



DOWNEAST SALMON FEDERATION
P.O. Box 201
COLUMBIA FALLS, MAINE 04623

HELP DSF ACHIEVE SIGNIFICANT LANDMARKS

Make Atlantic Salmon and the rivers of eastern Maine part of your legacy through a planned gift to the Downeast Salmon Federation.

Planned gifts are deferred contributions made through your will or estate plan, a beneficiary designation, or life income gift. Planned giving can help you achieve your philanthropic and financial goals as you establish a legacy of giving back to the fish and streams that you love.

DSF has just launched our Planned Giving Program. Be our inaugural benefactor. Contact Tracy Shaw (207-438-4336 or tracy@mainesalmonrivers.org) to learn how you can make a planned gift. Thank you.

We want to give a very special "Thank You" to long-time DSF supporter Charlie Harriman! Charlie generously sponsored a \$30,000 Matching Gift Challenge this year and the response from all of you was tremendous!

Charlie has been very involved with our Peter Gray Parr Project, having sponsored matching gift challenges each of the past two years. Charlie has made a significant investment in the recovery of the iconic Atlantic Salmon.

THANK YOU CHARLIE!

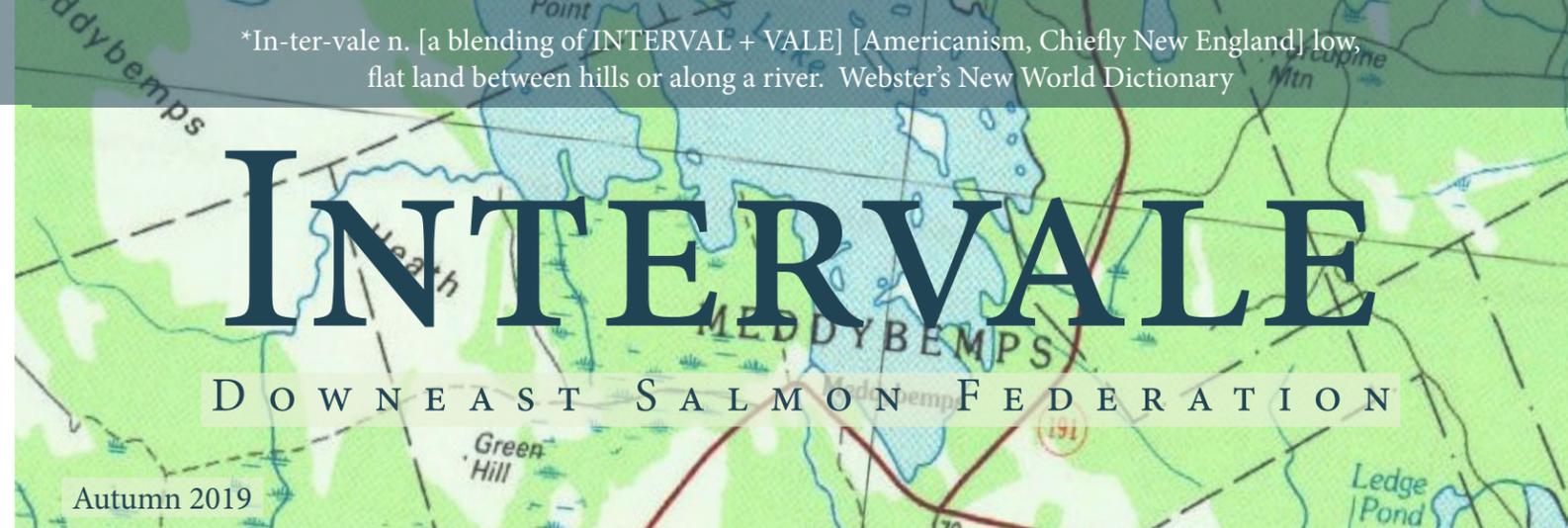
You, too, can have a major impact on our success. If you would like to sponsor a matching gift challenge or if you would like to discuss ways that you can help DSF raise the funds needed for this work, please contact us TODAY!

