

SUMMARY

The study was conducted from February 1989 to January 1992 in the Wild Ass Sanctuary, Little Rann of Kutch (LRK). The major objectives were to gather ecological information on the population trend, ranging pattern, habitat use and social organization of the wild ass.

The vegetation of the study area was mapped and the plots were considered for ordination and classification. Three main habitats were classified based on this ordination - Rann saline grassland, *Prosopis juliflora* scrubland and fallow land areas. Nine associations were identified.

Pung Bet vegetation had three associations. *P. juliflora* density was 143.6 shrubs/ha. Wasraj Bet had three associations, *P. juliflora* had density of 132.36 shrubs/ha. Dhut, Andheri Wen, Maharajawali, Khijadiya, Miyan and Pancham Bets had negligible ground cover. *Suaeda fruticosa* was the dominating shrub on these islands.

A total of 21 herds were distributed in LRK. The southern fringe had 11 wild ass herds (3 all male bands and 8 family bands). The eastern fringe had six herds (1 all male group and 5 family bands). Wasraj, Nanda and Pung Bets had a family band each, but only during the monsoon. Dhut Bet had one all-male group round the year. Three of the six herds in the eastern fringe moved onto the islands during the breeding season i.e during the monsoon.

The population showed an increasing trend since 1972 onwards ($r = 0.0058$ to 0.145). Mating occurred from June to January. 50% of the foaling occurred during July and August. 21.11% ($n=159$ foals) births were recorded in 1990, 21.23% ($n=149$ foals) in 1991. The foal sex ratio for LRK in 1990 was 1.016♂:1♀. The adult sex ratio for LRK was 0.508♂:1♀ in 1990 and 0.659♂:1♀ in 1991. High mortality rate of

males and their dispersal is responsible for skewed sex ratio in LRK. The best time for a population count/estimate in the Little Rann was between July and December.

The mean daily movement showed significant difference within the season among dominant male (KM), ostracised male (JJ), all-male herd (BH) and family band (MH). The daily movement for MH range from 3.72 to 5.18, BH ranged from 4.37 to 6.41 kms and KM ranged from 7.65 and 10.5 kms and JJ ranged from 4.5 and 6.54 kms (all in 1990)

The home ranges of MH varied between 4.25 and 12.45 sq.kms. and KM between 2.68 to 5.8 sq.kms in 1989-92. Home ranges of JJ varied from 1.83 to 7.08 sq kms and BH from 5.05 to 13.37 sq kms. There was no variation in home range of JJ, KM, BH and MH within and amongst the seasons of 1989-90. The family bands and the stallions showed a remarkable fidelity in seasonal use of home ranges.

Radio telemetric studies were conducted on two collared mares YC and BC. The twenty four hour home ranges of YC was significantly higher than that of the diurnal home range size. Consideration of day home range alone, will underestimate the home range size. range.

The choice of different habitats differ in three seasons. Wild ass showed a strong selection in habitat comprising the home range as well as the choice of their habitat within the home range. Scrub low was the most preferred habitat by the family band, dominant and ostracized stallions and all-male group. The medium and high density scrubland were of importance during the summer and winter as it provided thermal refuge and food. In monsoon the area provided cover and foaling ground. Fallow land were frequented throughout the year. The wild ass habitat requirement can be summarized as forage, water, safe breeding cover and thermal cover (especially during

extreme winter), the habitat use pattern observed is explained in terms of wild ass's changing requirement for these resources in different seasons.

The activity pattern remained consistent throughout the year in family and all-male groups. The wild ass generally feed during night. The day resting time in different seasons is inversely proportional to the time spent being active during the night.

The social organization comprised of two groups a family band consisting of dominant stallion, several mares of different age classes, foals and occasionally yearling and subadult males. An all-male group constituted by yearling males and the ostracised males evicted from the family herds. The males are territorial either year round or seasonally and also maintained a harem. The prime territory holders have an access to water resources and food. The quality of the territory seemed to be the prime determinant of dominance. The group size was very inconsistent. The mean group size varied between 4.6 to 28.67. The winter (9.2) and summer (6.61) group sizes were comparatively smaller than that of monsoon (17.86).

The Wild Ass Sanctuary need to be notified and management plan is urgently needed. The Sanctuary management needs to be strengthened by providing better infrastructure and increase in staff. The salt manufacturing zone needs to be defined. The vehicular movement should be regulated on designated routes to protect ground vegetation. Livestock grazing (especially on betes) and charcoal making needs to be regulated. The involvement of local people is most important to safeguard the future of wild ass.

The Narmada canals, especially Kutch and Malia sub-canals need to be properly designed keeping in view the conservation of wild ass. The wild ass population need

to be protected as it is less than the recommended minimum viable population (2500) for a free ranging equid confined to one locality (IUCN/SSC-Equid Specialist Group)

The monitoring of wild ass population should be taken up by forest department on annual and biannual basis. Further research inputs are required for eastern fringe and bet populations of wild ass. The movement of the herds between the eastern fringe and the Bets need to be studied. The situation on the Pung Bet during the monsoon can be an interesting aspect of study, as the wild ass and the livestock congregate here at that time. The stallions and some bachelor males need to be radio-collared, to understand their nocturnal ranging pattern and their habitat use.