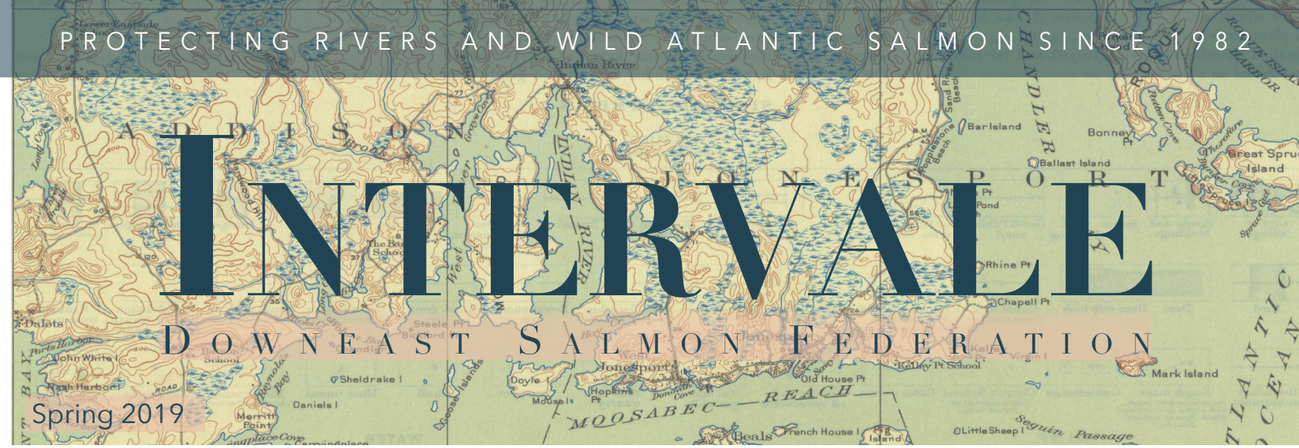
*In-ter-vale n. [a blending of INTERVAL + VALE] [Americanism, Chiefly New England] low, flat land between hills or along a river. Webster's New World Dictionary

DOWNEAST SALMON FEDERATION
P.O. Box 201
Columbia Falls, Maine 04623

PROTECTING RIVERS AND WILD ATLANTIC SALMON SINCE 1982



INTERVALE

DOWNEAST SALMON FEDERATION

Spring 2019

Documenting the Success of the Peter Gray Parr Project

Photo credit: Keith Williams

Since 2012, over 1 million fall parr (juvenile Atlantic Salmon) have been raised in the Peter Gray Hatchery and released into the East Machias River. During this time period, the watershed experienced record-setting heat, drought, cold, precipitation, flooding, and the rapid warming of the Gulf of Maine. Despite these extreme events, the results of DSF's experimental Peter Gray Parr Project (PGPP) have been very encouraging:

- The watershed-wide large parr density—that is, the number of 2 to 3 year-old fish found per unit of habitat—is more than double the density seen using other methods of stocking;
- The PGPP produced the highest ever large parr density, measured over each decade, since electrofishing began in the mid-1970s. The next highest decadal median was during the 1970s;
- Smolt (the life stage when Atlantic Salmon migrate from the rivers to the sea) populations resulting from the PGPP are 4 times higher than smolt populations generated from other stocking methods;
- Age distribution of the PGPP smolt population is more equivalent to what we see in wild salmon populations than it is with other methods;
- Since the start of the PGPP, there has an upward trend in the numbers of smolt migrating to sea, despite erratic environmental conditions. In 2018, the estimated total production was 0.73 smolt per unit of habitat, increasing from 0.39 at the start of the PGPP;
- The neighboring Narraguagus River produces about 0.25 smolt per unit—one-third the number of smolt produced per unit by the PGPP in the East Machias River;

Continued on page 2

Meanders

"Choosing to save a river is more often an act of passion than of careful calculation. You make the choice because the river has touched your life in an intimate and irreversible way, because you are unwilling to accept its loss."

– David Bolling

Help DSF Achieve Significant Landmarks

We have been very busy at DSF this past winter! From our community outreach events to our wild Atlantic Salmon hatcheries, we are constantly making strides to fulfill DSF's mission to conserve sea-run fish and their habitats; restore a viable recreational salmon fishery; and protect important river, scenic, recreational, and ecological resources in eastern Maine.

