

Oryx

The plight of the Endangered mountain gazelle

By Yoram Yom-Tov & Uri Roll, 10th June 2020

The Endangered mountain gazelle *Gazella gazella* was once widespread throughout the Fertile Crescent in parts of present-day Israel, Lebanon, Jordan, Syria, Turkey and Iraq. Most of its former distribution range overlaps with areas in the region that are now densely populated by people. Archaeological remains also indicate that gazelles were the main prey hunted by people throughout the Pleistocene. Nevertheless, until the 19th century, the mountain gazelle survived this hunting pressure, and thrived. However, the rise in human population in this region from c. 5.7 to c. 66.5 million during 1900–2016, together with the increased use of firearms and off-road vehicles for hunting, led to the extinction of gazelles from most of this area. Israel and neighbouring territory is currently the last stronghold of the mountain gazelle and is home to c. 5,000 individuals.



Left: Mountain gazelle male in a semi-urban setting, coastal plain, Israel. Photo: Uri Roll. Right: Mountain gazelle in a ploughed field, Western Negev, Israel. Photo: Enav Vidan

Our [research](#) reviews mountain gazelle dynamics in Israel from the beginning of the 20th century and provides an outlook for the conservation of the species. During the 1900s Israel's human population increased steadily by 2% per year. The human population density is currently c. 430 persons per km² and is forecasted to continue to rise. This presents an array of threats to the mountain gazelle. These include: habitat change, fragmentation and isolation by roads, railways

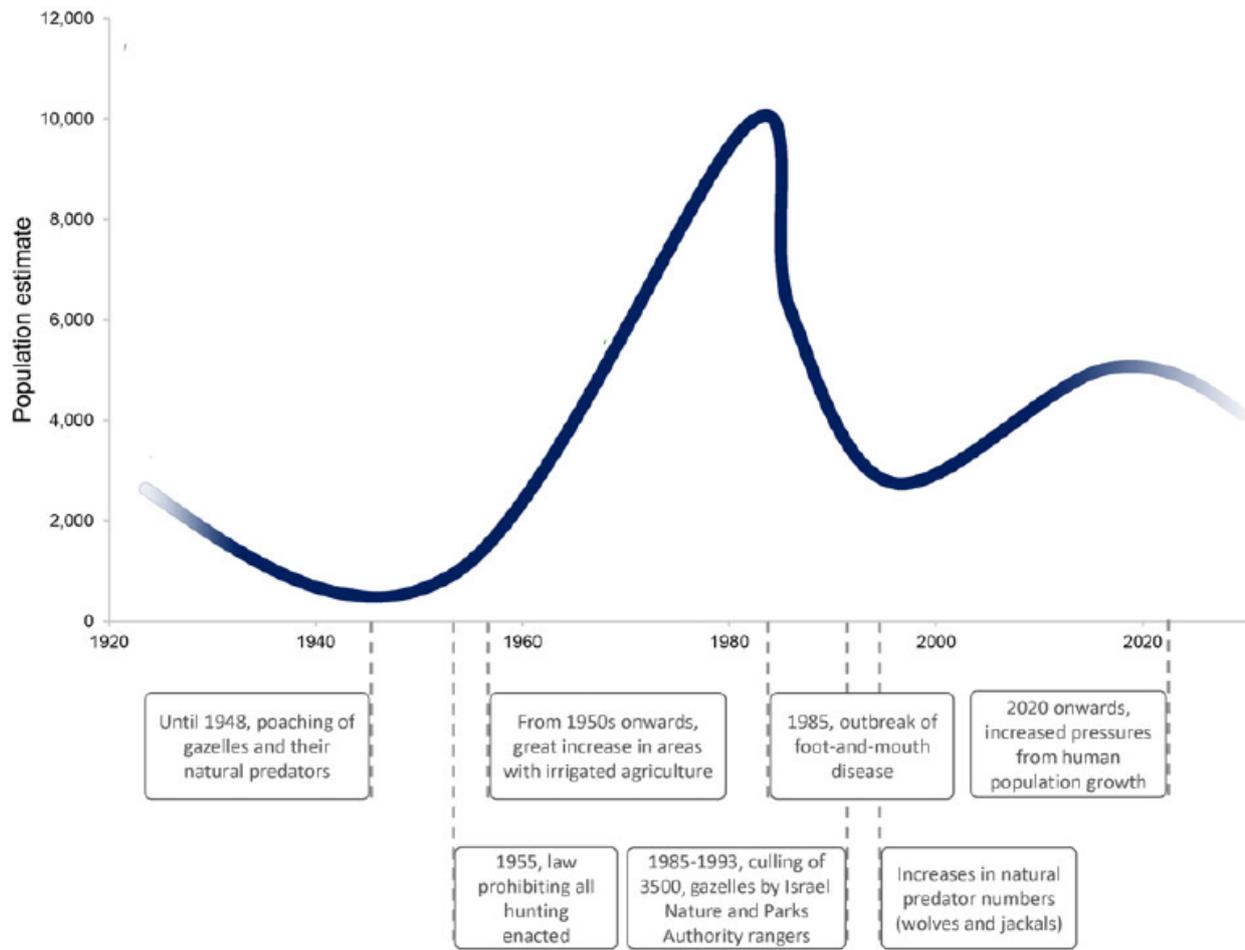
and fences, predation by an increasing population of natural predators and feral dogs, poaching, and collisions with road traffic. These threats often act in synergy, amplifying their effects.



Mountain gazelle looking at a highway intersection, Jerusalem mountains, Israel. Photo: Amir Balaban.

In our [article](#) we present an overview of how these factors acted in the past and are currently threatening the survival of this species. We also review the policy and management actions, both implemented and yet required, to ensure the persistence of the mountain gazelle. In addition, we analyse connectivity of gazelle populations in the landscape, highlighting highly fragmented populations, and suggesting potential interventions. To improve connectivity, we suggest the construction of road over/under passes in strategic locations, the translocation of individuals when needed, and better monitoring of potential genetic bottlenecks of at-risk populations. To reduce the effects of predation we suggest reinstating the control of feral dogs, and improved management of anthropogenic waste. Furthermore, greater efforts should be made, on the legislative, enforcement, and education fronts, to eliminate poaching of gazelles. More broadly, Israel's human population is expected to double in the next 30 years, which will have grave implications for many local species and ecosystems, some of which are of global importance. Efforts should be made at the national level to limit this growth and to halt further land conversions from natural habitat to other uses.

The mountain gazelle exemplifies an ungulate with both great vulnerability to anthropogenic pressures and a large breeding potential. As more and more regions are converted to human-dominated landscapes, pressures on wildlife will continue to increase, and lessons from the mountain gazelle could prove valuable elsewhere.



Mountain gazelle population dynamics since 1920, highlighting the main drivers of its population change.

The article [The plight of the endangered mountain gazelle *Gazella gazella*](#) is available in *Oryx—The International Journal of Conservation*.



Yoram Yom-Tov & Uri Roll

Yoram Yom-Tov is emeritus professor in the School of Zoology, Tel-Aviv University, Tel-Aviv, Israel

Uri Roll is senior lecturer in the Mitrani Department of Desert Ecology, Ben-Gurion University, Beersheba, Israel.