



## **Abstract:**

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Category: Environment

### ***Addressing Risks to Fish: Movements of Striped Bass in and Near a Tidal Energy Test Site***

The Bay of Fundy's macrotidal, high-flow Minas Passage has been selected for in-stream tidal energy turbine testing, with turbine installations expected as early as 2015. The passage is also used by migratory fish, including an endangered striped bass (*Morone saxatilis*) population. The main objective of this project was to assess the movement patterns of striped bass in Minas Passage and associated potential risk of interaction with tidal energy turbines. Transmitter-tagged striped bass (27 post-spawners tagged in Stewiacke River, NS and 58 summer migrants tagged off Grand Pré and Kingsport, NS) were tracked from May to November 2011, and May 2012 to April 2013 using bottommoored VEMCO acoustic receivers deployed in complete and partial lines across the passage. Detection data were also collected along the near-shore areas of Minas Basin, and in the Stewiacke River. Of the 85 striped bass tagged, 56 were detected (64%). During the May-November 2011 deployment, there was no clear seasonal pattern of striped bass movement in the Minas Passage; however, post-spawners were generally detected more frequently during the summer months. During the full-year (2012-2013) deployment, smaller bass (<60 cm) were detected occasionally throughout the spring, summer, and fall. Larger individuals were detected much more frequently, with a large proportion of detections occurring during the winter months. Striped bass were detected in or near the tidal energy test site on 13% of days during the 2011 deployment (2 receiver locations), and on 30% of days during the 2012-2013 deployment (12 receiver locations). In total, 33% of tagged individuals were detected in or near the test site. Striped bass generally occupied the top 40 m of the water column, with some large bass using a wider range of depths. While striped bass move through locations and at depths that could be occupied by turbines, the ability of striped bass to detect and avoid turbines when travelling at high speed remains unknown.