits adapted to the habitat), there is still a high level of risk which must be assessed and managed if reintroduced stock are to survive. If sufficient wild stock exists, and studies show that moving some will not be detrimental to the existing population, it may be easier and less expensive to catch and relocate animals than to captive breed them, since they already have the skills needed to survive in the wild.

#### **What is the role of zoos in captive breeding and conservation?**

WWF has long supported the legitimate role of zoos in conservation, education, and research.

Captive breeding programmes managed by zoos can provide positive benefits for species conservation if designed and used appropriately, and if they are part of a science-based conservation management plan for the species. Such programmes may act as a platform for zoologists, veterinarians and others to conduct research designed to enhance understanding of the biology of the species.

Additionally, some zoos are involved in captive breeding and reintroduction programmes that may help to secure the future of threatened species. A few zoos are also involved in conservation projects in the field, either through the donation of funds or involvement of their own staff scientists in field programmes. Unfortunately, the proliferation of captive breeding facilities for commercial purposes, including commercial breeding programmes for threatened and endangered species such as tigers, requires that we carefully distinguish these facilities – some of which may call themselves “zoos” – from legitimate zoo operations.

WWF can support zoo conservation breeding programmes that:

- are beneficial to the species in the wild, and enhance their conservation, using carefully monitored science-based programmes for removal of wild specimens only when necessary for controlled breeding, research, or educational purposes;
- are open to the public for purposes of education about the species, its habitat, and conservation threats, and are used to increase support for the actions necessary to save the species in the wild;

- provide funds, technical expertise, or other support to range states of the species concerned, to benefit the conservation of the species in the wild.

#### **When does WWF Support Captive Breeding?**

In accordance with IUCN—the World Conservation Union, WWF believes that in greatly reduced, highly fragmented, and disturbed habitats, captive breeding programmes for endangered species may be necessary to ensure that population numbers overall remain high enough to prevent local or global extinctions. This is in rare, exceptional circumstances only. However, where the rate of decline indicates this possibility, captive breeding programmes need to be established before species are reduced to critically low numbers, and need to be coordinated internationally according to sound biological principles, with a view to the maintaining or re-establishment of viable populations in the wild.

#### **For which species has captive breeding been successful in terms of conservation?**

There are only a few strong examples, including the large blue butterfly (reintroduced into SW England); wolves in Yellowstone Park, USA; the Peregrine Falcon in the USA; and the golden-lion tamarin, which are slowly rebounding in Brazil.

WWF also supports captive breeding of the Iberian lynx, the world's most endangered cat species as an emergency measure, but notes that the Spanish government must first mitigate large scale threats to Iberian lynx habitat which is crisscrossed with legal and illegal roads, currently causing high levels of mortality.