The 2020 Atlantic Salmon Ecosystems Forum

Time flies – Atlantic salmon as an endangered species twenty years later…

January 14-15, 2020
Orono, Maine USA
University of Maine, Wells Conference Center

Illustration Credit: Jack Hornady

Recognizing the International Year of the Salmon (core) in 2019, watch for activities extending into 2020

INTERNATIONAL YEAR OF THE SALMON

2020 Atlantic Salmon Ecosystems Forum
Schedule At A Glance

Begin	End	January 14, 2020
7:00	8:00	**REGISTRATION -** *Refreshments provided*
8:00	8:05	**Housekeeping** *Rory Saunders, NOAA Fisheries*
8:05	8:25	**Welcome to the 2020 ASEF** *Sam Rauch, Deputy Assistant Administrator for Regulatory Programs, NOAA Fisheries*
8:25	9:00	**Sustainability as a framework for rethinking approaches to salmon, society and solutions.** *David Hart, Director, Senator George J. Mitchell Center for Sustainability Solutions*
9:00	9:05	**Session I: 20 Years of Experience Guiding our Future (Part 1 of 2)** *Joshua Royte, The Nature Conservancy, Moderator*
9:05	9:25	**Reflections on Penobscot River Atlantic Salmon: Before and After Listing as an Endangered Species** *Edward T Baum, Maine Atlantic Sea-Run Salmon Commission (Retired)*
9:25	9:45	**From North America to West Greenland and Beyond: management of Atlantic salmon in the North Atlantic** *Martha Jean Robertson, Fisheries and Oceans Canada, Newfoundland and Labrador, Canada*
9:45	10:15	**BREAK** - *refreshments provided*
10:15	10:25	**Science for comfort or conservation- how do we inform and avoid action on fish passage?** *Joseph D Zydlewski, U.S. Geological Survey, Maine Cooperative Fish and Wildlife Research*
10:25	10:35	**Using decision support tools to plan for salmon restoration** *Erik H Martin, The Nature Conservancy*
10:35	10:45	**6 ½ & 19 years Maintaining and Perfecting SHARE's Mission Focus** *Steven D. Koenig, Project SHARE*
10:45	10:55	**Two Decades on the Front Line of Salmon Protection in Maine: A Perspective by the Atlantic Salmon Federation's Andrew Goode** *Andrew Goode, The Atlantic Salmon Federation*
10:55	11:05	**Private forest landowners and aquatic partners getting things done** *Patrick Thomas Sirois, Maine's Sustainable Forestry Initiative Implementation Committee*
Begin	**End**	**January 14, 2020**

11:05	11:55	**Facilitated Discussion** *Joshua Royte, The Nature Conservancy*
11:55	12:00	**Jed Wright Memorial Fund** *Andy Goode, The Atlantic Salmon Federation* *Kate Dempsey, The Nature Conservancy*
12:00	13:00	**LUNCH** - *lunch at the Student Union (not provided)*
13:00	13:05	**Session II: 20 Years of Experience Guiding our Future (Part 2 of 2)** *Christopher Meaney, US Fish and Wildlife Service, Moderator*
13:05	13:20	**Evaluation of genetic diversity in Maine Atlantic salmon** *Meredith L. Bartron, USFWS Northeast Fishery Center*
13:20	13:35	**20 Years of the Atlantic Salmon Stocking Program** Ernie Atkinson, *Maine Department of Marine Resources*
13:35	13:45	**Marine-phase Atlantic salmon** *Timothy F. Sheehan, NOAA Fisheries Service, Northeast Fisheries Science Center*
13:45	13:55	**Opportunities for More Salmon - Let's Do Some Numbers** *John Kocik, NOAA Fisheries Service, Northeast Fisheries Science Center*
13:55	14:05	**Lost & Found: Communicating the Science of Endangered Species** *Catherine Schmitt, Schoodic Institute, Acadia National Park*
14:05	14:35	**Facilitated Discussion** *Christopher Maeney, US Fish and Wildlife Service*
14:35	15:05	**BREAK** - *refreshments provided*
15:05	15:10	**Session III: Age, Growth, Environmental Stressors** *Daniel McCaw, Fisheries Program Manager, Penobscot Indian Nation*
15:10	15:25	**Linking ocean temperature phenology to migration timing of Atlantic salmon in the Penobscot River** *Katherine Mills, Gulf of Maine Research Institute*
15:25	15:40	**Growing faster but dying younger? Scale analysis of North American Atlantic salmon captured in Greenland suggests increased growth at sea despite declining marine survival.** *Michael D. Tillotson, Gulf of Maine Research Institute*
Begin	**End**	**January 14, 2020**
15:40	15:55	**Linking Ecosystem Change, Growth, and Survival of Penobscot River Atlantic Salmon** *Miguel F Barajas, Gulf of Maine Research Institute*

15:55 16:10 **Marine migration of Atlantic salmon smolt and kelt from a Canadian River (Western Arm Brook, Newfoundland and Labrador).**
Nicholas I. Kelly, Fisheries and Oceans Canada, St. John's, NL, Canada

