Benjamin I. Gahagan

Diadromous Fish Biologist
MA Division of Marine Fisheries
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EDUCATION

University of Massachusetts, Amherst, MA
PhD program, Ecological Conservation — 2016 – Present

University of Connecticut, Storrs, CT
M.Sc in Natural Resources and the Environment — 2007 – 2010

PROFESSIONAL EXPERIENCE

Aquatic Biologist II: Diadromous Fish Biologist – Commonwealth of Massachusetts — April 2012 – Present

- Led diadromous fish restoration, fish passage, and monitoring projects over a large section of coastal Massachusetts. Coordinated program-wide efforts to enhance monitoring of adult spawners returning to rivers in coastal Massachusetts. Led acoustic telemetry studies of striped bass, alewife, blueback herring, and American shad. Led or contributed to multiple grant funded efforts related to scientific research and dam removals.

Faculty Research Assistant – David Secor, University of Maryland – Chesapeake Biological Laboratory — September 2010 – April 2012

- Managed fisheries research lab while participating in three ongoing research projects. Aided graduate students with field work and presentation preparation. Performed a variety of field work including scientific cruises, seine and trawl collections, and acoustic telemetry and water quality monitoring. Created bluefin tuna sampling program, carried out otolith sampling, stable isotope preparation and analysis, otolith ageing and assisted with grant reporting. Participated in multi-agency bluefin ageing workshops.

Seasonal Resource Technician – Connecticut Department of Environmental Protection, Diadromous Project — March 2005 – September 2005, July 2010 – August 2010

- Monitored diadromous fish migrations in eastern Connecticut, participated in population restoration efforts for Atlantic salmon, American shad, alewife, blueback herring, American eel, and sea lamprey.

Graduate Assistant – Natural Resources and the Environment, University of Connecticut — August 2007 – June 2010

- Conducted field collections, lab work, and data analyses to estimate the natal homing rate of river herring using otolith microchemistry and retrospectively examined the effects of age at emigration on fitness correlates. Maintained lab and field research equipment. Successfully published results. Participated in successful grant application, subsequent grant reporting.

Striped Bass Research Crew Leader –Ecology and Evolutionary Biology, University of Connecticut — April 2007 – July 2007

- Captained an electro-fishing boat on the Connecticut River. Supervised and coordinated a team of researchers using mark-recapture techniques to investigate the impact of striped bass on river herring and American shad during spring spawning migrations.

Juvenile Alewife Project Leader – Ecology and Evolutionary Biology, University of Connecticut — April 2006 – August 2006

- Co-authored successful grant application. Conducted an independent research project exploring the environmental and endogenous influences on juvenile alewife emigration from natal nurseries and published results.

SELECTED PUBLICATIONS

Gahagan, B.I. and M.M. Bailey. Surgical implantation of acoustic tags in American shad to resolve riverine and marine restoration challenges. Marine and Coastal Fisheries, *in press*.

Rothermel, E.R., M.T. Balazik, J.E. Best, M.W. Breece, D.A. Fox, **B.I. Gahagan**, D.E. Haulsee, A.L. Higgs, M.H.P. O'Brien, M.J. Oliver, I.A. Park, and D.H. Secor. Comparative migration ecology of striped bass and Atlantic sturgeon in the US southern Mid-Atlantic Bight flyway. PLoS One, *in press*.

LeBlanc, N.M., **B.I. Gahagan**, S.N. Andrews, T.S. Avery, G.N. Puncher, B.J. Reading, C. Buhariwall, R.A. Curry, A.R. Whiteley, and S.A. Pavey. Genomic population structure of striped bass (*Morone saxatilis*) from the Gulf of St. Lawrence to the Cape Fear River. Evolutionary Applications, 2020.

Secor, D.H., M.H.P. O'Brien, **B.I. Gahagan**, J.C. Watterson, and D.A. Fox. Differential migration in Chesapeake Bay striped bass. PLoS One, 2020.

Nelson, G.A., **B.I. Gahagan**, M.P. Armstrong, A. Jordaan, and A. Bowden. A life cycle model for exploring causes of population change in Alewife (*Alosa pseudoharengus*). Ecological Modelling, 2020.

LeBlanc, N.M., S.N. Andrews, T.S. Avery, G.N. Puncher, **B.I. Gahagan**, A.R. Whiteley, R.A. Curry, and S.A. Pavey. Evidence of a genetically distinct population of Striped Bass (*Morone saxatilis*) within the Saint John River, New Brunswick, Canada. North American Journal of Fisheries Management, 2018.

Reid, K., E.P. Palkovacs, D.J. Hasselman, D. Baetscher, J. Kibele, **B. Gahagan**, P. Bentzen, M.C. McBride, and J.C. Garza. Comprehensive evaluation of genetic population structure for anadromous river herring with single nucleotide polymorphism data. Fisheries Research, 2020.

Devine, M.T., A.H. Roy, A.R. Whiteley, **B.I. Gahagan**, M.P. Armstrong, and A. Jordaan. Precision and relative effectiveness of a purse seine for sampling age-0 river herring in lakes. North American Journal of Fisheries Management, 2018.

Marjadi, M.N., A.H. Roy, A. Jordaan, **B.I. Gahagan**, M.P. Armstrong, and A.R. Whiteley. Larger body size and earlier run timing increase alewife reproductive success in a whole lake experiment. Canadian Journal of Fisheries and Aquatic Sciences, 2018.

Rossett, J. A.H. Roy, **B.I. Gahagan**, A.R. Whiteley, M.P. Armstrong, J.J. Sheppard, and A. Jordaan. Temporal patterns of migration and spawning of river herring in coastal Massachusetts. Transactions of the American Fisheries Society, 2017.

Gahagan, B.I., Fox, D.A., and D.H. Secor. Partial migration of Striped Bass: revisiting the contingent hypothesis. Marine Ecology Progress Series, Vol. 525: 185-197.

Secor, D.H., Rooker, J.R., **Gahagan, B.I.,** Siskey, M.R., and R.W. Wingate. Depressed resilience of bluefin tuna in the western Atlantic Ocean associated with age truncation. Conservation Biology, Vol. 29(2): 400-408.

Gahagan, B. I., Vokoun, J.C., Whitledge, G.W. and E.T. Schultz. Estimating anadromous river herring natal stream homing rates using otolith microchemistry. Marine and Coastal Fisheries, June, 2012

Gahagan, B.I., Gherard, K.E. and E.T. Schultz. Environmental and endogenous factors influencing emigration in juvenile anadromous alewife. Transactions of the American Fisheries Society, July 2010.

TECHNICAL COMMITTEES

NOAA River Herring ESA Status Review Team (2018-2019)

ASMFC River Herring and Shad Stock Assessment Sub-Committee (2016- 2018)

Merrimack River Diadromous Fish Restoration Technical Committee (2012 – present)

Connecticut River Atlantic Salmon Commission Technical Committee (2012 – present)

NOAA River Herring Technical Expert Working Group (Stock Status, Habitat, Fisheries sub-groups)