Game Animals: A Substitute for Cattle?

Frank L. Lambrecht

Game ranching may be an alternative to cattle ranching on some rangelands in the United States of American and in Africa.

Million of acres of African savannahs are infested with tsetse flies that carry the deadly disease "nagana" caused by parasitic protozoan flagellates belonging to different species of *Trypanosoma,* making these areas unsuitable for livestock. Only repeated treatment with trypanocidal drugs and costly anti-tsetse fly campaigns reduce losses in herds kept in tsetse flybelts.

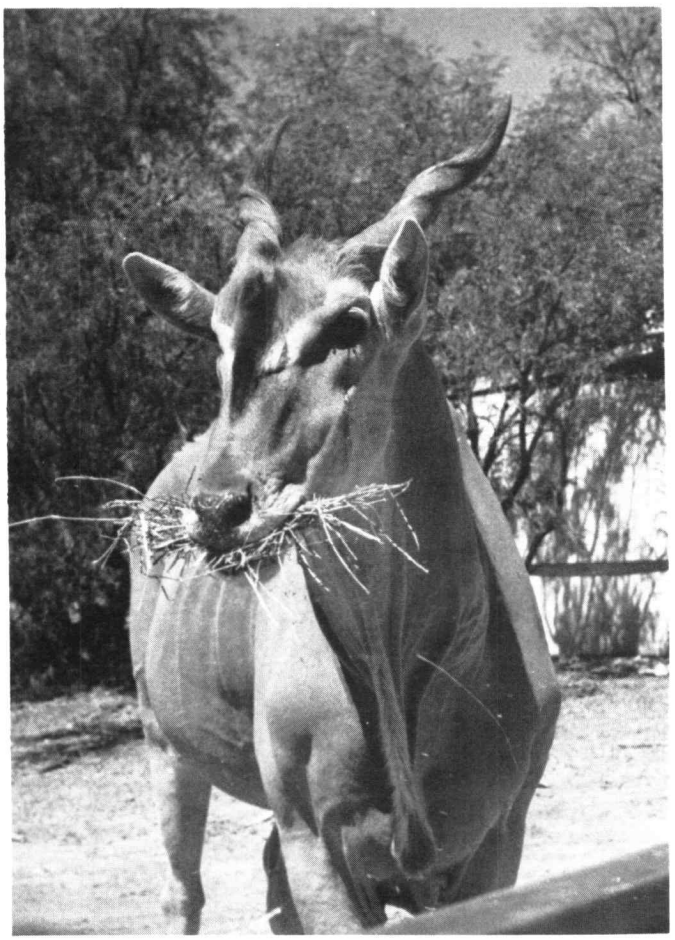
In the United States, conditions of drought and degradation of rangelands have curtailed their full use for grazing of cattle in parts of the southern States. Here, water-boreholes, improvement of ground-cover, and the rotation of pastures have somewhat alleviated the poor conditions for livestock rearing.

In Africa we witness the paradoxical perseverance of settlers destroying the indigenous wildlife, perfectly adapted to the ecosystem, to replace it by introduced cattle. In the United States, vast herds of bison were dissipated as a result of wanton waste and the division of their range with railroads and human settlements.

The herding of livestock began somewhere in the lowlands of the Tigris and Euphrates Rivers in the Middle East about 8,000 years ago. Although hybridization and selection have led to many different varieties, Man has never lost his love for the offspring of the first "cattle." The obsession is such that cattle have been raised in spite of many difficulties and in face of great losses. They have been selected, force-fed, inoculated, fenced in, artificially inseminated, and dispersed all over the world.

Cattle played an important role in the human occupation of the African continent after domesticated *Bos taurus* were introduced in that continent by pastoral Hamitic tribes about 5,000 B.C. Hybridization of *B. taurus* with African *Bos premigenus* produced the many varieties of "long-horn," "short-horn," and "dwarf" now found in many parts of Africa.

The intermarriage of the Hamitic pastoralists with local tribes during their slow migration up the Nile Valley created the various Nilo-Hamitic Abyssinians, the Berbers and Fulani, the Nuer and Somali, the Maasai and Watutsi, the Turkana and Herero. Accompanied by their cattle susceptible to the deadly trypanosomiasis carried by the tsetse fly, the spread of these people could only occur along tsetse fly-free corridors such as the high country on both sides of the Great Rift Valley. Under colonial governments, sustained efforts were made to eradicate tsetse flies from suitable cattle rangelands. In spite of great costs and difficulties, more and more territories were reclaimed from the fly. This has resulted inevitably in the disappearance of wildlife from many areas and in a marked modification of the natural environment.



Eland. Note its massive build.