16:10 16:25 **Assessing the effects of multiple stressors on the estuarine and early marine survival of Atlantic salmon postsmolts**
Brent Wilson, Fisheries and Oceans Canada

16:25 16:40 **Natural transmission routes at sea and influences of coastal aquaculture on infection profiles of wild Atlantic salmon**
Jonathan Carr, Atlantic Salmon Federation, Chamcook, NB

16:40 16:55 **Age structure of non-reproductive, partial migratory populations of sturgeon species in the Penobscot River, Maine**
Catlin Ames, School of Marine Sciences, University of Maine

16:55 17:10 **Aquaculture as a part of the Salmon Ecosystem: NOAA and Sea Grant projects in Maine**
Gayle Zydlewski, Maine Sea Grant

17:10 19:00 **Poster Session and Social** - *refreshments provided, beer and wine are available*

19:00 **An informal gathering at a local brewery to socialize with friends and colleagues from around New England and, Quebec and Atlantic Canada**
Black Bear Brewing Co., 19 Mill St. Orono, ME 04469

Poster Presentations

Distribution and abundance of zooplankton in the Penobscot River estuary
Cody T. Dillingham, School of Biology and Ecology, University of Maine

Working Together For Healthy Streams: the US FWS National Fish Passage Program
Cathy Bozek, US Fish and Wildlife Service

Cost Effective Fish Passage Improvement Tools and Techniques for Community Groups
Amy Weston, Nova Scotia Salmon Association's Adopt a Stream Program

Movements of radio-tagged Atlantic salmon (*Salmo salar*) in the Penobscot River, Maine
Erin Peterson, University of Maine

Science communication: methods, importance, and impact of community engagement during the International Year of the Salmon
Nicole J. Beauchamp, Ocean Tracking Network, Dalhousie University

Growth and habitat use of juvenile alewife in Highland Lake, Windham, Maine
Emma Dennison, University of Southern Maine

Can Clam Shells Reduce the Impacts of Stream Acidification in Eastern Maine?
Emily Zimmermann, Maine DOT

The Maine Water Temperature Working Group: *Working collaboratively to identify thermal refugia for cold water species*
Graham Goulette, NOAA Fisheries

***R*estoring Stream, Wetland, and Riparian Processes in Third Lake Stream**
Steven D Koenig, Project SHARE

Distribution and abundance of zooplankton in the Penobscot River estuary
Cody T. Dillingham, School of Biology and Ecology, University of Maine

Acid rain and salmon recovery: success and expansion of the West River Acid Rain Mitigation Project
Jillian A. Leonard, Nova Scotia Salmon Association

Evaluating the Efficiency of a Hydropower Bypass for Atlantic Salmon (Salmo salar) in the Tobique River, New Brunswick
Hilary OJ MacLean, Canadian Rivers Institute, University of New Brunswick

Assessment of flow dynamics and fish habitat conditions in Togus Stream in relation to the ongoing restoration of anadromous fish passage into Togus Pond, Chelsea/Augusta, ME.
Carl Merrill, Suffolk University

Baseline Sampling of Penobscot River Sturgeon for Mercury
A. Dianne Kopec, Senator George J. Mitchell Center for Sustainability Solutions, University of Maine

Development of environmental DNA tools for sustainable monitoring of northeast sea-run fishes
Samantha J Silverbrand, University of Maine

Tracking Changes in Atlantic Salmon Habitat Availability using GIS
Christopher M Federico, Project SHARE

Fish Community Assessment 6 years following dam removal in the Penobscot River, Maine
Kory A Whittum, University of Maine

Beyond Connectivity: Restoring the Upper Narraguagus River Smolt Output Using a Collaborative Process-Based Approach
Joan G. Trial, Project SHARE, Eastport ME

Effects of ocean currents on the migration of Atlantic salmon post-smolts in a semi-enclosed bay
Brady, K, Quinn, Fisheries and Oceans Canada

Integrated conservation planning for priority watersheds within the NS Southern Upland Priority Areas
Fielding A Montgomery, Nova Scotia Salmon Association

Characterization of in-river plus growth in Atlantic salmon smolt scales
Rachel, Y, Kim, NOAA Fisheries

