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MOVEMENT PATTERNS OF STRIPED BASS IN THE MINAS PASSAGE

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The Bay of Fundy's Minas Passage (5 km wide) is currently the site for in-stream tidal energy turbine testing. It is also an important pathway for many commercially and recreationally important migratory fish species. Among these are striped bass (*Morone saxatilis*), a recently listed endangered species. The objectives of this project were to determine the movement patterns of juvenile and adult striped bass within the passage, and to assess the potential risk of interaction



with tidal turbines. A total of 40 transmitter-tagged striped bass (20 adults and 20 juveniles) were tracked using 29 bottom-moored VEMCO acoustic receivers. Two lines of receivers spanned the width of the Minas Passage and a third line spanned the turbine test area. All recovered receivers (n=27) logged valid detections, with the highest number of detections occurring in July. Of the 40 striped bass tagged, 25 were detected, with more adults detected (75%) than juveniles (50%). Adult fish were detected at depths throughout the water column, while juveniles were detected only in the top 25 m (above turbine height). Fifteen striped bass (mostly adults) were shown to move back and forth through the passage at a mean swimming speed of 2.35 ± 0.71 m/s. Fish were detected more often at night than during the day. Detection frequency was higher during neap tidal cycles than during spring tidal cycles and was negatively correlated with current speed. There were slightly more detections during ebb tides than during flood tides. Unexpectedly, individual striped bass were shown to make multiple crossings of the Minas Passage during summer; they pass through the turbine test site and adult striped bass swim at depths that include turbine hub height. The ability of striped bass to detect and avoid tidal turbines when travelling at high speed remains unknown.

Freya Keyser graduated from Lockview High School in Fall River, NS in 2009. She is in her 4th year of Biology at Acadia and is currently completing her Honours thesis. During her time at Acadia, she has received a number of scholarships, including an Honours Summer Research Award that allowed her to complete this research. In addition to her studies, she enjoys coaching a local girls' basketball team. Freya hopes to pursue a research career in marine biology after completing a Masters degree in this field.

