BRIEFING
on
IBERIAN LYNX (*Lynx pardinus*)
MANAGEMENT PLAN
AT DOÑANA NATIONAL PARK

Doñana, 11th march 2003.

1. SUMMARY

- Management Plan approved in 1988 and in implementation since.
- Jointly drafted by scientific (Doñana Biological Station – C.S.I.C.) and technical (Doñana National Park -DNP) staff.
- Management actions entirely financed by DNP ordinary budget. Most of Research projects financed by Ministries of Agriculture and Environment

2. STRUCTURE OF THE PLAN

- **Promoting high densities of Rabbits (basic prey)**
  - Habitat management: rejuvenation of thicket formations at mosaic scale.
  - Cultivation of small patches
  - Passive protections against predation: fences and refuges
  - Increasing carrying capacity and improving habitat for Rabbits (and Lynxes) in dense forest areas:
    - clearance of recently planted Stone Pines (*Pinus pinea*)
    - removal of *Eucaliptus* crops
  - Restoring damaged areas: reafforestation with natural plant communities
- **Decreasing competition on Rabbits by large herbivores**
  - Wild ungulates control
  - Domestic ungulates control
- **Decreasing densities of opportunistic carnivores**: Red Fox, wild Dogs and Cats, Wild Boar.
- **Applied scientific research**
- **Monitoring**
- **Complementary measures**:
  - Reducing non-natural mortality caused by car accidents, trapping, poaching, illegal activities, etc.
  - Education

3. ACTIONS IMPLEMENTED IN DOÑANA NATIONAL PARK SINCE 1988.

The main achievements subsequent to the fulfilment of the Iberian Lynx Management Plan in Doñana National Park are the following:

1. Since 1987 1.400 Ha of thicket have been treated. The methodology has been tested long time ago, and its effectiveness has been clearly demonstrated in terms of increase of habitat carrying capacity for Rabbits.

2. Between 1991 and 1997 14 patches (16,56 Ha in total) have been sown year after year. In 2001 40 new patches of 13 Ha (in total) have been fenced and sown. In 2002 these have been seed again and other 40 new patches have been fenced and sown as well.

3. Between 1987 to date, 1.840 Ha of recently planted Stone Pines have been cleared to 30 - 10 % of their former densities. Tree cuttings have been planned looking for spatial and structural forest diversification.

4. Between 1987 and 1996, all *Eucalyptus* crops existing at public properties (nearly 700 Ha) were removed. Following to an expropriation procedure, a large programme financed by the National Park budget was implemented and executed between 1998 and 2002. The *Eucalyptus* crops existing at these properties, planted in the 1950's and having a total of 1.553 Ha, were practically removed. Only at the private property El Lobo (986 Ha with 155 covered by *Eucalyptus*) these works haven't been performed by lack of agreement with owners. To date it is still pending.

5. Restoration activities have been also implemented at areas affected by *Eucalyptus* removal and others where natural communities were damaged for some reason (overgrazing, nesting of bird colonies, destruction, etc.). Planting techniques are being progressively improved ad survival rates are higher. A severe drought occurred between 1992 and 1995 caused a lot of tree losses. Since then, planting campaigns come along with irrigation of recently planted trees (5 years minimum). In total, 1.730 Cork Oaks and nearly 1.000 Wild Olive Trees (both 25-30 years old) have been planted, along with thousands of 2-5 years old plants of Ashes, Willows, Poplars, Strawberry Brushes, Myrtles, Wild Pear Trees and other components of the Cork Oak community.

6. Concerning reduction of wild and domestic ungulates, it is meaningful to mention that all ecosystems of the Park have suffered from a very high grazing burden, caused by serious conflicts with cattle owners. These conflicts have been progressively solved and last autumn the total burden have been reduced to more realistic levels. Wild ungulates have maintained their densities in steady levels, and thus no intervention has been required.

7. Intensive scientific research has been undertaken, covering basically two main issues:

    - Ecology, biology and population dynamics of Iberian Lynx
    - Ecology, biology and population dynamics of Rabbits.