In North America, Man depleted the indigenous animal populations and subsequently replaced them with sheep and cattle. The introduction of cattle in Africa had to overcome adverse climatic conditions, harsh environments, and the challege of trypanosomiasis and other parasitic diseases, whereas in North America the temperate climate and the vast areas of healthy prairie lands provided ideal circumstances for the development of a thriving cattle industry. But such favorable conditions are not found everywhere in the United States. In large parts of the southern States, cattle ranchers experience increased difficulties resulting from the effects of overgrazing, the invasion of woody plants, the shortage of surface water, poor grass cover, and other adverse factors.

Instead of trying to create pasture-land suitable to cattle production, perhaps we should look into the practicality of ranching animals better adapted to existing rangeland

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conditions.

History of Game-farming

One of the first known experiments in the domestication of a new breed of animals in Africa was carried out in the Kruger National Park in South Africa around 1906 when the Head Game Warden, J. Stevenson-Hamilton, re-stocked the game reserve with a couple of elands after the 1896 rinderpest epizootic had wiped out most animals of the area, hunters having taken care of those that had escaped the disease. By 1914, the pair had 9 offspring. "They were very docile, being driven out to graze in the mornings and returned to be kraaled (= corralled) at night."

But it was not in Africa that the first attempts were made to domesticate African wild animals. In Russia, 4 male and 4 female elands were imported to the Ukraine in 1892. The herd numbered more than 400 in 1967, part of which has been separated as milking animals. The milk is reported to contain twice as much protein as cow milk and has a longer shelf-life.

In the United States, the first attempt at game-farming was made in the early 1920's with the commercial harvesting of the indigenous white-tailed deer. In Africa, the possibility of game-ranching came into focus following studies of the use of wild animals as a potential source of proteins by Dasmann and Mossman (1960), Posselt (1963), Talbot et al. (1961), and others. Besides observations on domestication, these authors made detailed studies of the practicality of "harvesting" and "culling" of wild ungulates under natural conditions without depleting the game population or decreasing their normal productivity. These studies provided for the first time precise data on biomass figures of wild animals in their natural range and allow comparison of meat production with cattle ranching. The data indicated that under equal circumstances wild animals produce more meat per unit area than cattle. The studies also provided much needed information on wildlife ecology and biology. By 1964 there were more than 3000 farms in Transvaal (South Africa), holding one or several species of game. Game farming has grown in popularity in several other countries: New Zealand, Australia, Latin America, Russia, and in a few less developed countries as Kenya, Mauritius, Taiwan, and China.

Most rangelands in the United States are utilized by cattle. Under ideal conditions of grass-cover and climate this practice has been unilaterally successful and rewarding. In the southwestern United States, marginal grasslands and unpredictable rainfall, overgrazing of sparse grasses leads to periodic or permanent degradation of rangelands. In those areas, the introduction and rearing of other animal species better adapted to the dry environment may be a rewarding alternative if suitable rangeland management is applied.

At the Y.O. ranch, located in Kerr County, Texas, several exotic animal species have been reared and studied for a number of years. Among the nonindigenous animals, the 77,000-acre ranch carries the following African game: eland, greater kudu, oryx, sable antelope, and zebra.

The elands are kept in an area of about 2,000 acres, separated from the rest of the ranch by a 6-ft high wire-mesh fence. The animals have shown complete adaptation to their new habitat and are making full use of the vegetation found typically on the west-central section of the Edward Plateau where the Y.O. ranch is located. The elands browse readily on live oak, cedar, mesquite beans, less frequently on shin oak, chinpakin oak, post oak, and even on prickly pear.

The area occupied by the elands is the natural habitat of the indigenous white-tail deer and it was feared, at first, that competition between the two animals would prove detrimental to their co-habitation. The fear was unwarranted. On the contrary, it was noted that the trimming of the top growth of trees by the elands promoted the spread of lower growth at the level of feeding of the deer. The deer population has actually increased to a degree where it may have to be thinned out to avoid overpopulation of that animal.

In their wild state, elands are timid and hard to approach. Nevertheless, once domesticated they are generally mild tempered. They will actively defend their young from predators—they seldom fall prey to any hunter except Man. Elands mature in 3 years for females, 4 for males. Calves are dropped after 255-270 days. Eland meat is generally quite tender and low in fat content. For every 1,000 pounds of dressed eland carcass there are more than 750 pounds of lean, high protein meat—against 550/1,000 pounds in cattle.

