Atlantic Salmon Recovery Science

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NOAA FISHERIES

Northeast Fisheries Science Center

Part 3

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Info for Reviewers – Describe Program & Overview of:

- Scientific Products and Advice
  - Quality, precision, frequency
  - Timeliness and impacts
- Major Successes of Research
- **Data accessibility to external researchers**
- **Strengths and Challenges**
- **Recommendations to Improve**

Data Accessibility

Data Access and Open Platforms

- In Maine - Atlantic Salmon Information System
  - Shared georeferenced Microsoft Access Databases
  - Standardized Data Fields, etc.
  - Unified and shareable across NOAA, DMR, USFWS
- Evolution of System –
  - Circa 1992 ----------→Relational Dbases

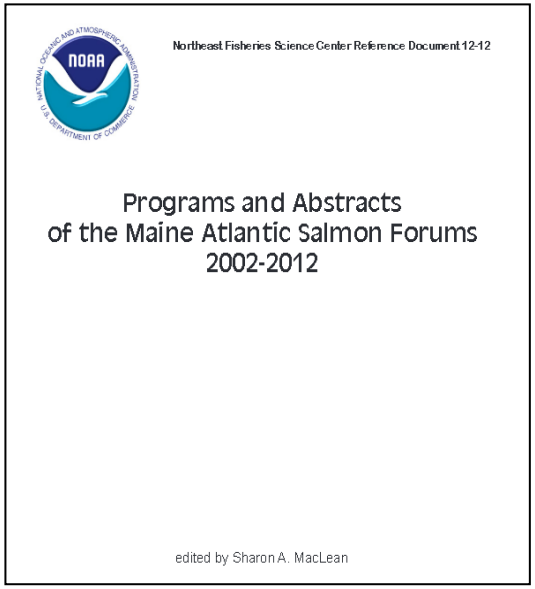
Access

ArcGIS ESRI

Data Access and Open Platforms

- Maine Salmon Data to:
  - US Atlantic Salmon Assessment Committee Databases
    - Comprehensive tables
    - Shared georeferenced Microsoft Access Databases
    - Stored on NOAA URL – access through USASC Chair
  - ICES Working Group on North Atlantic Salmon
    - Comprehensive tables
    - Stored at ICES – access through ICS HQ
- Telemetry Data stored at:
  - Ocean Tracking Network – all ocean receiver data
  - Atlantic Cooperative Telemetry Network – tag catalog
  - TIDBITS – Umaine relational database
- Water Temperature Data
  - Archiving underway at Spatial Hydro-Ecological Decision Support System (SHEDS)

Information and Outreach



- NOAA started Salmon Forum in 2002
  - Focus from salmon to ecosystem
  - Growth from 15 salmon talks
    - 2014 40 talks and 11 posters
    - Invited keynotes
    - Now co-sponsored, broader audience

- Science Staff Active in Outreach
  - Salmon in Schools
  - Streamside Programs
  - Conservation Gatherings
  - Speaking at Salmon and Conservation Clubs

Questions - Discussion

Wrap Up

GAR Science Needs… Atlantic Salmon

- **Population estimates by river**
- **Determine stock composition in mixed stock fisheries**
- **Evaluate impact of dams, fisheries, etc.**
- **Examine temperature and predator/prey field during migration, impacts on survival, changes with environmental change**
- **Set thresholds for dam, fisheries, etc., impacts**

Science Needs to Support Federal Mandates

GAR Science Needs… Atlantic Salmon

- **Population estimates by river**
  - ✓ **Annual monitoring and reporting for 8 populations**
  - o **Need to reconcile dam passage success at new facilities and expanded recovery areas (Kennebec)**
  - o **Need to increase redd surveys and better determine age and sex structure in rivers without traps**
- **Determine stock composition.. fisheries**
  - ✓ **3 fisheries monitored to various degrees and new North American baseline robust estimate of US take**
- **Evaluate impact of dams, fisheries, etc.**
  - ✓ **DIA (completed)**
  - o **Clupeid modelling (ongoing)**

GAR Science Needs… Atlantic Salmon

- **Examine … predator/prey field during migration, impacts on survival.. With env. change**
  - ✓ **Partitioning of marine environment and better identification of coastal and distant water mortality sources**
  - o **Need more focus on nearshore mitigation actions and impacts of climate change**
- **Set thresholds for dam, fisheries, etc., impacts**
  - ✓ **Greenland – estimates 1981-1988 (cwt proration), 2001-2005 (PGA), 2012 – present (N. Am. Baselines)**
  - ✓ **Labrador – (estimates 2006-present)**
  - o **St Pierre et Miquelon – estimates available from 2004, 2013 – present – low sampling effort**

Strengths

- Dedicated internal funds
- Very dedicated and energetic FTE and contractors
- Strong partnerships with GARFO and HRC
- Synergy through partnerships with State, University, Tribes, USGS, and NGO Partners in strong co-operatives

Challenges

- High reliance on and key needs filled by long-term contract labor
- Vacant positions not back filled
  - Quantitative Analyst
  - Biological Technician
- Expertise gaps
  - Quantitative habitat-population dynamics integration
  - Conservation genetics
- Lack capacity to support “other” fish species of concern between Salmon Team and ad-hoc assignments of Population Dynamics Branch scientists

Recommendations

- Restoration of salmon funding and staffing to peak of program
- Optimize balance between
  - Labor, contracts, and operating funds
  - FTE vs. contract labor
- Continue 3-pronged approach to threats and management needs
- Expand extramural support of marine survival and dam impacts
  - Use diadromous community collaborative model

Questions - Discussion