

## OVERVIEW OF GLOBAL CAPTIVE PROGRAM FOR *RHINOCEROS UNICORNIS* AND A PROPOSAL FOR A FUNDING MECHANISM

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World-wide there are about 1,100 rhino in captivity (See Table 1 in the paper: Overview of Status of Asian and African Rhinos) However, analogous to the situation with rhinos in the wild, over half of these rhinos are southern white rhinoceros.

There are 140 *Rhinoceros unicornis* in captivity globally, 50 in North America where they are part of the Species Survival Plan (SSP) program to manage and propagate this species scientifically. A similar program, the EEP, exists in Europe.

In general, there are four main roles and goals for captive programs as part of conservation strategies for threatened species like the rhino:

- (1) **Propagation** to provide a genetic and demographic reservoir that could be used to reinvigorate or re-establish wild populations if and when the need and opportunity occur.

In other words, a captive population provides an insurance policy against catastrophes in the wild. It is usually easier to ensure protection of rhino when they are in captive situations. Ideally, captive populations can be part of the metapopulation that will include integrated and interactive management of numerous disjunct wild populations (Figure 1).

- (2) **Education** to provide the public with information and an appreciation of these magnificent species, their plight in the wild, and the need for active conservation programs.
- (3) **Research** to provide information that can be useful to management of the species both in captivity and the wild.
- (4) **In Situ Support** to provide funds for conservation in the wild from contributions recruited through captive institutions and programs.

Currently, captive institutions are the source of over \$1,000,000/year for *in situ* conservation although virtually all of these funds to date have been directed to the African and Southeast Asian rhino species. However, at this meeting, I am happy to announce that through a contribution from Mrs. Anna Merz, the International Rhino Foundation (IRF) will provide at least \$ 5,000 to Assam for intelligence work and another \$ 5,000, for census work.

Basically, the organization for which I work as Program Director, the International Rhino Foundation (IRF), is committed to assisting rhino conservation through both:

- (1) Support for in situ efforts; and
- (2) The development of viable captive populations as a back-up, or insurance policy, for rhinos in the wild.

The IRF works closely with the North American (American Zoo & Aquarium Association = AZA) Species Survival Plan (SSP) program for *Rhinoceros unicornis*. The AZA SSP is the scientific and organized program for management and propagation of endangered species like *Rhinoceros unicornis* in the zoos and other conservation centers in the United States and Canada. IRF also collaborates closely with the analogous program in Europe, the EEP. Hence, IRF presents this proposal on behalf of both the SSP and the EEP.

Demographically, the SSP and EEP population of *Rhinoceros unicornis* are doing very well (Table 1). There are 50 *Rhinoceros unicornis* in the SSP population and it is increasing at about 4% per annum, which is close to the growth of some wild populations. The EEP population has 35 individuals and also is doing well demographically. However, the genetic foundation of both the SSP & EEP populations are

limited and needs to be expanded by more founder animals from the wild to achieve its long-term objective of preserving 90% of the gene diversity of the wild population. For example, in the North American SSP population, there are currently the equivalent of 6 genetic founders and the potential, if management is perfect, of only 11. A "founder" is defined as a rhino from the wild gene pool. For viability, there should be at least 20-25 genetic founders for a population. Hence the SSP needs up to 14 and the EEP up to 6 additional founders, i.e. animals from or representing lineages from wild populations with no known relationship to rhino currently in the SSP or EEP populations.

As stated above, the IRF mission is promote rhino conservation through linkage of in situ and ex situ efforts. In this regard, IRF proposes for consideration by the range states for *Rhinoceros unicornis* a cooperative program with in situ and ex situ components:

- (1) Provision through IRF of US \$1.5 to 3 Million for *in situ* rhino conservation.