- DSF Executive Director, Dwayne Shaw, and Board President, George Leinbaugh, recently met with staff members from both of Maine's US Senate offices to discuss the state of Atlantic Salmon restoration in Maine. They enjoyed getting a tour of both our Pleasant River Hatchery in Columbia Falls and Peter Gray Hatchery in East Machias.
- DSF partnered with Maine Outdoor School to provide over a dozen fly tying clinics throughout Washington and Hancock counties. More than 210 people have participated in these events over the last year. There are plans to add several more events throughout 2019. You can see our upcoming schedule at www.mainesalmonrivers.com/events. These workshops are made possible by the generous support of the Belvedere Traditional Handcrafts Fund through the Maine Community Foundation.
- In January, our Peter Gray Hatchery received 370,000 eyed Atlantic Salmon eggs, which will be reared to fall parr and stocked in the East Machias River.
- Our Pleasant River Hatchery received 144,000 eyed Atlantic Salmon eggs.

If you believe in a future of healthy rivers, abundant fisheries, and vibrant communities, consider giving to DSF. We rely on donations from our members. We appreciate your support! THANK YOU!

Thank You to Our Major Business Partners

Machias Savings Bank

Emera Maine

SunEdison®

For more information on how your business can become a DSF Business Partner, please contact info@maineselmonrivers.org

Small Property, Big Impact

DSF has been engaged for upwards of 25 years in discussions regarding the future of the West Branch of the Pleasant River in Addison and Columbia. Tidal barriers (a dike and self-closing gates) prohibit adequate fish passage and normal tidal hydrology. This structure was built over 70 years ago to encourage agriculture within the floodplain salt marshes. Recently, the ME DOT, Army Corp of Engineers and several other agencies have announced their intentions for an extensive

Continued on page 2

Small Property, Big Impact

Spawning Tomcod return to restored Habitat in Frenchman Bay

September 26, 1940

Continued from page 1

habitat restoration outcome.

The DOT structures are in very serious disrepair and in jeopardy of catastrophic failure. To lay the groundwork for restoration, DSF and our fisheries and land trust partners have been involved in our own restoration and outreach efforts in this watershed. Due to its size (nearly 350 acres) the West Branch is considered one of the most important salt marsh restoration opportunities in the entire Gulf of Maine.

Our work here has led to a number of successes. Recently, DSF acquired what is technically a "non-conforming property"

where a house had been built on a tiny extension of the fill used to build the dike. This "postage stamp" parcel is surrounded by wetlands. When the house that had been grandfathered there on the dike was destroyed by fire a few years ago, DSF approached the owners to suggest that the best use for the property was as a part of the restoration of the watershed and that we would be interested in buying the land. The owners – who were at one time opposed to restoration of the marshes and river, had changed their position after learning of some of the great improvements that would come

with natural salt marshes and fisheries. Late last year, DSF was able to acquire the property with assistance from Maine Coast Heritage Trust and with funds raised through our membership.

Removal of the tide gates in this location will have immediate positive effects on the ecosystem and we fully expect to see Smelt, Sea-Run Brook Trout, Tomcod and maybe even salmon in this river system once again.

Documenting the Success of the Peter Gray Parr Project

Continued from page 1

- The average smolt to adult return rate (the number of smolts that exit the river compared to the number of adult fish that return to spawn) of PGPP reared fish is higher than the return rate for naturally reared salmon on the Narraguagus River and smolt stocked salmon on the Penobscot River.

In other words, DSF's Peter Gray Parr Project is producing more juvenile Atlantic Salmon in the East Machias River than there has been seen in the river in the last five decades and the project is producing returning adults at a much higher rate than neighboring rivers!

Your help goes a long way, please continue to support the Peter Gray Parr Project.

For the first time in more than half a century, Tomcod have returned to spawn in Smelt Brook in Sullivan! Last year DSF removed the 50 year old dam that kept fish out of the stream and nutrients from flowing into Smelt Cove at the head of Frenchman Bay.

