

# ASF Research Database Brief Summaries

## Smolt Acoustic data

### Description:

- 2003 to 2024 on various rivers, predominantly the Miramichi and Restigouche and Cascapedia (Table 1).
- Average 315/yr over last 4 years (since Covid-19)
- Typical recently 80 NW Mir (now 100+ with Trap and Truck), 80 SW Mir, 80 Restigouche, 60 Cascapedia. Plus Matapedia (60).
- Partners over the years
  - Miramichi Salmon Association
  - Anqotum Resource Management
  - Cascapedia River Soci t 
  - DFO Gulf (tagging in Rest and depoyments in SOBI)
  - ESRF
  - Restigouche River Watershed Management Council
  - UNB (Glenn Crossin)
  - OTN (data has gone to OTN and now we'll get data from SOBI from them)

### Status:

- Being analyzed yearly for survival and timing.
- Data compiled and published by J Daniels re predation and survival
- Paper by J Carr upcoming

### Data:

- Record on paper in field, sometimes direct to digital
- Field records in xlsx for both tagging and deployments.
- Receiver data in VRL (Innovasea proprietary format), then converted to csv
- Csv files used with R
- \*\*\*Innovasea (supplier of acoustic tags and receivers) changing how data is compiled in the receivers. Newer receivers will utilize a new software package called Fathom (previously known as VUE) to manage receivers and data. We have explored this, but not moved to it yet. Fathom uses vdat files, not vrl files. Sometimes you can go back and forth, but not always. It will require new methods and reworking of how data is downloaded and stored.
- \*\*\*The data notes here apply to all the following tracking data sets, except the pit tagging.

Table 1: **Number of overall tags deployed per year**

Year	# of tags
2003	199

2004	199
2005	147
2006	174
2007	227
2008	166
2009	214
2010	200
2011	223
2012	200
2013	224
2014	250
2015	280
2016	455
2017	354
2018	299
2019	266
2020	160
2021	300
2022	268
2023	220
2024	474

## Kelt Acoustic data

### Description:

- Since 2005 except 2007,2020 and 2024 (Table 2).

### Partners

- In recent years only in partnership with other organizations (DFO, NOAA) and in ESRF program
- MSA
- Hammond River Angling Association
- Cascapedia River Soci  t  
- DFO
- NOAA
- Many volunteer anglers
- Restigouche River Watershed Management Council

### Status:

- Currently being analysed and prepped for publication by H Perry

### Data:

- Same as smolt tagging above

*Table 2: Number of overall tags deployed per year*

Year	n
2005	10
2006	8
2008	90
2009	60
2010	50
2011	50
2012	35
2013	41
2014	38
2015	49
2016	51
2017	25
2018	65
2019	28
2023	26

## Striped Bass Acoustic

### Description:

- By ASF since 2022
  - 2022 – 2 tagged
  - 2023 – 28
  - 2024 – 45
- Some previous years Striper data was given by DFO (such as for predation study)
- Being used to increase numbers of tagged striped bass in the system and possible future predation studies?

### Partners:

- MFFP
- UNB
- DFO

### Status:

- In the data gathering process.

Data:

- See smolt tagging above

## PSAT Tagging

a. Project: West Greenland

- Tagging in WG since 2018 except 2020. Ended in 2024.
- 298 PSAT deployed since 2018, few to >100/yr
- Data were also collected on sea lice, genetic samples are being analyzed by Ian Bradbury, DFO.

Partners:

- DFO (ESRF)
- NOAA
- GINU (CAG)
- KNAPK in WG
- Data being compiled and analyzed by DFO/ESRF as well as R. Lennox (OTN)

b. Project: SGoSL – ASF

- From 2012 to 2016, avg 11/yr in NW Miramichi and Restigouche
- Paper published: Strom, J., Campana, S., Righton, D., Carr, J., Aarestrup, K., Stokesbury, M., Gargan, P., Javierr and Thorstad, E. 2019. Ocean Predation and Mortality of Adult Atlantic Salmon. Scientific Reports 9. No.1 (December 2019): 7890. <https://doi.org/10.1038/s41598-019-44041-5>.

Partners:

- J Strom -U of Norway at Oslo (might have name wrong)
- Restigouche River Watershed Management Committee
- Miramichi Salmon Association
- Many volunteer anglers
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c. Project: ESRF – kelts in Spring

- 2021 to 2023 (82, 13 and 4 respectively). ASF did not tag all of these, but distributed and managed the ordering and distributing and data download.
- Presumed reports and/or paper(s) to be published or have been published by ESRF

Partners:

- ESRF (DFO)

- Many smaller groups and other regions of DFO

## Trap and Truck – Pit Tagging

### Description:

- Begun in 2024 with 917 NW Miramichi smolts pit tagged at Wayerton.
- Tagging to continue in 2025 and on
- Arrays to be installed in 2025 to catch first grilse returning
- Data so far consists of tagging data only, as of 20250301
- Status: Ongoing and entering second year so no return data available yet

### Partners:

- North Shore Mi'kmaq Tribal Council (NSMTC)
- Miramichi Salmon Association (MSA)
- Canadian Rivers Institute (CRI)
- with support from the Foundation for the Conservation of Atlantic Salmon (FCAS) and DFO

### Data:

- Tagging data as in smolt tracking above (all tagging data kept together)
- PIT array data will be stored in a separate database or set of files, to be determined.