## METAPOPULATION

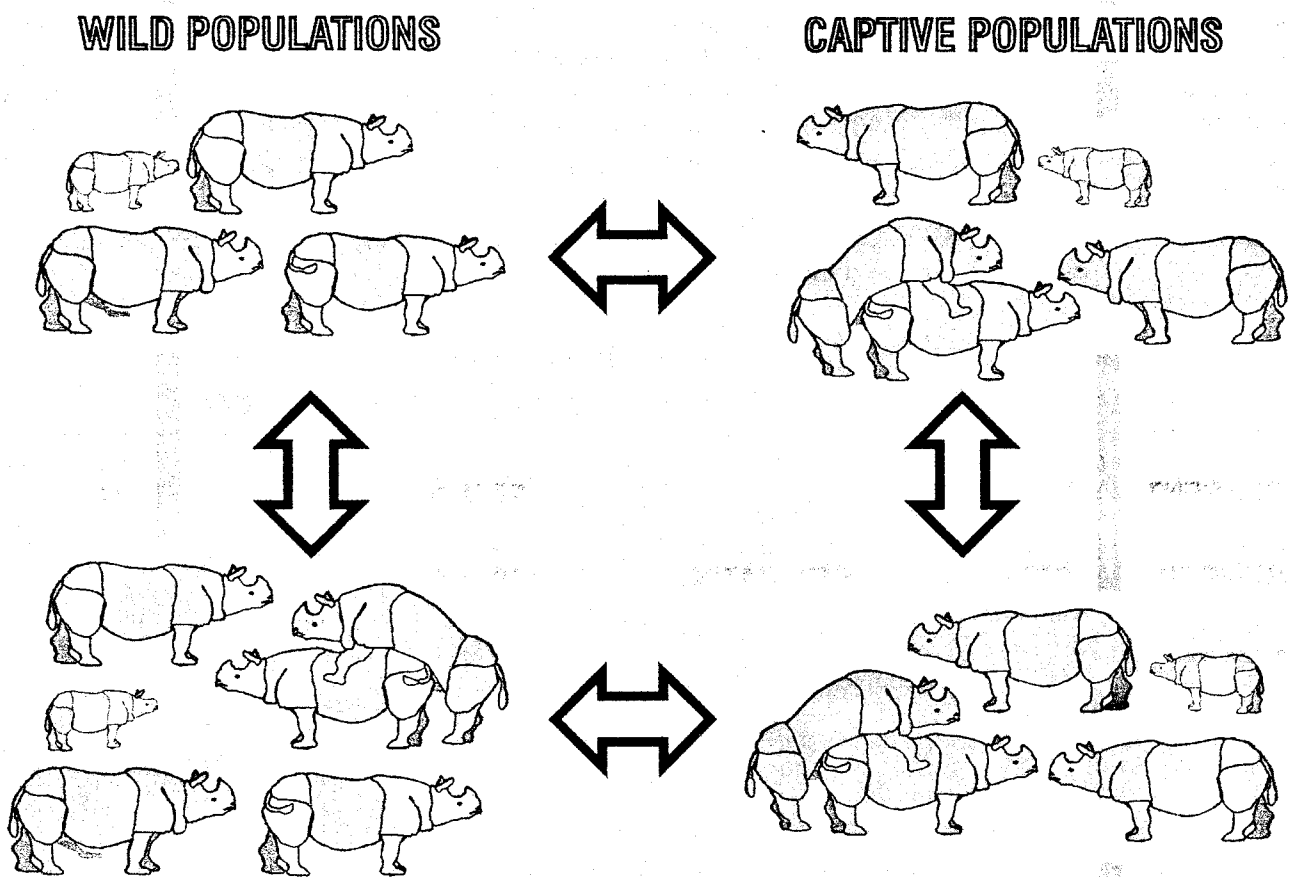


Figure 1

- (2) Provision by the range states, India (specifically Assam) and Nepal of 14 new founders for the SSP population in North America and 6 new founders for the EEP population in Europe.

This program could extend over a period of 3-5 years. Moreover, the rhino to be provided by the range states could be orphans from the floods, other rhino currently in captivity (e.g. at the state zoo in Gauhati) or rhino captured for this purpose. The numbers of rhino reported at this meeting and subsequently from the census conducted in Kaziranga in April 1999 (See the 1999 Population Estimates Table in the Working Group Reports section) clearly indicate that this number could be

removed from Kaziranga and/or Chitwan over the 3-5-year period without any detriment demographically or genetically to these wild populations. In fact, the removals might even be beneficial in Kaziranga which may be near carrying capacity. Managers of African rhino populations try to keep numbers below carrying capacity to protect habitat and maximize rhino population growth (Emslie).

The IRF has engaged in such cooperative programs with range states in Africa (Zimbabwe and Republic of South Africa) for both black and southern white rhino. It should also be mentioned that with the black rhino program, rhino born in captivity in North America and Europe are already moving back to range states for introduction into the wild.

Finally, it is recognized that there may be opposition from some conservationists against both captive populations and linking provision of rhinos to ex situ facilities with contribution of funds for in situ conservation. However, IRF believes that diversified strategies using both in situ and ex situ are the most secure for the rhino. IRF also believes that conservationists should be pragmatic. In this regard, the case of the Republic of South Africa may be instructive. RSA, along with India and Nepal, are the great success stories of rhino conservation. Populations of rhino in these countries have recovered spectacularly. To date, this successful rhino conservation has been supported almost entirely by these range states themselves. However, it is becoming increasingly difficult for these countries to provide all the funds needed. Hence, there will be need for more funds from external sources in the future. RSA has adopted a very pragmatic approach by dispersing modest numbers of rhino from government reserves to ex situ facilities both to reinforce the captive gene pools and to generate revenue for in situ rhino conservation.

**TABLE 1: RHINOCEROS UNICORNIS IN CAPTIVITY IN NORTH AMERICAN SPECIES SURVIVAL PLAN (SSP) POPULATION**

<b>CURRENT POPULATION:</b>	<b>25 Males + 25 Females = 50 Total</b>
<b>NUMBER OF INSTITUTIONS PARTICIPATING:</b>	<b>18 Institutions</b>
<b>TARGET POPULATION:</b>	<b>45 Males + 45 Females = 90 Total</b>
<b>CAPTIVE POPULATION GROWTH RATE:</b>	<b>~ 4 %/Year</b>
<b>EFFECTIVE NUMBER OF FOUNDERS NOW:</b>	<b>6 Actual &amp; ~ 11 Potential</b>
<b>NUMBER OF ADDITIONAL FOUNDERS NEEDED:</b>	<b>7 Males + 7 Females = 14 Total</b>
<b>POTENTIAL NEW PARTICIPATING INSTITUTIONS:</b>	<b>5+ Institutions</b>