THANK YOU TO OUR MAJOR BUSINESS PARTNERS



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

*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



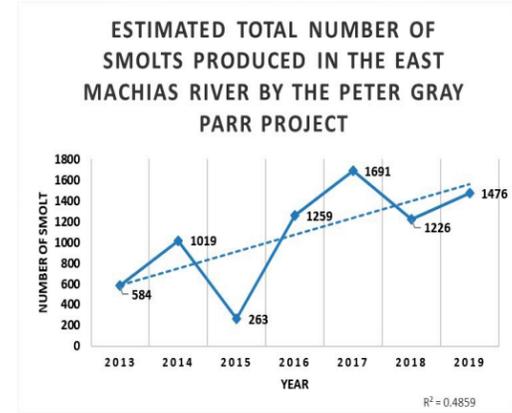
The Atlantic Salmon population leaving the East Machias River this spring was the second-highest recorded during the span of the Peter Gray Parr Project (PGPP). In its eighth year of operation, the PGPP is producing East Machias River smolt populations showing a steady trend upward. Smolts resulting from the project exited the river at a rate almost five times higher than those seen in 2013 when only fry were stocked.

Smolt production per unit (100 square meters) of habitat stocked is also on the rise. While the nearby Narraguagus River produces only

around 0.25 smolt/unit, this past year the PGPP produced three times that amount!

The average SAR (smolt to adult return rate or marine survival) resulting from the PGPP (2.08%) is higher than that of average SARs (during the same time frame) for naturally reared (fry stocked and natural spawning) salmon on the Narraguagus River (0.564%) and smolt stocked salmon on the Penobscot River (0.078%). Per capita, the PGPP smolts survive better at sea and return at a higher rate. The PGPP SAR is 3.7 times higher than the Narraguagus and 26.7 times better than the smolts stocked in the Penobscot River. Potentially, this means that the 1,000 returning adults to the Penobscot River could be 26,700 if the Peter Gray method were implemented at the appropriate scale to produce a similar number of smolts.

We have discussed in previous newsletters that the number of juvenile salmon in the East Machias River is now the highest (over decadal



MEANDERS

Sometimes, if you stand on the bottom rail of a bridge and lean over to watch the river slipping slowly away beneath you, you will suddenly know everything there is to be known.

(A.A. Milne, Winnie the Pooh)



- Produces a smolt population on the East Machias River almost five times higher than observed with fry stocking
- Produces three times more smolt per unit of habitat stocked when compared to the nearby Narraguagus River
- PGPP smolts have shown (per capita) to survive better at sea than naturally reared fish on the Narraguagus River and smolt stocked on the Penobscot River
- Median density of juvenile salmon is highest ever observed on the East Machias River
- During the 2011-2018 time series the East Machias produced more salmon per minute of electrofishing (CPUE) than other rivers in Maine

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DSF DOUBLES SIZE OF SPRAGUES FALLS PRESERVE

A local DSF favorite fishing and swimming preserve in Cherryfield has more than doubled in size through Downeast Salmon Federation's 35 Mile Campaign.

The Spragues Falls Preserve originally contained a little over 200 acres of forest and associated river frontage on the south-western side of the Narraguagus. The West River Tote Rd., a lovely place to hike and ski, has been used for over a hundred years and runs through the heart of the original preserve. Downstream, a small loop trail takes hikers to the old Gowen Cemetery, giving a glimpse of the old, and much larger, community that existed there at the turn of the 20th century. Upstream you'll find the DSF Boar's Nest log cabin, a quick paddle or a 3-mile winter hike, which has provided a forest refuge for wanderers and hunters since Franklin Roosevelt was elected president.

In partnership with Maine Coast Heritage Trust, The Nature Conservancy, and the Healthy Rivers Consortium; DSF has been able to purchase an additional 332 acres on the north-eastern side of the Narraguagus. Part of DSF's 35 Mile Campaign to conserve 35 more miles of the Atlantic Salmon's last American

habitat, these additional purchases have permanently protected four miles of river and stream frontage on the Narraguagus River. More remote and harder to access, these properties offer hunters, hikers, and wildlife even more room to roam. A quick swim, or a long drive to Deblois, down Lane Rd. brings the adventurous to the new DSF properties. While signs are still going up, and more trails are being planned, DSF welcomes

the community into the expanded preserve to explore and enjoy!

