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Meeting Abstract

P3-115 Monday, Jan. 6 **Fiber-type profile of the locomotor muscle of spotted seals** NAZAR, S*; DEAROLF, JL; THOMETZ, NM; BRYAN, A; REICHMUTH, C; Hendrix College, Conway, AR; Univ. of San Francisco, CA; Alaska Department of Fish and Game, Fairbanks; Univ. of California, Santa Cruz nazarss@hendrix.edu

Spotted seals (*Phoca largha*) can forage in the water column for 1 to 4 minutes and dive to a depth of 4 to 50 meters. Sea ice plays a significant role in the lives of spotted seals, as they depend heavily on it for reproduction and even molting. Climate change and global warming are two of the biggest environmental concerns for spotted seals, as they both directly affect the formation and melting of seasonal sea ice, the habitat for these seals. In order to develop new conservation strategies for spotted seals and to learn more about how climate change is affecting them, it is important to study their unique anatomy and physiology. In this study, we examine the fiber-type profile of a locomotor muscle of spotted seals, the longissimus dorsi (LD). We cut sections of ten spotted seal LD muscles in the cryostat and put them on microscopic slides. We then stained these sections of the LD muscles for their myosin ATPase activities, as well as their reaction to two myosin heavy chain antibodies (A4951-slow, type I myosin, SC71-fast, type IIa myosin). We also captured digital images of the stained slides, categorized fibers based on their dark and light staining, and counted them. We also measured the diameters of the fibers using ImageJ. The fiber-type profile and fiber diameters of the LD muscle will be compared to those of two other Arctic seals to examine patterns in these features. Therefore, studying the fiber-type profile of the LD will enable us to learn more about the swimming and diving behavior of spotted seals.