"We found a few Tomcod downstream of the dam last year and in the past few years we documented a few smelt eggs on the face of the dam," noted DSF Fisheries Biologist, Brett Ciccotelli. "This year It's great to find that Tomcod found their way upstream past where the dam used to be and are now spawning again. We hope to find smelt here in the spring too!"

Around New Year's 2018 DSF purchased the property surrounding Smelt Brook with help from the Maine Natural Resource Conservation Program and other groups and individuals who chipped in time and funds. In the spring, classes from Sumner High School came down to survey the pond for Brook Trout--with fly rods and barb-less hooks--and the kids pulled a few of the first stones from the top of the dam.

DSF Habitat Restoration Project Manager, Shri Verrill facilitated permitting, drew up a restoration plan and supervised the dam removal and salt marsh restoration project in September. As Smelt Brook continued to flow despite the mouth of the stream being cut off from Smelt Cove, years of sediment and nutrients were impounded upstream of the dam. "There was about two feet of muck at the bottom of the pond," says Verrill.

Photo credit: Bangor Daily News

Once the excavator, dump truck, and bulldozer came and took the dam out, Smelt Brook ran freely into Smelt Cove once more. Fall rain and several months of high tides helped the stream cut through the deposited sediment and exposed gravel bars as far as 150 feet upstream from the old dam.

Late at night in the dark and cold of December--and likely other evenings over the last few days of the year--Tomcod came under the ice into the cove. They swam over the old dam site and for the first time in 50 years they found gravel at the head of tide where they laid their eggs.

"I'm really, really thrilled with what's going on down there. Glad to hear the Tomcod are being spotted. This is a good thing. I'm an absolute supporter!" Said Rob Eaton, Sullivan Town Manager "I love to see the restoration of natural passage. Thanks to common sense, a scientific approach and positive results we are winning small victories for our planet."

Ciccotelli brought photographer and author Keith Williams of Freshwater Journeys to document fish runs in streams Downeast and Keith caught this photo of Microgadus Tomcod.

Photo credit: Keith Williams

The fish bring joy to those of us who work to make way for their passage. We're glad you're back! This spring we expect to document returning Smelt to their namesake brook and cove.

DSF Partners with University of Maine at Machias

Photo credit: University of Maine at Machias

The University of Maine at Machias (UMM) is the university system's only coastal campus, and it is critical to the regional economy. It is also a close neighbor to DSF—just 4 miles down the road—and we share many of the same goals and interests at many levels. Given that DSF has successfully collaborated on various projects with UMM from day one, it was clear we could expand our impact if we further formalized our relationship.

So, several years ago, DSF and UMM began talking about working together more closely. These talks bore fruit this year as DSF & UMM signed a Memorandum of Understanding (MOU) that provides a framework in which the two organizations can jointly share facilities and other resources to collaborate on various projects.

Both organizations have a number of shared goals, including:

1. Increasing our knowledge and understanding of eastern Maine's aquatic resources;
2. Making UMM more competitive in attracting and retaining students;
3. Restoring regional fisheries;
4. Building economic development strategies to sustainably manage Maine's natural resources, and
5. Educating the next generation of leaders.

The framework of the partnership that the MOU provides will support us in accomplishing these goals.

For example, DSF is building a laboratory in our East Machias facility. The laboratory will be available to DSF staff, UMM professors, and students for classes as well as research projects. The lab will help train future conservationists, scientists and stewards. It will increase opportunities available to UMM's students since UMM doesn't have a similar facility. It will also boost UMM's ability to market itself to prospective students. The lab might even help us to discover something we didn't previously know about Maine's fish and waters.

The MOU opens up many possibilities. Now the real work of making those possibilities a reality begins.

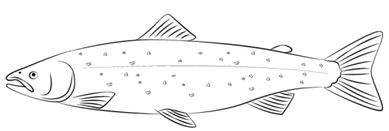
Although already signed and "enacted," DSF and UMM will have a celebratory signing—with fanfare and the press—sometime this May. If you'd like to be part of this event, check back in with us via Facebook or our website in late April.

DSF Awarded Highest Ranking

With the recent growth of DSF, and the nonprofit sector as a whole, it has become necessary to provide information about our financial health to donors, grant makers, foundations, and government agencies. It is clear that our donors require and, more importantly, deserve full financial disclosure and DSF is committed to providing just that.

