Guanacos in the Falkland Islands

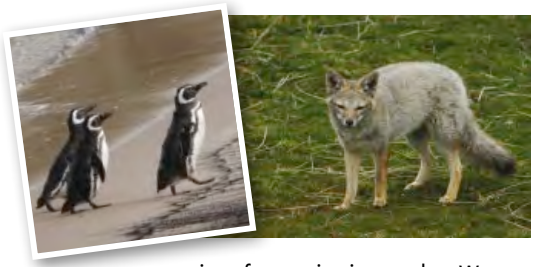
Dr William L. Franklin, Professor Emeritus, Iowa State University, describes himself on his business card as Itinerant Mammalian Wildlife Ecologist. His professional career has focused on field investigations of wild camelids leading some 40 research expeditions mainly to South America. In the late 1980's he heard rumours about a large group of guanacos living on the uninhabited Staats Island in the South Atlantic Ocean. But it wasn't until the year before his retirement in 2000 that he finally put together, with colleague Ron Sarno, the first of several expeditions to investigate.

THE GUANACOS OF the Falkland Islands are there because of a Scottish immigrant named John Hamilton. When he was in his twenties, Hamilton first emigrated to the Falkland Islands in the late 19th century, then to Patagonia where he made his fortune in sheep ranching. Returning to the Falklands 40 years later, he oversaw the introduction of Patagonian wildlife species with the hopes of diversifying the economy of this still young island nation. Hamilton imported hog-nosed skunks, Patagonia grey foxes, lesser rheas, and guanacos to Staats Island during the 1920's and 30's. Only foxes and guanacos remain today. Initially 15 guanacos were introduced to Staats Island in 1938-1939. When they had increased to nearly 300 guanacos in the late 1950s, an effort was made to shoot the entire population in order to replace them with sheep. Ultimately, they were not exterminated but dramatically reduced to only 10 to 20 animals, these gradually increasing to several hundred over the next five decades. Surprisingly the guanacos were never exploited for their hides or fibre which would have fetched at least ten times more than sheep wool.

The Falklands Islands are treeless and often covered with heath and grasses. As might be expected because of its relatively close location in the far South Atlantic Ocean only 745 miles from the Antarctic Peninsula, the Falkland climate is oceanic, generally cool with a narrow temperature range, and commonly windy.

While the islands are spread across an area of some 7,200 square miles, the actual land mass of its 750 islands is 4,700 square miles, much of which is made up of the two main islands, East and West Falkland. Sheep farming has been its economic mainstay for the past century and a half, but in recent years squid fishing and now tourism have become important. Looking on a map, our final destination was an insignificant little dot of only three square miles on the very wild western edge of West Falklands - Staats Island. No people, no running water, no electricity, but home to the Falkland guanacos.

The Falklands are famous for its abundance of Sub-Antarctic sea mammals and birds, including eleven species of penguins. King, Gentoo, Rockhopper, Macaroni, Royal, and Magellanic Penguins all nest in the Falklands. The largest nesting colony of King Penguins outside of the Antarctic is in the Falklands. On excursions out of Stanley it is possible to see 4-5 species of penguins in one day. We sailed by islands covered with the unique-maritime Tussac Grass that grows 6-9 feet and even 13 feet tall, some communities taking on the appearance of grass forests. Tussac is a valuable shelter for species of sea lions and sea elephants, underground nesting marine birds and penguins, ground nesting geese and ducks, and a variety of larger birds.



LANDSCAPE ART

Staats is grandiose in the drama of its setting and beauty. On the southern end of the island is a large plateau surrounded by towering bluffs and cliffs dropping hundreds of feet directly down to the sea. The balance of the linear island is dominated by a series of distinct domed peaks up to 460 feet elevation that are separated by steep slopes and narrow valleys of meadows called greens or 'vegas'.

We had arrived at the beginning of the annual birth season, so there were a lot of fat mammas about to give birth. Our daily routine was focused around our research objectives, but participants got to choose their activity and distance to be hiked. One of the principle goals was to do a complete survey of the guanaco population, so we spent the first number of days hiking three to six miles over the island to learn the terrain and how to classify animals by sex, age and reproductive status. When the opportunity availed itself, we hand-captured and tagged newborn babies for individual identification, gathered skulls from old carcasses later to be measured, collected blood and tissue samples for DNA analysis, and mapped the island's plant communities. Our daily hikes were highlighted by sunshine, blue skies and wind. When we conducted the population survey at the end of our stay over the entire length of the three mile long island, we counted a little over 400 guanacos.

The behaviour and natural history of the guanacos on Staats Island during the summer is basically the same as found on the mainland: the population is socially and physically divided up into Family Groups (one territorial male on a territory occupied by transient females and their young), Male Groups (immature and old males spatially separated from family groups), and Solo Territorial Males (a male defending a territory with no females). Surprisingly despite the limited amount of forage on the island, the animals are in fairly good physical condition and the population is suspected to have reached its maximum number. Some obvious differences compared to guanaco populations we have studied in Chile are: adult body size is smaller, birthweight of newborns is less, frequency of undersized and premature newborns is higher, and birth defects occur. While we have yet to complete the laboratory analysis, some of these problems are surely

associated with genetic bottlenecking resulting from the severely reduced population in the early 1960s.

OUTDOOR LABORATORY

So why go through all this trouble? the time, the expense, the risks? From the scientific point of view, it is very much a unique natural experiment in progress. It is an outdoor laboratory whose large mammal population is isolated, relatively small, and completely closed. No animals leave except by death, nor enter except by birth. The powerful component of this ecological drama is that it's all unfolding on an island within a limited, defined resource base. What is there, is there, and no more. It's amazing that the guanacos have not only survived, but are thriving, a strong testimony to their adaptiveness and resiliency. Despite inbreeding and limited resources, the guanacos are doing well under limited and potentially dire circumstances. And that in itself is the final and exciting question we are striving to solve and understand... in the guanaco's own world, on its terms.

The work over the past several decades, and now the Falkland Islands, will give us that much more insight to the guanaco's direct and indirect descendants, the llama and alpaca. ●

THE GUANACO – A RESUMÉ

The guanaco (Lama guanicoe) is the ancestor of the domestic llama. It is found in a wide variety of habitats from sea level to 4,000 metres, including deserts, grasslands and forests. Its distribution spans the dry west facing slopes of the Andes in northern Peru down the coast to central Chile, the arid east slopes of the southern Andes, across the Patagonian foothills and plains and on to the Tierra del Fuego and Navarino. There were an estimated 30 to 50 million guanacos when Europeans first arrived in the late 1500's. The guanaco's success is due to its flexible social organisation – some populations are sedentary, some migratory, it is a grazer and a browser, can go for long periods without drinking water and can drink brackish or saline water from ocean surf and tide pools.

This article originally appeared in the International Camelid Quarterly. All photos appearing in this article were taken by the author except where noted.

NOTED WORKS OF BILL FRANKLIN FOR ADDITIONAL READING:

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