50 years of sampling at West Greenland
Tim Sheehan, NOAA Fisheries

Begin	End	January 15, 2020
7:00	8:00	**REGISTRATION –** *refreshments provided*
8:00	8:05	**Session IV: Movement Barriers, Fish Passage, and Ecosystem Response** *Joseph Zydlewski, US Geological Survey and Department of Wildlife, Fisheries, and Conservation Biology, University of Maine, Moderator*
8:05	8:20	**Examining dispersal of point stocked Atlantic salmon (*Salmo salar*) fry relative to habitat qualities in streams in eastern Maine, USA** *Ernest Atkinson, Maine DMR and University of Maine*
8:20	8:35	**Forecasting the downstream migration of adult silver phase American eels** *Dan Weaver, University of Maine*
8:35	8:50	**Establishing criteria to identify Ecologically Significant Areas in freshwater** *Alicia Cassidy, Fisheries and Oceans Canada, Gulf Fisheries Centre, Moncton, New Brunswick*
8:50	9:05	**Penobscot Estuary research, a decade of monitoring restoration and finding surprises** *Justin Stevens, Maine Sea Grant*
9:05	9:20	**Participatory mapping for knowledge co-production and application in Downeast Maine** *Gabriella Marafino, University of Maine*
9:20	9:35	**Dams, death, and delay in the Penobscot River - the complex and cumulative influence of hydropower dams on migrating American eels** *Matthew Mensinger, University of Maine*
9:35	9:50	**Energetic impacts of passage delays in migrating adult Atlantic salmon** *Sarah Rubenstein, University of Maine*
9:50	10:05	**Movement and survival of Atlantic salmon Salmo salar in the Piscataquis River** *Alejandro, Molina-Moctezuma, University of Maine, Department of Wildlife, Fisheries, and Conservation Biology*
10:05	10:35	**BREAK -** *refreshments provided*
10:35	10:50	**Governance of the Atlantic salmon program** *Julie Crocker, Greater Atlantic Regional Fisheries Office, NOAA Fisheries*

10:50 11:05 **Does leadership have a role in collaborative environmental governance?**
Melissa Flye, University of Maine

11:05 11:20 **Fish passage decision-making during hydropower relicensing in the Kennebec and Penobscot Rivers, Maine**
Sarah K Vogel, University of Maine, Dept of Wildlife, Fisheries, and Conservation

11:20 11:35 **Maine DOTs Part in Atlantic Salmon Recovery**
Eric Ham, Maine DOT

11:35 11:50 **Ecosystem implications of restoration evaluated through modeling**
Adrian Jordaan, University of Massachusetts Amherst

11:50 12:05 **NRCS Aquatic Connectivity Project**
Juan Hernandez, Natural Resources Conservation Service
Judy Camuso, Maine Department of Inland Fisheries and Wildlife
Patrick Keliher, Maine Department of Marine Resources

12:05 13:05 **LUNCH** - *lunch at the Student Union (not provided)*

13:05 13:10 **Session VI: Watershed Restoration and Emerging Recovery Tools**
Carl Wilson, Maine Department of Marine Research, Moderator

13:10 13:25 **The Anatomy of Watershed Scale Restoration**
Molly Payne Wynne, The Nature Conservancy

13:25 13:40 **Narraguagus River Conservation Plan: Ecosystem based co-management for the next 20 years?**
Jacob van de Sande, Maine Coast Heritage Trust

13:40 13:45 **Upper Narraguagus Watershed: Restoring habitat and managing expectations (Part I)**
Joan G. Trial, Project SHARE

13:45 14:00 **Evaluation of bed mobility using PIT-tagged tracer particles on the Narraguagus River, Maine**
Douglas M. Thompson, Environmental Studies Program, Connecticut College

14:00 14:15 **Strategic Habitat Conservation in the Upper Narraguagus River: Using best available science to identify high priority restoration areas-actions intended to improve juvenile Atlantic salmon production in a catchment with ideal channel gradients and overall adequate summer time thermal conditions.**
Scott D. Craig, U.S. Fish and Wildlife Service

14:15 14:30 **Managing for More Productive and Resilient Atlantic Salmon Habitat in the Narraguagus River, Maine**
Christopher M Federico, Project SHARE

14:30 14:40 **Upper Narraguagus Watershed: Restoring habitat and managing expectations**

(Conclusion)
Joan G. Trial, Project SHARE

14:40 15:10 **BREAK –** *refreshments provided*

15:10 15:25 **The Maine-eDNA EPSCoR program and its ties to Maine's salmon ecosystems**
Michael Kinnison, University of Maine, School of Biology and Ecology, Orono, ME, USA

15:25 15:40 **Comparative assessment of environmental DNA and backpack electrofishing methods for estimating Atlantic salmon occupancy and abundance**
Bradley F. Erdman, University of Maine

15:40 15:55 **Experimental assessment of optimal lotic eDNA sampling and assay multiplexing for Atlantic salmon**
Zachary T. Wood, University of Maine

15:55 16:10 **Untying a Gordian knot: Collective salmon recovery on the East Machias**
Dwayne P. Shaw, Downeast Salmon Federation

16:10 16:25 **Fort Folly First Nation's ambitious plan to restore endangered inner Bay of Fundy Atlantic salmon to the Petitcodiac River**
Tim Robinson, Manager Fort Folly Habitat Recovery program Fort Folly First Nation

16:25 16:40 **Salmon for Maine's Rivers: A New Partnership for Recovery**
Danielle Frechette, MDMR

16:40 16:55 **Using a Keystone Management Species to support Ecosystem Based Management?**
Sean Hayes, NOAA Fisheries

16:55 17:00 **Student Awards, Species in the Spotlight Award and Adjourn**
Jen Anderson, Assistant Regional Administrator for Protected Resources, NOAA Fisheries

ADJOURN