

MORTALITY PATTERNS AND HUSBANDRY MANAGEMENT IN IDMI (*GAZELLA GAZELLA*) AND “YEMENI” (*GAZELLA GAZELLA CORA*) GAZELLES AT AWWP

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INTRODUCTION

In the wild the Mountain gazelle (*Gazella gazella*) is widely but unevenly distributed across the Arabian Peninsula. On the IUCN Red List it is classified as “vulnerable” (IUCN Red List of Threatened Species, 2008). Idmi (*Gazella gazella*) and “Yemeni” (*Gazella gazella cora*) are two very closely related subspecies. In the literature no obvious differences in behaviour and biology are described. “Yemeni” gazelles can be found in Yemen and the south of Saudi Arabia, Idmi gazelles in the west of Saudi Arabia, Oman, UAE and Israel. Mountain gazelles live in different social units. Female herds count up to 16 adults with their offspring. Young males (>6 months) build their own herds with up to 40 individuals. The aim of this study was to evaluate the main causes of death of Idmi and “Yemeni” gazelles in Al Wabra Wildlife Preservation (AWWP) from 2001 to 2008 according to their frequency, and to detect potential variation in mortality over the years, between sexes and age groups.

MATERIALS AND METHODS

At AWWP Idmi and “Yemeni” gazelles are kept in groups consisting of one adult male and up to ten females with offspring. Since 2004 males are removed from groups with 4-5 months of age. Groups are split when more than ten mature females live in one group. Until 2003 all females were used for breeding. In 2004 gender-segregated groups were established to limit breeding because of space reasons. In 2006 about half of the population of “Yemeni” gazelles were shipped to another facility. Before 2006, groups of Idmi gazelles had temporarily grown up to 25 to 30 individuals.

227 Idmi and 82 “Yemeni” gazelles died between 2001 to 2008. All findings of the necropsy reports were evaluated according to their frequency. Causes of death were investigated and compared between age classes and sexes. Based on stocklist data the population development over the years was evaluated.

RESULTS

Populations of Idmi and “Yemeni” gazelles increased continuously from 2001 to 2008, whereas mortality either stagnated or decreased. The population of “Yemeni” gazelles declined towards 2007 because 31 were moved to another facility in 2006.

In both species the predominant causes of death were pneumonia, trauma and maternal neglect.

In neonates maternal neglect was the most important cause of death. Most animals which died due to trauma were juveniles (77%) in Idmi but adults (64%) in “Yemeni” gazelles. In “Yemeni” gazelles males and females were equally affected, whereas in Idmi traumatic injuries occurred more often in males (62%).

Juveniles suffered from pneumonia more often than adults (18% adult and 36% juvenile Idmi; 14% adult and 56% juvenile “Yemeni”).

DISCUSSION

As expected due to the close relation and the mostly identical management of the two subspecies, causes of death were similar in both populations. Because of the small data set of “Yemeni” gazelles an interpretation of a single cause of death is not very meaningful. Therefore most of the following interpretations only bear on Idmi gazelles.

Until 2003 all females were used for breeding. Due to space reasons gender-segregated groups were established to limit breeding in 2004. If the incidence of traumas in Idmi gazelles was followed over the years, it can be seen, that in 2004 the number of animals which died due to a trauma was noticeable high, particularly in males. This might be a consequence of the new gender-segregated groups. The new group constellations did probably lead to more social stress and therefore more traumas due to fights.

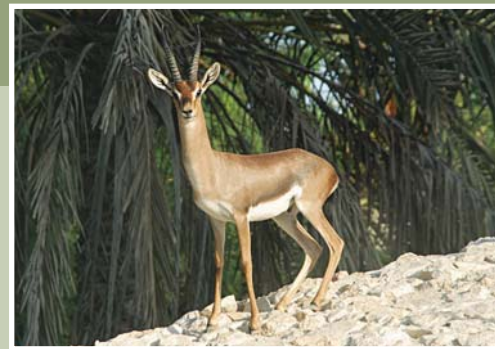


Fig. 1: Idmi gazelle

In 2008 the number of trauma cases were higher than before and more than half of the concerned animals were females. It might be a consequence of the use of all females for breeding again and the resulting stress due to transportations and new group constellations. To decide whether this high incidence was only a temporarily phenomenon further data from future years needs to be collected. The fact that in Idmi, trauma occurred mainly in juveniles but in “Yemeni’s” amongst adults, might be explained by the higher number of animals in the Idmi population and therefore larger breeding groups meaning more young animals were affected. The very low mortality in “Yemeni’s” in 2007 could be explained by less crowding effects due to the reduction of population in 2006 as more space was available. This dramatic reduction in mortality in this year is a good example that in other years crowding effects most likely contributed to the observed mortality. There is an increasing trend of pneumonia in Idmi gazelles from 2001 to 2008 which might be correlated to the population size.

In conclusion management measures that decrease crowding effects such as the creation of breeding groups with only one adult male, allow an increasing of the population while mortality and especially newborn mortality can be kept on a low level. On the other hand, changes in the group constellations might lead initially to a higher mortality and especially to an increased incidence of traumas.

References and Acknowledgments

For more detailed information, tables, references and acknowledgements please refer to the link below:

<http://awwp.alwabra.com/images/stories/awwp/scientific/SP.106/Mortality%20Patterns%20and%20husbandry%20managment%20in%20IDMI.pdf>



Fig. 2: Yemeni gazelle