With more land comes more responsibility. DSF needs your help to keep these lands wild, open, and welcoming to all. Become a DSF volunteer steward at Spragues Falls or one of our other 23 preserves scattered along the rivers of Washington and Hancock Counties by contacting us today!



Thanks to willing landowners and a grant from the Maine Outdoor Heritage Fund, DSF is removing a collapsing road crossing that threatens one of Washington County's most productive small coastal streams. This old Route 1 bridge crossing was abandoned when the road was rerouted to the south. Since then, spring melt and winter freeze have slowly broken the old bridge into pieces that are on the verge of collapsing into Perry's Smelt Brook. The stream, a few miles east

of the Pennamaquan River, provides spawning habitat to Sea-run Brook Trout, Rainbow Smelt, and Tomcod. This project is being dedicated in honor of local smelter Dale Lincoln.



Smelt Brook, Perry collapsing bridge



SALT MARSH RESTORATION: SCHOPPEE MARSH

If you've been along the Downeast Sunrise Trail in Machias this summer you may have noticed some activity out on Schoppee Marsh. In partnership with the Downeast Coastal Conservancy (DCC) and the U.S. Fish and Wildlife Service Gulf of Maine Office, and with help from the Sipayik Environmental Department; DSF has begun preliminary studies needed to restore Schoppee Marsh. We have also collaborated with DCC to engage students from the Beatrice Rafferty Middle School in helping us collect data as they learn more about the role salt marshes play in fisheries restoration.

DSF has deployed data loggers to monitor the change in water levels before and after opening the tide gate. Opening the tide gate will increase tidally deposited sediment. This will allow for the marsh elevation to increase so that it may survive in the face of sea-level rise, and it will increase drainage to help the vegetation survive so it does not turn to mudflat.

Next steps will likely include draining the standing pools of water by digging shallow runnels,

and filling in the ditches with grass to restore the salt marsh surface and to reduce the breeding area for mosquitoes. DSF and our partners will keep a close watch on the marsh response to opening the tide gate. Schoppee Marsh is part of the DSF Machias Head of Estuary Focus Area, which is an area of Statewide Ecological Significance supporting critical populations of migratory birds, diadromous fish, groundfish, and shellfish.

Salt marshes like Schoppee are some of the most productive ecosystems in the world, providing food throughout the estuarine and marine food web. They also provide many important ecosystem services including the improvement of water quality, protecting people and buildings from flooding and erosion, and providing nursery and essential habitat for commercial and recreational fisheries.



US Fish and Wildlife Biologist, Bill Bennet, and Sipayik Environmental Department's Chris Johnson and Billy Longfellow (out of frame) survey the elevation of the tidal creek and water level data loggers.





DSF Honors Dr. Paul Hermann

Library & Archive



Photo Credit: Bangor Daily News

A very special and lifelong wild Atlantic Salmon advocate, Dr. Paul Hermann, was honored on August 17th at the Dr. Paul Hermann Library and Archive dedication ceremony at the DSF East Machias facility. Renovations to the East Machias building continue to proceed! This multi-purpose addition to the facility provides a community meeting room complete with audio and visual equipment, display cases for DSF's collection of fishing "memorabilia" (including two of Dr. Hermann's

personally handcrafted fly reels), an archival storage room where the DSF historical collection is kept, and a resource library. The completion of this room was funded by family, friends, and partners who contributed in honor of Dr. Hermann, the passion he had for salmon fishing, and the dedication he brought to the mission of protecting and restoring the fishery in Maine. These individuals gathered with Paul's wife, Kathleen, to celebrate Paul with stories, tributes and the official naming of the room. 🐟

NARRAGUAGUS ICE CONTROL DAM: STUDY UNDER WAY

The Army Corps Cold Regions Research and Engineering Laboratory (CRREL) began assessing the ice control impacts of the proposed modifications to the ice control dam on the Narraguagus River in Cherryfield. Removal of this dam would open up fish passage to the upper Narraguagus watershed.

