

Coastal spawning migrations of shortnose sturgeon in the Gulf of Maine

Kieffer, M.¹, G. Wippelhauser², and J. Sulikowski³

¹U. S. Geological Survey, Conte Anadromous Fish Research Center, Turners Falls, Massachusetts

²Maine Department of Marine Resources, Augusta, Maine

³University of New England, Marine Science Center, Biddeford, Maine

Twenty-six pre-spawning shortnose sturgeon females acoustically-tagged in the Merrimack River departed the river in early spring, moved 140 km northeast to the Kennebec System mouth, then participated in upstream movements to known spawning sites. Migrants departed Merrimack River wintering sites between 15 March–12 April when river temperatures ranged between 4.1–10.8°C (mean; 7.6°C), and discharges ranged between 306–1,495 m³/s (mean; 608 m³/s), exiting the river between 22 March–22 April during similar river conditions. Migrants entered the Kennebec System between 30 March–4 May, resulting in coastal migration durations of 6.7–20.6 d (mean; 13.8 d). Following spawning activities in the Kennebec System, 21 (81%) migrants returned to the Merrimack River between 5 May–20 June. Two migrants, however, returned later (September and November), and three remained within the Kennebec System. During both pre- and post-spawning migration segments, several fish spent brief periods in the Piscataqua River (four) and the Saco River (six), non-spawning drainages between the Merrimack and Kennebec rivers, demonstrating coastal migration complexity. In addition, among multi-year observations of individuals, four migrated to the Kennebec System spawning sites twice, one of which migrated a third time, suggesting spawning fidelity to the Kennebec System.