

**COMPARISON OF TWO ARTIFICIAL FEEDING PROGRAMS FOR AMAZONIAN MANATEE CALVES (*Trichechus inunguis*) IN REHABILITATION.** Guerra Neto, Guilherme<sup>1</sup>; Pavanato, Heloise<sup>1</sup> & Marmontel, Miriam<sup>1</sup>. Instituto de Desenvolvimento Sustentável Mamirauá. [guigulo@gmail.com](mailto:guigulo@gmail.com)\*

The Centro de Reabilitação de Peixes-bois Amazônicos of the Instituto de Desenvolvimento Sustentável Mamirauá has rehabilitated orphaned calves during the past seven years. By March 2013, the milk diet (D1) was empirically employed and was based on weekly monitoring of the individual weight gain. The formula consisted of milk powder, established amounts of water and canola oil, following proportions from 15 to 45 g of milk in 100 ml of water according to the calf's weight. Taking into account the need to establish safe standards in bottle-feeding, to improve weight gain and growth and to reduce the rehabilitation period, a new study was started in April 2013. It was proposed to take into account the metabolism of the species by calculating Daily Calorie Needs for Maintenance (D2) after the period of adaptation to the artificial milk diet. For D2, the total volumes were calculated by the bottle considering the individual concentrations in grams per 100 ml of milk and water in kcal/ml. Dietary calculations were adjusted according to the subsequent weighing of calves. The objective of this study was to compare the weight gain in calves feeding on two different diets employed (D1 and D2), in the same period of time and without considering the *ad libitum* consumption of vegetation. The differences of weight gain of nine different calves were tested by an analysis of variance (ANOVA). To obtain a representative sample of the weight increase, only individuals adapted to the artificial milk diet and of similar age, total length and weight were considered. Thus, we considered only the period in which the animals showed progressive weight gain, and the limit for the completion of treatment was established with the start of weaning. The results show that the D2 diet was more efficient in weight gain in relation to the D1 diet ( $\alpha = 0.05$ ,  $p = 1.5 \cdot 10^{-11}$ ), with a mean weight increase per month of 6386 kg, while D1 had an average increase of 2861 kg. We conclude that the diet implemented from 2013 satisfied the nutritional needs of manatee calves in rehab. This study indicates that artificial feeding program based on daily NCM can be used for rehabilitation of manatee calves.

**PRELIMINARY ANALYSIS OF OPPORTUNISTIC SIGHTINGS DATA SHOWS YEAR-ROUND PRESENCE AND SEASONALITY IN HABITAT USE BY MANATEES IN BACALAR CHICO, BELIZE.** Jenko, Klavdija<sup>1\*</sup>; Castelblanco Martinez, Nataly<sup>2</sup>; Chapman, Jennifer<sup>1</sup> & Gough, Charlotte<sup>1</sup>. <sup>1</sup>Blue Ventures, <sup>2</sup>Oceanic Society; [klavdija@blueventures.org](mailto:klavdija@blueventures.org)\*

Opportunistic sightings data of Antillean manatees (*Trichechus manatus manatus*) in Bacalar Chico Marine Reserve and National Park (BCMRNP) were recorded between March 2010 and December 2013, and focused manatee searches were conducted from January until August of 2013. Videos and photos of manatees were collected over the four-year period to build a photo-identification catalogue. Manatees were present in BCMRNP year-round, with a total of 230 individuals observed over 124 sighting events in four years. The sightings were unevenly distributed across the mangrove area and shallow backreef, indicating potential hot spots for the species within the reserve. Comparison of sighting frequencies between seasons showed no statistically significant difference ( $H = 1.792$ , 2 df,  $P = 0.408$ ). Sightings were significantly more frequent in the sheltered mangroves than on the reef during Norte season ( $U = 43.000$ , 24 df,  $P = 0.019$ ), suggesting some habitat preference during this time, however there were no significant differences between habitats during the dry (from March until June) and rainy (July until October) seasons. Manatees were often solitary or in small groups with almost 90% of sightings being comprised of less than four animals, and over 50% of sightings being lone individuals. Groups larger than four individuals were observed only in mangroves. Mother-calf pairs were also observed during the four year period. Five of the seven mother-calf sightings were made in the mangroves during the Norte season, suggesting that BCMRNP mangrove area may provide an important nursery ground. Analysis of the photo material enabled identification of six individuals based on their natural or human induced markings such as scars from boat propellers. Expanding our current photo-identification database will enable us to study individual life history traits and when compared with other databases gain information on connectivity within and outside of Belize. These preliminary results highlight important seasons and areas for manatees in the BCMRNP. Further research into the spatial and temporal usage patterns of manatees through the implementation of a manatee monitoring program will be crucial in the development of management for BCMRNP. Potential management actions might include communication and enforcement of laws for manatee-related tourism in BCMRNP, the introduction of No Wake Zones in high manatee-use areas, and temporal or spatial closures for boat traffic where manatees congregate in high concentrations and/or to limit disturbance to nursery grounds.