## Tag Retention

### Description:

- Experiment run in tanks to determine retention of acoustic tags by smolts.
- Run over a few months.

### Partners:

- DFO
- NOAA

### Status:

- Paper published: Brunsdon, E., Daniels, J., Hanke, A., and Carr, J. 2019. Tag retention and survival of Atlantic salmon (*Salmo salar*) smolts surgically implanted with dummy acoustic transmitters during the transition from fresh to salt water. – ICES Journal of Marine Science, doi:10.193/icesjms/fsz139, 10 pp.

### Data

- On the research drive.

## Fishway, Magaguadavic River at St. George

### Description:

- ASF has monitored the fishway yearly since 1995 for wild/enhancement returns and aquaculture escapees numbers (Figure 4).

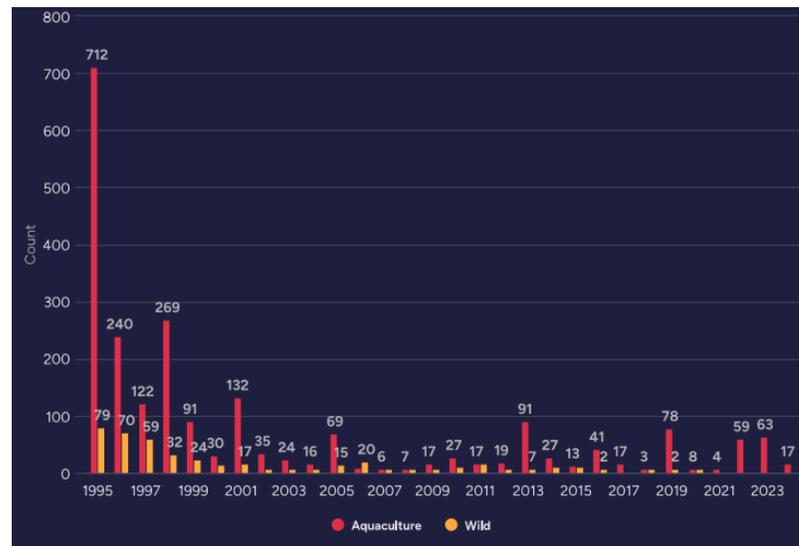


Figure 1: Number of aquaculture escapees and wild fish return for each year of the fishway monitoring

- Numbers of wild and escapees reported to DFO (under Scientific License requirement) and ICES
- Also used for activism with regard to open net-pen aquaculture

### Partners

- St. George Power – maintains the fishway area and operates dam
- NBWTF - funding

### Data

- is in .xlsx format
- records
  - for each salmon in all years
  - each fish except grouped for alewife since ~ 2020
  - each visit has record since ~2018
- some categorical changes over years that cause issues (sea lice counts...) but mostly pretty good and workable

## Downstream Collection – Magaguadavic River

- downstream passage facility at same set of dams as the fishway was monitored over several year in 2000s and 2010s. For efficacy and perhaps some tracking work.
- Data completion and format unknown.

## Electrofishing – Juvenile Surveys

### Description:

- Carried out yearly since 1994 over various sites and rivers in SW NB
- Since 2012 – has been on 9-13 sites (depending on water levels), repeated yearly without significant changes
- Fewer to no salmon found over last decade

### Partners:

- NBWTF - funding

### Data:

- is a mess and needs work by someone familiar with the stuff to make workable, a few days worth of work, plus a few investigations. Many old field sheets may still exist.
- Data in excel files
- Older staff should be consulted to find locations for certain sites only referred to by name in the data

## Temperature loggers

### Description:

- Temperature loggers deployed in many SW NB sites since early 2000s, possibly before.
- Often not deployed according to proper protocol, or unknown (i.e. not in shade)
- Used almost exclusively Vemco (now Innovasea) loggers. Not calibrated with ice bath or similar method yearly or perhaps ever.
- No, or little, deployment info until approx. 2012. A book exists somewhere in the office that has dates and times written down of when the loggers were initialized to begin recording, but not when they were actually in the water. A log of what went out, but not deployment info.

### Partners

- NBWTF - funding

### Data

- Individual csv files for each deployment (typically a season) by site

- Have been compiled into an All Years for each site. Individual files remain.
- Metadata file has deployment data since 2012-ish
- Some older, no longer used locations not recorded, however older staff may know and coordinates can be obtained.
- Needs a bit of time (a few days) by GC to neaten up the data folder, but is in new format, mostly to have another go round to remove doubles or extra stuff. This should not be left too long or familiarity will be lost. Though originals still exist.

## EDNA- SWNB

- EDNA samples taken in SW NB to compliment electrofishing and to establish if salmon present beyond the reaches of efishing sites.
- Began in 2024 in Pocologan (11 sites) and New (2 sites only) rivers.
- Sampling and deployment data is complete. Includes sampling, temperature and flow data wherever taken.
  - In xlsx files for field data
  - Results in pdf reports from lab
- Partners
  - NBWTF – funded