Studies on predator behaviour and vegetation dynamics after thicket rejuvenation treatments have also been carried out.

8. Monitoring has been one of the weakest points of the Iberian Lynx Management Plan. Financial difficulties prevented contracting adequate external staff to cover those needs and most of the work has been done by permanent staff. Data collection has not been well covered and there are some gaps in series of measurements. This problem has been partially compensated by a new non-invasive technique to monitor Lynx movements and territories which has been tested and has proved to be very efficient (see heading 5.1).

9. To prevent car accidents in roads surrounding the Park, some tunnels have been built in highly incidental sites in the past. There are two in road A-483 and three more in road A-494. Although resident Lynxes learn to use those tunnels, they appear to be inefficient in areas with uninitiated or spreading young Lynxes. A new system of resounding strips, combined with speed reduction, seem to have been effective to prevent a female to be run over. Last spring, the animal was breeding two cubs in an area close to a very busy road, near El Rocío. She often crossed the road, firstly alone and later along with the cubs. To date, the three animals are alive.

4. CURRENT PROJECTS

Given the critical situation of the Iberian Lynx, two new Projects financed by the Doñana National Park ordinary budget started in 2001:

- "Increase of Rabbit densities". It includes all the measures stated for this protected area in a LIFE project, presented jointly by a number of partners, and recently approved by European Commission. It will conclude at end 3003 and hopefully will be replaced by a second project to provide continuity of actions undertaken, which should not be interrupted.

  One of the actions included in this project was the construction of a facility for Wild Rabbit captive breeding. It was concluded recently and founders will be captured shortly, by the end of breeding season in the field. Rabbits obtained are foreseen to be released in areas with previous habitat treatments.

- "Restoration of potential habitats for threatened predators (Iberian Lynx and Spanish Imperial Eagle) covered by recently planted Stone Pines". It aims to complete the restoration of the remaining nearly 600 Ha of such Pine groves. It's foreseen to conclude in 2005.

Both projects basically foresee to increase carrying capacity of suitable habitats for Lynx and Imperial Eagle by means of habitat management and complementary measures to raise Rabbit populations.

5. OTHER ACTIONS.

Three important actions are being undertaken by National Park Administration, in principle not foreseen either at the Management Plan or the Projects being performed.

1. Lynx population monitoring by means of photo cameras triggered by the animal when attracted by female urine. No manipulation of animals is required and no disturbance is caused by this simple method. It is very effective, since apparently all existing animals surrounding are attracted by the device, not only Lynxes, but also other species of Carnivores (Red Foxes, Wild Cats, Mongooses, Otters, Badgers, etc.) and other Mammals (Rabbits, Hares, Hedgehogs, etc.). A complete survey has been performed recently (dec. 2002 – feb. 2003) simultaneously throughout the National Park and Protection Areas, in coordination with regional authorities which have performed the same action in territories under their responsibility. Reliable data concerning Doñana sub-population will be available shortly.

2. Iberian Lynx Captive Breeding Programme. This action is being undertaken and financed by National Park Administration, but it is strictly under the scope and responsibility of Direction General of Biodiversity Conservation (Ministry of Environment). It means that it is not an activity promoted by the National Park. It is rather an action offered by National Parks Service and put at the disposal of Regional and National Authorities concerned by Lynx Conservation National Strategy. A lot of difficulties to obtain males for the Programme prevented successful achievements and the Programme is at the moment rather paralysed. Nevertheless, during recent years, a number of experiences looking at assisted reproduction (heat inducement)of Lynxes and new born raising have been successfully performed using domestic cats and Bobcats provided by Jerez de la Frontera Botanical and Zoological Garden.

3. Experimental releases of Rabbits. A technique to improve survival rates of Rabbits during quarantine and release periods is being tested. It emphasizes a careful individual selection at capture areas, a careful vaccination and veterinary attention and protections against predators for released Rabbits as main procedures to achieve successful releases. It has been tested in areas affected by *Eucalyptus* removal, where Rabbit densities were practically none, with excellent results: rabbits are not only present, at certain patches are even abundant, and Lynxes started to use these areas throughout the year.