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THE POPULATION ECOLOGY OF CAPYBARAS (*HYDROCHAERIS HYDROCHAERIS*)  
AND THEIR MANAGEMENT FOR CONSERVATION IN BRAZILIAN AMAZONIA

<sup>de Alencar</sup>  
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Considered one of the animal species with the most potential for sustainable harvest in South America, capybara (*Hydrochaeris hydrochaeris*) has been exploited since pre-columbian times. The species displays important ecological and behavioural prerequisites for agricultural domestication, namely fast growth rate, high reproductive output, sociality and a cheap diet. Today, despite protection in most countries, capybara are hunted all over their range for meat (and in some cases, hides) or to achieve perceived pest control. Although there may have been local extinctions, the species is not endangered. In fact, the advancing conversion of neotropical forest into grassland is potentially creating new capybara habitat, but the high hunting pressure in some areas has led to much lower population densities than the environment can support.

The only large-scale commercial harvesting of capybara is being conducted in Venezuela. In Brazil, even though hunting is prohibited, capybara meat is commonly found in rural markets in small villages in Amazonia, and some illegal control of their numbers is carried out in areas where they are perceived to compete with cattle for food or are considered pests of sugar cane and rice plantations. The only method of wildlife exploitation permitted in Brazil involves captive rearing and although there are already some ranches producing capybaras, their economic feasibility is doubtful. Seasonally flooded savannas like those present in the Brazilian Pantanal of Mato Grosso and along the Amazon valley, are suitable for capybara hunting in a similar manner to that used successfully today in Venezuela. The development of a management system for capybara in Brazilian Amazonia is urgently required for its conservation.

This study was carried out on Marajó Island in Pará (at the mouth of the Amazon River), with the aim of answering the following questions: how can numbers of capybara be increased in decimated populations; what harvesting regime offers a sustainable yield; and how can numbers in populations with high rates of increase be stabilized or reduced? As all these questions can be investigated by the manipulation of the dynamics of the population, we studied specifically how capybara numbers vary and what are the main sources of variation in capybara population size. Research methodology consisted of census counts of a population spared from hunting, a study of a sample of the population hunted in the area and a comparison of the spatial organization of capybara groups in two areas having different availability and distribution of resources.

Preliminary results showed that the capybara breeding season in Marajó Island takes place during the early rainy season (December/January,) with high juvenile mortality occurring during the middle of the rainy season probably due to the flood. The age structure in the study area indicated a high population turnover, with high male mortality within the first two years and higher female survivorship up to three years of age. This was

probably caused by higher female than male recruitment to the social groups. The life span of capybara in the area was 6 - 7 years. The incidence of pregnancy was 1.2 litters a year with a decrease in female fertility after four years of age. Litter size averaged 4.2 live fetuses. The sex ratio of the adult population was 1.0:1.09  $\sigma$ : $\varphi$  and 1.0:1.08  $\sigma$ : $\varphi$  at birth. Average adult weight was 52.41 kg. Estimated fecundity was 2.57 females/female/year.

This information will be used for the development of a management and translocation plan that will be tested by a three year experiment in the near future.

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