Pelvis and hindflipper muscle reconstruction of leatherback sea turtles (*D. coriacea)*

Paige Mitchell, Shannon Martinson, Laura Bourque, Megan E.B. Jones

Department of Pathology and Microbiology, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PE, Canada (PM, SM, MEBJ)

Canadian Wildlife Health Cooperative, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PE, Canada (LB, MEBJ)

Leatherback sea turtles (*Dermochelys coriacea*) are the largest living sea turtle species and hold records for their diving abilities and vast geographical distribution. Despite these favorable characteristics, the mortality rate of *D. coriacea* continues to increase due to anthropogenic causes. Over the last two decades, the Canadian Species at Risk Act has refined its action plan alongside other conservation initiatives to recover the population. Such efforts are focused on better understanding this species' life history, identifying and reducing risks, and preserving nesting locations. Similarly, increasing knowledge of the species' anatomical structure and function may facilitate conservation efforts, such as opening opportunities for increased medical intervention (i.e., developing prosthetics for entanglement victims). This anatomic study analyzed computed tomography and magnetic resonance imaging scans of the pelvis and hindflippers of two *D. coriacea* specimens obtained from the Canadian Wildlife Health Cooperative wildlife pathology service. The images were rendered to generate detailed diagrams and both virtual and physical three-dimensional models to guide the hindend dissections. A GoPro was used to record the dissections for future reference. Each muscle belly identified was photographed and thoroughly described – the anatomic location relative to the hindend bone anatomy, length and width, fiber orientation, and the number of each muscle belly and associated tendons – before removal. Muscles were then desiccated and weighed to determine their mass ratio. This study aims to increase documentation on the anatomic features of this endangered species so that we can improve the rehabilitation and conservation methods, thus increasing the total population of *D. coriacea*.

Research Grants: None.

Student support: AVC Veterinary Summer Research Award, Canadian Wildlife Health Cooperative.

Field of Research: Anatomy