

Mountain gazelle management in northern Israel in relation to wildlife disease control

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Summary: Large populations of mountain gazelles (Gazella gazella), which had built up in two reserves in Israel as a consequence of game conservation, were decimated by foot and mouth disease. To prevent future outbreaks of this kind, a plan was devised for stabilising the number of female gazelles at 1,000 in the southern Golan reserve and 700 in the Ramot Yissakhar reserve. This reduced the gazelle density in southern Golan from 40 per km² in 1986 to 26 per km² in 1988.

KEYWORDS: Conservation - Game management - Gazella gazella - Israel - Population control - Wild animals.

Malignant foot and mouth disease erupted in April 1985 among a population of mountain gazelle (*Gazella gazella*) in northern Israel (5) and reduced the dense population there by more than 50%. This outbreak led the Israeli government to initiate a sound long-term management programme. Two major objectives of the management programme are control and protection of the mountain gazelle population, and prevention of disease spread.

Research on the mountain gazelle in northern Israel reveals that under favourable environmental conditions, the productivity in this species is quite high (1, 2, 3). Abundant feed of good quality and adequate water are available throughout the year. Females bear their first young when 12 months old, and oestrus occurs immediately after parturition. The reproduction rate is 1.14-1.25 young per female per year, and the survival rate of yearlings is 70%. In the absence of an efficient predator coupled with prohibition of hunting, a small population of mountain gazelle can reach high numbers in a rather short period.

In recent years, the accelerated urban and agricultural development in northern Israel has forced the mountain gazelle into areas where agricultural practice is difficult or impossible. This has created relatively large local populations, especially on the western slopes of the Jordan Valley, which in some places exceed carrying capacity. This situation gives rise to heavy conflict with agricultural interests.

The foot and mouth disease outbreak of 1985 struck a gazelle population of very high density, causing rapid spread of the disease and catastrophic population reduction (4). This ecological catastrophe revealed the urgent need to develop a management programme to check the size of gazelle populations.

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The programme is based on the Leslie matrix technique (6) which prescribes a controlled reduction in the number of animals through hunting over several generations, leading to stability in the population size. The population reduction plan depends on the density of females. In order to reach the expected stability of the population, Baharav and Abramsky (Nature Reserves Authority Publ., April 1988) recommended that a level of 1,000 females in the southern Golan and 700 in the Ramot Yissakhar gazelle populations be maintained.

The programme has been in effect now for two years. The population in an area of 200 km² in the southern Golan has been reduced from 40 gazelles per km² in 1986 to 26 gazelles per km² in 1988. The population in the Ramot Yissakhar is maintained now at 16 individuals per km² in an area of 100 km². This management programme is being evaluated annually for a period of five years to assess its effectiveness.

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GESTION DES GAZELLES DES MONTAGNES DANS LE NORD D'ISRAËL ET PROPHYLAXIE DES MALADIES DE LA FAUNE SAUVAGE. – D. Baharav.

Résumé : D'importantes populations de gazelles des montagnes (Gazella gazella), qui s'étaient développées dans deux réserves d'Israël suite à la politique de conservation de la faune, ont été décimées par la fièvre aphteuse. Pour prévenir le retour de tels événements, on a mis au point un plan de stabilisation du nombre des gazelles femelles à 1 000 dans la réserve du Sud-Golan et 700 dans celle de Ramot Yissakhar. De ce fait, la densité des gazelles dans le Sud-Golan est tombée de 40 par km² en 1986 à 26 par km² en 1988.

MOTS-CLÉS : Animaux sauvages - Conservation - Contrôle des populations - Gazella gazella - Gestion de la faune - Israël.

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GESTIÓN DE LAS GACELAS MONTAÑESAS EN EL NORTE DE ISRAEL Y CONTROL DE LAS ENFERMEDADES DE LA FAUNA SALVAJE. – D. Baharav.

Resumen: Grandes poblaciones de gacelas montaÑesas (Gazella gazella), que se habían desarrollado en dos reservas de Israel como consecuencia de la política de conservación de la fauna, han sido diezmadadas por la fiebre aftosa. Para evitar la reaparición de tales hechos, se elaboró un plan de estabilización del número de gacelas hembras a 1.000 en la reserva de Golán del Sur y a 700 en la de Ramot Yissakhar. Por tal motivo, la densidad de las gacelas en Golán del Sur ha caído de 40 por km² en 1986 a 26 por km² en 1988.

PALABRAS CLAVE: Animales salvajes - Conservación - Control de las poblaciones - Gazella gazella - Gestión de la fauna - Israel.

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