In 2018 DSF embarked on this process of transparency and has earned Guidestar's, highest ranking seal: Platinum Seal of Transparency. Itself a nonprofit, Guidestar's mission is to "revolutionize philanthropy by providing information that advances transparency, enables users to make better decisions, and encourages charitable giving."

Guidestar is considered the backbone of the nonprofit sector providing donors, grant makers, foundations, and government agencies with updated and complete financial and performance information so that they can make informed decisions about which organizations they support.



River Updates

Branch Lake Stream

We are working in partnership with the City of Ellsworth on the final leg of fundraising to remove an abandoned dam on the outlet of Branch Lake Stream. This 150-foot-long, 6-foot-high concrete structure has blocked Atlantic Salmon, Brook Trout, and Blueback Herring from over 6-miles of habitat in the Union River watershed for most of the last century.

Support from the Union Salmon Association, US Fish and Wildlife Service, Maine Outdoor Heritage Fund, and the City of Ellsworth has laid the groundwork for dam removal this summer.

Chalk Pond

On a Saturday afternoon in early February, we were joined by nearly 80 anglers out on 28 inches of ice at our Chalk Pond Preserve in Beddington. The cub scouts plowed out the parking lot and helped introduce a new generation of kids to the joys of ice fishing.

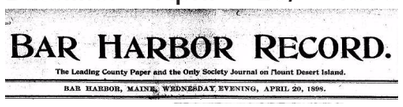
Cousins waiting for the big one!

Orange River

The designs for fish passage on the Orange River at our dam in Whiting have been completed. Now, it's time to start considering our options. We have style choices to make—denil, nature-like, or steep pass? Materials to pick—concrete, wood, or stone? Another consideration is potential ideas for dam repair or possibly removal. We are committed to a solution that works for fish and people and are working closely with the town of Whiting to guarantee that whatever is decided has a positive impact on community, fire protection services, and natural resources.

Union River

Dateline: April 20, 1898



BAR HARBOR RECORD.

The Leading County Paper and the Only Society Journal on Mount Desert Island.

BAR HARBOR, MAINE, WEDNESDAY EVENING, APRIL 20, 1898.

"Unless fishways are provided this year, all the fish planted this year will be lost, and the experiment of trying to restock the Union river will come to naught. The river is a natural resort for salmon, and though it is many years since they were able to get up the river, they are still seen occasionally at the foot of the lower dam trying to get up. Mr. Race (Superintendent E. E. Race of Green Lake Hatchery) believes the Union river could in a few years be made the best salmon river in Maine."

And they say some things never change. On the Union River, we think it's time they did. A century and a quarter later—there are still no fishways over the two big dams on the Union River. The Maine DEP can lead the way and require fish passage at both dams and a new management plan for Graham Lake that improves water quality as part of the on-going relicensing of the Union River dams.

Tell DEP to make it happen: Contact DEP Commissioner Reid (jerry.reid@maine.gov 207-287-2811) and let him know the Union's time has come.

Utilizing Sonar Technology in River Herring Research

For several years, DSF has helped spearhead a collaborative effort to re-establish a commercial river herring fishery in Pembroke on the Pennamaquan River. In order for the harvest to resume, we need to know several key factors about the river herring population to ensure that the fish are harvested in a way sustainable. DSF, Maine Sea Grant, Town of Pembroke, Sipayik Environmental Department, Maine DMR and others are collaborating to gather this data.

River herring are harvested during their spring migration from the sea to inland lakes to spawn. We can estimate the size of the migration by using in-stream electronic counters. We also take biological samples to monitor age and sex distributions.

We now have the opportunity to increase the type of data collected by using high resolution sonar in cooperation with Bowdoin College, Manomet and Downeast Fisheries Partnership. Sonar can locate fish and differentiate between species underwater (think fancy fish-finder). We plan to estimate the overall abundance of juveniles migrating downstream to the ocean and see if we can identify any patterns in outmigration during the fall.

