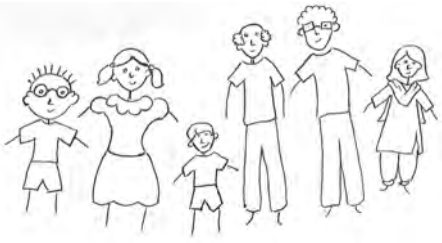
A VERY, VERY BASIC INTRODUCTION TO ZOOS

for non-scientists



Written by **Sally Walker** in 1993 utilizing a variety of written publications, lectures, and personal communications with Tom Foose, Ulie Seal, Colin Tudge and Malcolm Whitehead (They should not be blamed, however).

WHY DO WE NEED ZOOS ?????

We all know zoos are not an ideal place for animals to live their lives in, or even be in for a short period. There are lots of disadvantages in a zoo.

But animals in captivity have been in existence at least as long as written human history. And, with animals in captivity in zoos, it is difficult to get rid of them. One of the two options -- release them into the wild. But given the lack of space for wild animals from burgeoning human populations, where do we release them? And, since they have forgotten how to live life in the wild, how do we ensure they survive and breed? And many more complications compel us to not shut down zoos. They have become a necessity today. So, here are a few ways of looking at zoos in a positive light.

Remember, the last part of this series we talked about meta population management and how zoos are important in ensuring adequate numbers and genetic variability of species? Continuing that train of thought ....

WE SAY

ZOOS GIVE
WILD ANIMALS
WITH
NO CHANCE

A

LAST
CHANCE

ZOOS ARE LIKE A

STATE BANK OF ANIMALS

WHERE WE CAN KEEP A
SMALL POPULATION SAFE AND
INCREASE IT

IN CAPTIVITY You can :

… move animals more easily to re-adjust sex ratio and age distribution

… keep track of their identity – age, sex, lineage, etc.

…pair them according to genetic and demographic profile and the needs of the meta-population

…protect them from harm

…increase numbers faster

…promote them as Ambassadors for their Species

…find out more about them

ADVANTAGES TO CAPTIVITY

There is
PROTECTION FROM POACHERS and
LESS ENVIRONMENTAL PERTURBATIONS, as well as
MORE GENETIC MANAGEMENT, as well as
MORE DEMOGRAPHIC MANAGEMENT, and further
HEALTH/DISEASE MANAGEMENT, and otherwise
SECURE EXPANSION OF POPULATION, and moreover,
PUBLIC EDUCATION & SUPPORT, and last but not the least
RESEARCH USEFUL FOR CONSERVATION

ALL THIS, WITHOUT
DISTURBING THE WILD ONES!

ZOOS ARE NOT A

SUBSTITUTE

FOR THE WILD

BUT THEY ARE

(-- OR CAN BE --)

A

SUPPORT
FOR THE WILD

SO FOR

INTERACTIVE
MANAGEMENT

EX SITU <=> IN SITU
ZOO <=> WILD

ZOOS
CAPTIVE BREEDING CENTRES
GENOME BANKS

CAN PROVIDE "BACK-UP' OF

WHOLE LIVE ANIMALS OR
THEIR REPRODUCTIVE
MATERIAL

TO STRENGTHEN
SMALL, WILD POPULATIONS

…
GENETICALLY
NUMERICALLY
DEMOGRAPHICALLY

IN SANCTUARIES,
NATIONAL PARKS,
RESERVE FORESTS,
and other
PROTECTED AREAS

IF REQUIRED

ANOTHER METHOD IS INTENSIVE MANAGEMENT OF THE WILD POPULATION

* Marking/monitoring of individual animals
* Enhanced protection measures
* Habitat improvement
* Disease prevention
* Livestock control
* Relocation of human settlements
* Creating alternative populations in safer areas
* Translocation/reintroduction/ benign introduction, etc.

OF
LIVE ANIMALS OR
REPRODUCTIVE MATERIAL

ACTIVE INTERVENTION can save species & populations

1. Adding animals or their reproductive material to restore
a. numbers,
b. demographic stability,
c. genetic diversity

2. Translocating populations (or parts of populations)

3. Culling sometimes actually helps populations increase

4. Initiating alternative populations using stock from zoos or from other "too small to save" populations in wild

5. Initiation of captive breeding programmes "too small to save" populations in the wild

WHAT DOES IT TAKE
TO SAVE A
small POPULATION

**COOPERATION,
COORDINATION,
COMMUNICATION**
e.g., lots of people working together – ACTION

**RESOURCES
RESEARCH
RECORDS**
e.g., lots of money, expertise and INFORMATION

Some High-tech reproductive techniques
that will put captive animals or their reproductive material
BACK TO THE WILD

Artificial insemination
Superovulation
In vitro fertilization
Cloning
Genetic selection
Synchronisation of estrus
Embryo transfer
Parthanogenesis
Chimera formation
Gene transfer
Induction of estrus
Oocyte maturation in vitro
Cryopreservation
Sex selection

COOPERATION,
COORDINATION,
COMMUNICATION
from global to grass roots

IUCN SSC Species Survival Commission

CONSERVATION BREEDING SPECIALIST GROUP Planning a Future for Wildlife

सत्यमेव जयते

ZOO OUTREACH ORGANISATION

Central Zoo Authority

RESOURCES
RESEARCH
RECORDS

भारतीय वन्यजीव संस्थान
Wildlife Institute of India

ZOO OUTREACH ORGANISATION

CONSERVATION BREEDING SPECIALIST GROUP Planning a Future for Wildlife

BY COMBINING
INFORMATION
AND
ACTION

IT IS POSSIBLE TO

RESCUE
A SMALL POPULATION

WITH A RECOVERY
PROGRAMME

ONCE A POPULATION BECOMES A SMALL POPULATION, IT IS PROBABLY

HISTORY

… UNLESS

WE INTERVENE

WITH A RECOVERY PROGRAMME

WHAT'S SMALL POPULATIONS GOT TO DO WITH BIODIVERSITY

EVERYTHING !!!

MASS EXTINCTIONS OF MANY, MINUTE POPULATIONS IN MULTIPLE AREAS OF HIGH BIODIVERSITY (SOME OF THEM WE DON'T EVEN KNOW EXIST) = LOSS OF BIODIVERSITY

ZOOS AND ZOO SCIENCES WORKING WITH FIELD MANAGERS IN AREAS OF HIGH BIODIVERSITY CAN REVERSE THE

EXTINCTION

VORTEX

FOR MANY SPECIES

GOOD ZOOS CAN HELP CONSERVE BIODIVERISTY

EVOLUTION OF ZOOS