This past spring, DSF provided an aerial survey of pre and post-ice-out conditions to the Army Corps to assist with their assessment of ice control needs. DSF is working closely

with the Town of Cherryfield and project partners to assist with project management and coordinating with the Army Corps. DSF is also taking the lead on fundraising and working to ensure that the project moves toward an outcome that safeguards downtown Cherryfield from ice-related flooding

and improves fish passage.

The CRREL study is part of a larger feasibility study which will inform potential options for the future of this dam. These options could include no action at all to complete removal with several options in between that would modify the dam. 🐟



Aerial photo of pre-iceout conditions at dam.
Aerial drone photo credit: Jenny Reichert



Fish Passage Restored Branch Lake Stream Dam Removed

After several years of effort and planning, DSF breached and removed the dam on Branch Lake Stream. This dam, at the mouth of Branch Lake Stream, was dammed in the 1880s to provide drinking water for the City of Ellsworth. Stringent drinking water regulations in the early 1990s forced the City to begin sourcing drinking water from Branch Lake making the Branch Lake Stream dam obsolete.

DSF engaged J.E. Butler Demolition as the



Above: Early spring high water over the dam

Left: J.E. Butler hammering out the concrete and rebar of the dam.

Below: After dam removal, free flowing into Leonard Lake.



contractor and the project included complete demolition and removal of the dam as well as stream bank restoration. Removal of this dam opens up 4.5 miles of critical habitat for Atlantic Salmon, Eastern Brook Trout, river herring and shad. This is the first salmon habitat in the Union River watershed upstream of the Ellsworth Dam.

This project was completed in partnership with the City of Ellsworth and was funded by the Maine Outdoor Heritage Fund, Hancock County Water and Soil Conservation District, Union Salmon Association, the National Fish Passage Program (USFWS), and Brookfield Renewable Energy. 🐟



LATE SUMMER FUN WITH CITIZEN SCIENTISTS

On a sweltering day in late July, DSF began the third consecutive year of a beach seine survey for juvenile Alosa, a genus that includes river herring and shad. In the Pleasant River estuary, with the help of two citizen science volunteers, we deployed our 60-foot-long seine, a large curtain-like net used for fishing near the shore, and caught hundreds of tiny juvenile fish. Citizen science volunteers make our annual seine survey possible. This year we have had the help of over 20 generous volunteers and several school groups who hailed from Portland to the Canadian border.

This season we are seining on the Union, Pleasant, Narraguagus, Machias, and East Machias River estuaries. DSF is continuing to work in partnership with the Maine Department of Marine Resources (DMR) and our survey is based on one that DMR has been conducting on the Kennebec and in Merrymeeting Bay for many years. This survey is vital to assess the health of our river herring and shad populations in Downeast Maine. Not much is currently known about the estuarine habits of juvenile Alosa, and DSF's annual seine survey is starting to fill gaps in data and understanding.

Citizen science fish monitoring is a powerful scientific tool that DSF

is using to advocate for conservation and sustainable harvesting, as well as, educating the next generation of stewards. Monitoring lesser-known species like smelt, herring, and Tomcod allows DSF to collect critical information about the health of the fish populations and habitat that would otherwise be lost or forgotten.

DSF utilizes citizen science, the practice of public participation and collaboration in scientific research, to increase scientific knowledge of fish and fisheries in Downeast Maine. Through citizen science, we can collaboratively share and contribute to data monitoring and collection programs. DSF has two additional citizen science diadromous fish surveys, one for Rainbow Smelt in April and May and a Tomcod survey in December and January.



