

## NEWS FROM ACADEMY BAY

**Ecología de los Chivos Ferales (*Capra hircus*) en el Volcán Alcedo.**—En la Isla Isabela hasta hace 12 años, la distribución de los chivos ferales se restringía sólo al Volcán Sierra Negra. Sin embargo, en los últimos 4 años la migración y colonización se incrementó rápidamente hacia el norte de la Isla. Actualmente los chivos están ocupando diversas áreas del Volcán Alcedo. Consecuentemente, los efectos ecológicos que pueden ocasionar estos herbívoros pueden ser extremadamente devastadores con la inminente destrucción de la cobertura vegetal, erosión del suelo, probable extinción de especies de plantas nativas y endémicas y la eventual competencia por alimento y hábitat con la mayor población de tortugas terrestres (*Geochelone elephantopus vandenburghi*) del Archipiélago (3 a 4,000 individuos). Con estos antecedentes y buscando información que permite especializar los métodos de control, manejo, y erradicación de chivos se realizó durante 1991 un estudio sobre la distribución, estructura poblacional, área de vida, ciclo reproductivo, y comportamiento alimenticio entre otros de los chivos.

Los chivos en el Volcán Alcedo están distribuidos en el Sur, lados Este, y Suroeste del mismo. Grupos esporádicos se localizan en las costas con tendencia general de migrar y ocupar la parte norte del Volcán. Las migraciones más representativas de las poblaciones de chivos se dan en la época de garúa o de frío, debido principalmente a la falta de agua y de alimento. Existen solamente tres grupos de chivos en el cráter y uno en el Suroeste del Volcán, con un promedio de 18.2 individuos/rebaño. El tamaño y composición de los rebaños no varía con las estaciones climáticas. El área de vida de los chivos en el Volcán fue de 1.3 km<sup>2</sup>, el área ocupada por las hembras fue mayor que la de los machos pero no difieren significativamente en ninguna época del año. Los chivos se reproducen durante todo el año, con picos de reproducción en la época de calor. Solamente de cinco especies de plantas se alimentan los chivos, siendo la más frecuente *Blainvillea dichotoma* (Compositae). Existe competencia por la disponibilidad alimento y espacio entre los chivos y tortugas, especialmente en la época de frío. Se incrementó grandemente el rendimiento, eficacia de la cacería con el uso de radiotelemetría y con

la información obtenida. Esto permite planificar estrategias de diferentes niveles para el control y el posible exterminio de esta especie en el Volcán. **Edgar Muñoz, Estación Científica Charles Darwin, Isla Santa Cruz, Galápagos, Ecuador.**

**Ecology of Feral Goats (*Capra hircus*) on Alcedo Volcano.**—Twelve years ago, on Isla Isabela the distribution of feral goats was restricted to Sierra Negra Volcano. However, within the last 4 years, migration to and colonization of areas to the north increased rapidly and goats are now found on Alcedo Volcano. The ecological effects that these herbivores can cause could be devastating, with destruction of the vegetative cover, soil erosion, possible extinction of native and endemic plant species, and competition for food and space with the largest population of giant tortoise (*Geochelone elephantopus vandenburghi*) in the Archipelago, numbering 3,000-4,000 individuals.

Given this background and a literature search that allowed specialization in the methods of control, management, and eradication of goats, a study was conducted in 1991 on the distribution, population structure, home range, reproductive cycle, and feeding behavior of the goats.

The goats on Alcedo Volcano are distributed in the southern, eastern, and southwestern flanks. Sporadic groups are found on the coasts and have a general tendency to migrate towards and occupy the northern part of the volcano. The most representative migrations of the goat population occur in the garúa or cold season, due principally to the lack of water and food at this time. Only three groups of goats occur in the caldera and one in the southwest of the volcano, with an average of 18.2 individuals per herd. The size and composition of the herds do not vary with the seasons. The home range of the goats on the volcano averaged 1.3 km<sup>2</sup>. Females averaged larger home ranges than males although the difference was not significant in either season of the year. Reproduction occurred throughout the year, with peaks in the hot season.

Only five species of plants were recorded as being consumed by goats, with *Blainvillea dichotoma* (Compositae) being the most frequently eaten. There is competition for food and space between goats and tortoises, especially during the cold season.

The yield and efficiency of hunting efforts increased greatly with the use of data obtained with radiotelemetry. The information gained from the study will permit the planning of strategies for the control and possible elimination of goats from Alcedo Volcano. **Edgar Muñoz, Charles Darwin Research Station, Isla Santa Cruz, Galápagos, Ecuador.** (Translated by Gayle Davis-Merlen.)

**Pepino War, 1992.**—If I had been born in the Guasmo of Guayaquil, into the abject poverty that occurs there, into a world of harsh survival, into a world without trinkets and fancy toys such as television, Betamax, and gaudy clothes, I would jump with glee to be offered ten thousand sucres a day to pick animals from the sea floor, to be able to join the wealthy elite gaining the power to buy my own baubles and vodka and Nike® shoes.

Thus it was that people were drawn to the black shores of the western islands of Galápagos in search of a fortune lining the floor of the ocean, their pathetic camps gaining a toehold on the harsh shoreline under a brilliant sun. It sparked a war between the conservationists, most of whom probably had their vodka and Nike shoes, and the entrepreneurs and employees of the ill-conceived plan to rashly overexploit a resource, sea cucumbers, or “pepinos del mar,” in one of the world’s most famous archipelagos.

It was, in the end, after accusations, threats, and anger, a victory for the conservationists. Stumps of cut mangroves will now be healing. Endemic rice rats on Fernandina will hop, kangaroo-fashion, during the dawn and dusk under the brooding volcano, temporarily free from the imminent threat of extinction by the accidental introduction of exotic rats by people unaware of the damages rats cause. The treasure seekers have returned, bankrupt, to the Guasmo. And we will sit down to sip our vodka and remove our new Nike shoes from our tired feet. **Godfrey Merlen, Isla Santa Cruz, Galápagos, Ecuador.**

**Editor’s Note.**—Godfrey Merlen’s graphic prose refers to one of the most recent face-offs between commercial pressures to allow unlimited harvest of natural resources and the desire to conserve Galápagos ecosystems. The conflict comes from economic desires to exploit resources in Galápagos risking major ecological perturbations versus the goal of preserving Galápagos for all of Ecuador and humanity by limiting commercial exploitation of resources to levels and uses that are sustainable and compatible with conservation of the terrestrial and marine ecosystems. In contrast to the long-term, ongoing management studies conducted in the terrestrial environment by the Servicio Parque Nacional Galápagos and the Charles Darwin Research Station, little is known about the potential sensitivity of Galápagos marine communities to commercial exploitation. While the battles between entrepreneurial and conservation interests will continue, clearly more scientific studies are needed in this environment before commercial activities can be safely permitted. [THF]

