

Abstract

The coastal migratory stock of Striped Bass *Morone saxatilis* has supported fisheries off the Massachusetts (MA) coast for centuries. However, despite this historical importance, limited information is available regarding Striped Bass seasonal movement patterns or migratory pathways within MA coastal waters and beyond. Using passive acoustic telemetry, we evaluated the seasonal residency, coastal migration, and stock composition of 159 adult Striped Bass (65–110 cm TL) by using a network of fixed acoustic receivers deployed from 2008 to 2012 in MA coastal waters and along the U.S. East Coast as part of the Atlantic Cooperative Telemetry (ACT) Network. Seasonal monitoring of tagged individuals indicated that adult Striped Bass were present in MA coastal waters north of Cape Cod annually during May–November, moving into and out of the region via the Cape Cod Canal and along the east side of Cape Cod. Of the 159 tagged individuals, 125 (79%) were detected outside of MA coastal waters by the ACT Network and were observed to make seasonal migrations along the coast to overwintering areas of the mid-Atlantic and major spawning areas (Chesapeake Bay, Delaware River, and Hudson River). Numerous tagged individuals exhibited interannual fidelity to summer foraging habitat in MA coastal waters, returning to the region for up to 2 years after tagging. Detection of tagged individuals in known spawning areas revealed that Striped Bass from each major stock were present within MA coastal waters during the summer months, with the Chesapeake Bay stock appearing to be the largest contributor to the population from 2008 to 2010. Collectively, these observations suggest that the seasonal population of adult Striped Bass in MA coastal waters has a diversity of origins, demonstrating the importance of the health of each spawning component to the MA seasonal fishery.