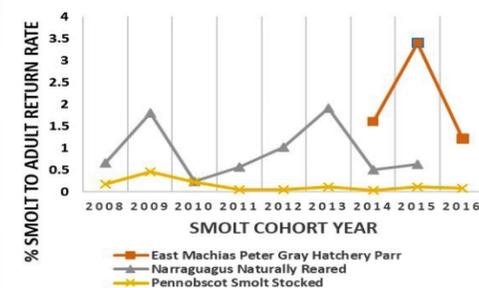
Cataloging a juvenile Rainbow Smelt while seining on the Pleasant River

RIGOROUS ASSESSMENT, REMARKABLE RESULTS

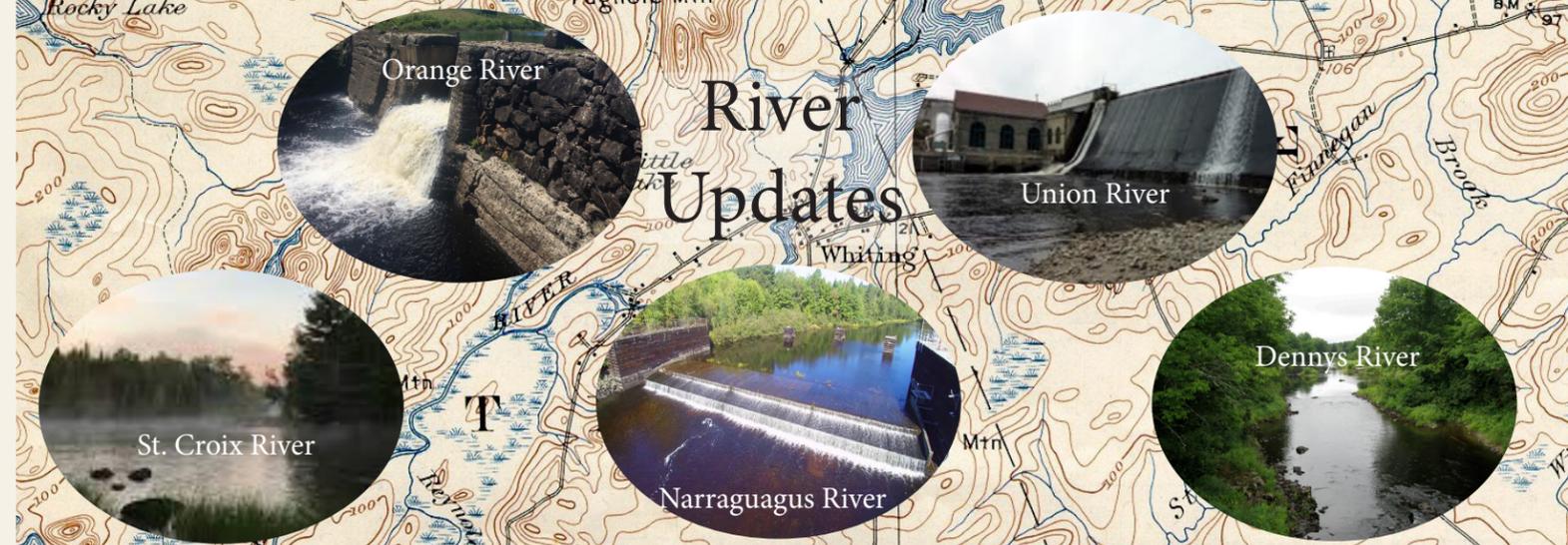
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medians) ever observed going back into the 1970s. Another way to look at that data is to compare it to other rivers in Maine and what has been seen over the past number of years in large parr density (number of baby salmon in the river). Compared to the seven other locations studied in Maine, including Ducktrap, Mattawamkeag, Middle Sandy River, Narraguagus, Piscataquis, Sheepscot, and the Upper Sandy River; the East Machias River is the only river to exceed a mean Catch Per Unit of Effort (CPUE)** of greater than 2 salmon per minute during the time series. Abundances observed on the East Machias River (2.22/min) have been greater than most rivers sampled throughout the state and are much greater than abundances observed in similar, small coastal rivers like the Narraguagus (1.19/min) and Sheepscot (1.09/min).

