

## MANAGEMENT RECOMMENDATION

The understanding of biology of species is an important requirement to manage it and its habitat. The information available on wild ass was scanty and in the form of surveys, zoo records and census figures of forest department. This study was an attempt to gather baseline information on the biology and ecology of wild ass and human dimensions in their habitat. The LRK is unique, being the only area having this subspecies of wild ass and also approximately producing 25% of India's salt. The poor economic condition of people in the area and the unpredictable resources make this area more vulnerable and hence require well planned and sound management strategies for compatible existence of wild ass and people. This study will help in formulating management decisions.

The conservation problems in LRK are:

1. The sanctuary needs to be notified.
2. People related problems are
  - a) encroachment by illegal salt manufacturers,
  - b) the vehicular traffic criss-crossing the fragile vegetated zone,
  - c) unregulated livestock grazing,
  - d) dumping of feral pigs in the Rann fringes from the towns
  - e) Charcoal making.
3. Sanctuary management related problems are
  - a) lack of proper management plan for the Sanctuary,
  - b) low number of staff with poor infrastructure facilities and
  - c) Comes under five district administrative blocks after the area.
4. The wild ass being confined only to LRK.

5. Crop depredation by wild ass.
6. Availability of water during summer.
7. Immunization of domestic equine in zone where contact between wild ass and domestic equine is frequent.
8. Narmada canals passing through the wild ass habitat may affect the habitat condition and fragment the wild ass population.

The salt manufacture in LRK is concentrated maximum along southern fringe and in some parts of eastern fringe (Figure M.1). Chapters III, IV and V provided information on distribution, ranging pattern and habitat use which can help in delineating areas for salt manufacture. The vehicular traffic for salt works should be regulated on well marked routes mainly to prevent movement through the vegetation zone and avoid disturbance to wild ass.

The economic condition of people in the area is needs to be improved. The ecodevelopment programme will help both people and wild ass. Attempt to exclude people from wild ass habitat would not succeed in the area. The concept of national park proposed by many does not seem to be feasible.

LRK lacks a management plan. The management is done on an *ad-hoc* basis. The management strategy changes with transfer of sanctuary superintendent. Immediate attention is needed to prepare a management plan. The Sanctuary is understaffed and have poor infrastructure facilities. It requires to divide the area into three manageable zones north, south and east, each one of this can be further divided into ranges. The staff should be provided with wireless network and other sufficient infrastructure support to monitor such a vast area.

• The Sanctuary management has constructed 13 guzzlers, along the sanctuary fringe in the area where the wild ass herds often frequent. these water holes should be

regularly filled so that the wild ass get acquainted. The present study indicated (Chapter V) that animals restrict their movement around water holes which have permanent source. During summer water is the main factor affecting movement and animals move far and wide into agricultural areas in search of water. The water holes should also be maintained on bets.

The wild ass, depredate crops mainly during the post monsoon and winter (Chapter IV). This is a serious problem and does not seem to have any viable solution at present. The crop damage problem is further aggravated by dumping of feral pigs in the northern fringe, which heavily depredate on crops. The dumping of pigs should be discouraged.

The Forest Department dug 14 km. trenches and erected electric fence to keep the wild ass away from crop fields. The faulty design of both these measures proved to be a failure. The Department later posted keepers in different villages to drive away wild ass from crop fields during day time. This method will also not prove to be a success as wild ass mainly depredate crops by the night. The only way to reduce crop depredation seems to be day and night protection of crops by land owners.

The Narmada sub-canal (especially Kutch branch) passing through the bottleneck between Great and Little Rann and the Malia sub- canal running almost parallel to southern fringe will fragment wild ass population and also change the habitat conditions. Care should be taken at this stage to provide safe corridors to wild ass population to move between Great and Little Rann. The availability of water may intensify agriculture in the area . The conflict between wildlife and people would be on the rise depending on the success of this canal system. Well thought design and action now, will avert this future mishap.

The livestock grazing by nomadic pastoralists need to be regulated. The plantation of native flora should be encouraged. The dense *P. juliflora* patches should be thinned to make them accessible to wild ass. The charcoal manufacture should be regulated in the area.

Tourism need to be encouraged in the area, which not only have wildlife value but also rich in cultural heritage. The inland salt manufacturing system is one of the oldest in the world. Benefits to local people from wildlife tourism will decrease the antagonism towards wild ass.

The wild ass should be introduced in potential sites in Gujarat and Rajasthan. The introduction is needed to have buffer population far enough from LRK to provide safe locality from any epidemic (see Chapter III). The population of wild ass in Little Rann of Kutch need to be well above 2500 as suggested by the IUCN/SSC- Equid Specialist Group (Duncan 1992) as minimum viable population for areas where population is confined to one locality.

The study indicates that best time to estimate population is between July to January. The most feasible time for ground count is October to January. The vehicular census can be carried out as outlined in Chapter III. The census can be repeated two or three times in a specified period and records of sex of the wild ass (if possible by enumerator) and number of foals can be done. This operation can easily be carried out all over LRK within 7 to 10 days. The intensive census operation can be carried out once every two years. Monitoring in this way will generate good information for long term management of species. Aerial count during monsoon will be the best option for census.

**Research Recommendations:**

The eastern fringe population needs to be studied for monitoring population trend, exchange of individuals between the herds and the movement of population between eastern fringe and the Bets like Pung, Wasraj and its associated Bets.

There is a need to conduct a detailed study on the island/bet situation during the monsoon especially on the Pung Bet. A large number of wild ass and cattle congregate here during the monsoon and remain over a period of time during the monsoon.

The social organization observed on the island during the monsoon differed than that observed along the fringes. This needs to be studied in greater detail to see if this is mainly a strategy of wild ass to avoid predation by wolf in the island situation.

The movement of pastoralists only during the monsoon should be studied in greater detail along the southern fringe with respect to the wild ass and livestock use of the habitat only during the monsoon. The movement of wolf, its arrival into the area with pastoralists would be an important prey-predator relationship study by itself.

Vegetation biomass should be studied in a much greater detail on the Wasraj and Pung Bets, as they are the potential islands for the wild ass during the monsoon.

Radio collaring of males from the three all-male herds, and dominant stallions would provide information of their ranging pattern and their nocturnal habitat use.

Before the Maliya sub-canal branch of the Narmada Canal is constructed, the pros and cons of the same should be studied keeping in mind the wild ass habitat and the other Rann associated species. A survey of the sub canal area needs to be done immediately before the work begins in the southern fringe LRK.