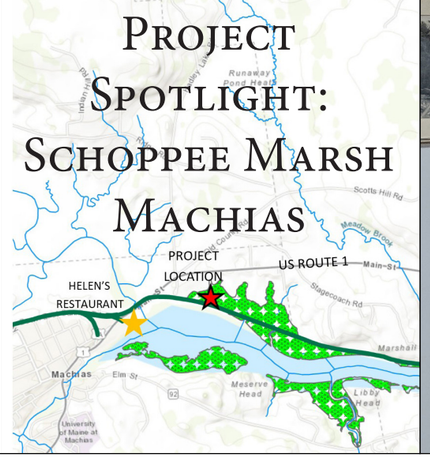
This research informs restoration and management of river herring in the Pennamaquan River by expanding our understanding of the relationship between upstream migration of adults and downstream migration of juveniles. More generally, the research will contribute to our understanding of the role of river herring in the restoration of coastal food webs.

International Year of the Salmon

2019 is the International Year of the Salmon (IYS), a worldwide education and outreach initiative organized by the North Pacific Anadromous Fish Commission (NPAFC) and the North Atlantic Salmon Conservation Organization (NASCO), to spur research that aspires to establish the conditions necessary to ensure the resilience of salmon and people throughout the Northern Hemisphere. IYS endeavors to bring people together, share and develop knowledge, raise awareness, and take action. As a NASCO accredited NGO partner, DSF is excited to participate and promote the International Year of the (WILD) Salmon!

INTERNATIONAL YEAR OF THE SALMON

Project Spotlight: Schoppee Marsh Machias



Upcoming project:
Schoppee Marsh is a salt marsh restoration project with hands-on-science for Maine's Citizen Scientists.

Project Summary:
In order to sustain fisheries for future generations in Downeast Maine, a number of community organizations will collaborate in the restoration of Schoppee Marsh. A critical part of the project will be to conduct targeted education, stewardship, and community outreach focused on the important role of salt marshes in the Machias River estuary.

Environmental Outreach, Education & Training:
This project will focus on building awareness around the important role that salt marshes play in maintaining water quality, providing food sources for fish and wildlife, and, within the context of climate change, the important role salt marshes have in mitigating the impacts of rising sea levels and in boosting community readiness.

Students will be trained in data collection methods and, as Citizen Scientists, they will engage in hands-on activities and water quality monitoring for the Schoppee Marsh restoration project. The students will share their findings with the community at a student-lead presentation hosted by the Machias Downtown Revitalization Committee.

Ray Carbone - Board Member Extraordinaire

Ray Carbone has been an outstanding member of the DSF Board of Directors for over 15 years! He joined the board to "make a difference" to Downeast conservation and his contributions span years of volunteer service to Mother Nature. Ray's generous gifts of time, effort, and artistic genius have made a tremendous contribution to DSF.

Of late, Ray has semi-retired and turned his attention to helping DSF by bringing beauty and class to the conference room and future museum space in our East Machias facility. Ray has transformed the painted cement-block walls of the room with new cherry display cabinets. The cabinets were made by Ray who donated both his time and artistry to craft them. Contributions for the materials were made by family and friends of the late Paul Hermann, a former board member and longtime advocate for Atlantic salmon. The conference room will be named in Paul's honor.

The next enhancement to the conference room is a conference table. Ray will bring his craftsmanship to build a table that can be adjusted to meet the needs of whoever is sitting around it. Wood for the table was donated by Dwayne Shaw.

The conference room is available to community and regional groups that need a meeting space.

DSF is planning a grand opening and dedication of the future museum and meeting space in honor of Paul Hermann later this year. Contributions for the completion of this project are most welcome.

Thanks again, Ray, for helping to make it happen!

DSF's East Machias Facility is Now Fully Accessible!

DSF is thrilled to report that the EM facility is now fully handicap-accessible. A new lift has been installed to allow second floor access to our conference room, employee offices, and the future water quality lab.

When renovations and construction of the DSF East Machias facility and the Peter Gray Hatchery were undertaken, the goal was to be a completely accessible building. While original construction incorporated accessible doorways, ramps, and restrooms, it also required designing a lift shaft into the original construction plans. The pursuit of a lift led DSF to determine that a Savaria Concord V-1504 Platform Lift to be our wisest choice. The lift was installed this winter and certified in March. With the help of grants secured from MCF Broad Reach, The Davis Conservation and Morton-Kelley Foundations, and an anonymous benefactor, DSF has reached the final phase of a completely accessible facility. Without limitations, all can participate in the mission of DSF!