

# DIETARY INTAKE AND DIGESTION IN SNOW LEOPARDS (*UNCIA UNCIA*) AT THE BRONX ZOO

Danielle Armato, BS<sup>1</sup>, Lisette Ramos, BS<sup>2</sup>, Yvonne Monge, BA<sup>2</sup>, Diana Tancredi<sup>2</sup>, and Ellen Dierenfeld, PhD, CNS<sup>1\*</sup>

<sup>1</sup> Department of Wildlife Nutrition, Wildlife Conservation Society, Bronx, NY <sup>2</sup> Department of Mammalogy, Wildlife Conservation Society, Bronx, NY

## Abstract

Although the nutritional requirements of the domestic cat are well known<sup>3</sup> and various investigations have been conducted with larger exotic felids<sup>2, 5, 1</sup> no published information on digestion in snow leopards, *Uncia uncia*, is available. Two three-day intake and digestion trials were conducted on 4.6 adult (ages 3-15 years) captive-born snow leopards at the Bronx Zoo, Bronx, NY in December, 1996. Routine management was not altered during the study; leopards were housed outdoors in individual concrete holding dens. Body weight averaged 37.76 kg ± 5.92 kg (mean ± SD) and remained stable throughout the trial. Each cat was offered 1.14 kg of Nebraska Frozen Feline Diet (Animal Spectrum, North Platte, Nebraska, 69102). Total fecal output was collected daily, and fecal and dietary samples were analyzed according to standard laboratory techniques. Diets (n=2) averaged 59.96 ± 1.70% water, 47.31 ± 3.96% crude protein, and 38.31 ± 4.15 % crude fat, and were completely consumed. Snow leopards ate 2 to 2.5% of body mass on an as fed basis (1 to 1.5% dry matter [DM]), with a DM digestibility of 71.90 ± 10.73%. Crude protein averaged 90.88 ± 1.34% digestible, and crude fat, 94.50 ± 1.71%. Crude protein digestibility was somewhat lower than the expected value (approximately 95%), which may be due to the inclusion of non-meat proteins in the commercial preparation. During this study each cat consumed a calculated 3053 kcal of digestible energy ([DE].<sup>4</sup> Male leopards (mean weight 43.2 kg) were found to have a DE intake of 181 kcal/kg<sup>0.75</sup> and female snow leopards (mean weight 34.1 kg) had a DE intake of 216 kcal/kg<sup>0.75</sup>. Although activity level was not measured during the trial, all snow leopards maintained body condition for the duration of the study, indicating that they were being fed in accordance with their energy needs. Barbiers *et al*<sup>2</sup> measured DE intakes in leopards (*Panthera pardus*) as 182 kcal/kg<sup>0.75</sup> in males (average weight 53.8 kg) and 166 kcal/kg<sup>0.75</sup> in females (average weight 41.1 kg). In the study conducted by Allen *et al*<sup>1</sup>, digestible energy intakes of the clouded leopard, *Neofelis nebulosa*, and the cheetah, *Acinonyx jubiatatus*, (weight range approximately 15-45 kg) was measured to be 30-160 kcal/kg<sup>0.75</sup> and 150-185 kcal/kg<sup>0.75</sup>, respectively. Despite similar body sizes, there is a wide range in DE intakes among these different felid species. Our data further support earlier theories<sup>1</sup> that maintenance energy needs of exotic felids are not merely a result of body size, but rather may be due to species-specific differences in energy expenditure strategies.

## LITERATURE CITED

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