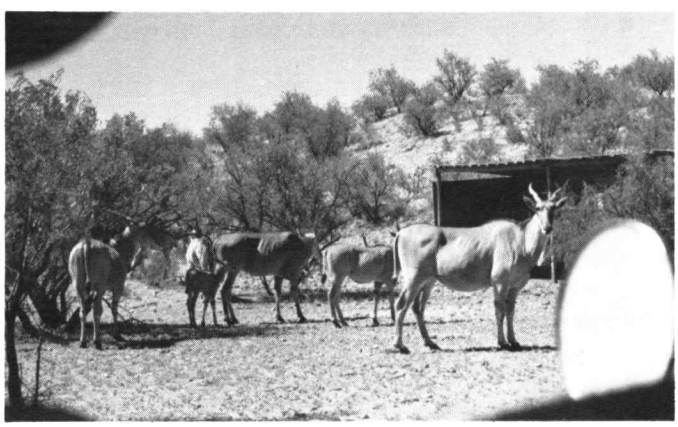
In spite of the successful raising of eland in parts of the United States, practical and commercial exploitation is still in the preliminary stages. A wild animal still, the eland needs a certain amount of territory where it can roam freely and take advantage of the various natural plants. The handling of the eland has not yet reached the ease of that of a completely domesticated animal.

Ranchers are reluctant to sink capital in a new kind of animal-breeding for meat that still awaits public approval as a substitute for beef. But in the Southwest, ranchers hard pressed by dwindling water supply, encroaching tree-growth, or overgrazing problems, may be more inclined to try the venture. They should consider the following advantages:

1. Eland can subsist, if necessary, entirely without water except that obtained from its daily browsing of leaves.

2. Over the last century, at least 75 million acres of southwestern United States suffered the invasion of woody vegetation and the retrogradation of previous grassland. In its present state, this land could be far better utilized by browsing animals, such as eland, than by cattle.

3. A browser, eland could co-exist with cattle without being competitive for grasses. The animal could be introduced into rangeland that has suffered overgrazing by cattle. In fact, it is to be expected that the abused pasture will recover and revert once more to grassland suitable for grazing by cattle. A rotating utilization program for cattle/eland may, therefore, be a sensible plan for marginal rangelands.



Eland herd on the Julian Biddle Dos Arroyos Ranch in southern Arizona. The herd was started in 1970 with six head; by 1977 it numbered 20. The ranch was sold in 1979, lost track of the elands.

4. Freed from the need of regular water supply, elands would be able to browse over a much larger area than cattle, thereby making more efficient use of arid or semiarid regions.

National Parks are traditionally opposed to the introduction of nonindigenous fauna in the natural environment they have pledged to preserve. Some wildlife reserves, however, have been less rigid and have experimented with the controlled introduction of alien animals. Contrary to the gravest fear, the presence of exotic animals has not been detrimental to the local faunas nor destructive to the native plants.

An experiment was started in southern New Mexico in 1970 where the Persian Ibex was released in the steep, rocky, and isolated slopes of the Florida Mountains. In the same year, a herd of about 100 gemsbok, an animal indigenous to the Kalahari Desert, was accepted by the U.S. White Sands Missle Range and was released in the eastern foothills of the San Andres National Wildlife Refuge. Of restricted access to the general public, the area offers excellent opportunities for scientific studies of the released animals in an undisturbed environment. Such kinds of studies add greatly to the usefulness of National Parks and Wildlife Refuges.

All those who have tasted eland meat have praised its high quality and excellent taste. It is lean and has a high protein content. The commerical marketing of game meat will have to overcome the long-standing eating habits of people accustomed to beef. Approved slaughter and inspection rules have to be established. The acceptance of eland meat or other venison for regular consumption could perhaps be speeded up if served in reputable restaurants and made available in regular market places.

The day when an eland steak can be found at the meat stand of a supermarket or eland milk in the dairy section may still be a long way off. But some ranchers are spearheading something that may prove very important not only as a profitable investment but as a desirable alternative source of food at the time when replacement foods may be needed. •

Fee Hunting for Nebraska Big Game: A Possibility

T.O. Dill, J. Menghini, S.S. Waller, and R. Case

Wildlife populations are dependent upon suitable habitat, and maintenance of optimum wildlife habitat is dependent upon land management. Consequently, in states which are primarily in private ownership, wildlife populations are dependent upon the private landowner. Therefore, the private landowner not only determines accessibility to many acres of hunting, he also determines availability of the game.

With present economic conditions, now may be the time for hunters, landowners, and state agencies to look at existing fee hunting systems. By examining and adopting one of these systems, the landowner is not expected to subsidize public recreational activities, and the hunter can expect a better chance of filling a permit and possibly a better chance of obtaining a trophy.

Much of the public has assumed that there is no expense associated with raising wildlife. Many also assume that hunting is a right not restricted by landownership boundaries, and that good wildlife management is an obligation of the landowner to society. Ranching is a business, and all aspects of a ranching operation must be evaluated on an economic basis; this includes the wildlife. The costs to the landowner may be direct because of forage used by wildlife or the "inconvenience" costs associated with hunting. The hunting or nonhunting public that enjoys wildlife should not expect

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White-tailed deer are becoming more predominant in western Nebraska. (Photo courtesy of the Nebraska Game and Parks Commission).