SMOLT TO ADULT RETURN RATES IN 3 MAINE RIVERS WITH 3 DIFFERENT STOCKING STRATEGIES



** (CPUE is a standard measurement used to estimate populations through electrofishing surveys)



In 1872, fisheries biologist Charles Atkins wrote about the salmon rivers of eastern Maine. By then, our rivers had already suffered a century of abuse. His survey work left us a vision of what we once had and what we are working for today.

Of the Dennys, he wrote, “salmon abounded in this river in its primitive state.”

The St. Croix River “once yielded large numbers of salmon... Dams were built on the river probably a century ago, but previous to 1825 they were all provided with ways for the passage of migratory fish...but in 1825 the Union Dam in Calais was built, and remained for many years without an adequate fish-way.”

The Union River “was formerly a very productive salmon river... Their ascent to their ancient breeding grounds is, however effectually prevented by the formidable dams at Ellsworth... Above them the main river is open to its headwaters”

On the Orange River “salmon once frequented this river... three dams near the mouth of the river cut them off from all breeding-grounds, and they were exterminated”

The Narraguagus River “once yielded great numbers of salmon and alewives... One gentleman testified to having once, with the assistance of two others, taken at Cherryfield forty salmon one morning between daylight and sunrise.”

The East Machias River “though better adapted, by its extensive lakes

and gentle current, to the production of alewives, this river has always afforded salmon, and formerly they are said to have abounded.”

Nearly 150 years later the vision of large numbers of salmon abounding is still possible. A critical piece of that work is in restoring access to these watersheds.

On the Denny’s DSF is working to remove the pieces of a decaying powerhouse turbine and dam just below the outlet of Meddybemps Lake. We continue to work on restoring free passage through the tide gates of the West Branch of the Pleasant River and Machias Middle River and into the main stem of the Narraguagus River.

Partnering with the Sipayik Environmental Department, the town of Pembroke, and the State of Maine; DSF is taking the lead rebuilding fishways on the Pennamaquan River. With support from the Maine Outdoor Heritage Fund we are protecting the Pennamaquan’s neighboring stream, Smelt Brook in Perry, by removing a collapsing road crossing. On the Orange River, Maine Coast Heritage Trust is renovating a historic home adjacent to a stone dam now owned by DSF. We are working with the community to find a way to respect the dam’s place in the town’s history and provide free passage to the rest of the Orange River.

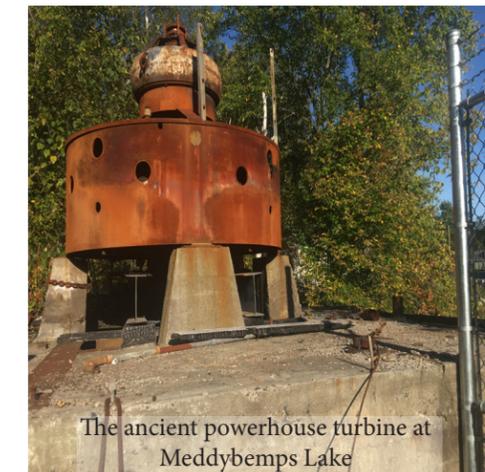
Aside from our hatchery and habitat work on the East Machias, we are crafting a restoration plan for the river that can guide our work in the

coming years. In the Union River watershed, DSF recently opened access to Branch Lake Stream by partnering with the City of Ellsworth to remove an abandoned dam at the stream’s confluence with the Union River.

DSF remains active in the federal hydro-power arena and is excited to see orders from the Federal Energy Regulatory Commission (FERC) for fish passage on the St. Croix. We are working tirelessly on reviewing and critiquing the preliminary FERC order for the Union River Dam’s relicensing. The Union has entered the last phase of its relicensing process as the Maine DEP evaluates the project.

DSF remains committed to advocating for restored access to the “ancient breeding-grounds” of salmon, shad, brook trout, alewives, and other species in this and all rivers of Eastern Maine.

Quotations from Charles G. Atkins, *On the Salmon of Eastern North America, and its artificial culture*, 1872.



The ancient powerhouse turbine at Meddybemps Lake