

"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
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Help DSF Achieve Significant Landmarks



"Mother nature may provide nourishment to both the body and soul, but she needs a good caretaker. The Downeast Salmon Federation does just that in a precious place."

ALAN "CHUBBA" KANE - Photographed here with his wife Bonnie and poodle Emma.

Please consider making 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.

Join the Downeast Legacy Society today. Contact Tracy Shaw at (207)483-4336 or email dsf@mainesalmonrivers.org for more information.

THANK YOU TO OUR MAJOR BUSINESS PARTNERS



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P.O. Box 201 Columbia Falls ME 04623



PROTECTING RIVERS AND WILD ATLANTIC SALMON SINCE 1982

AUTUMN 2020

INTERVALE

DOWNEAST SALMON FEDERATION



Meanders

The sea, the great unifier, is man's only hope. Now, as never before, the old phrase has a literal meaning: we are all in the same boat.

Jacques Yves Cousteau

DSF Land Trust continues to grow

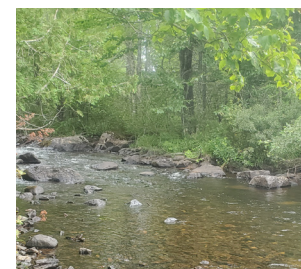
FIND OUT ABOUT THE LATEST DEVELOPMENTS ON PAGE 3

Peter Gray Fall Parr Released

Looking south over Brusen Marsh

A BLAST FROM THE PAST

SOME INCREDIBLE THINGS WE FOUND IN THE ARCHIVES Page 6



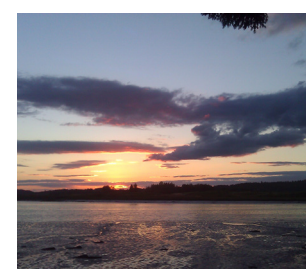
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INSIDE: THE PETER GRAY PARR PROJECT



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The Downeast SALMON HABITAT RECOVERY UNIT (SHRU) experienced colder spring weather followed by a summer drought.

Rivers and streams historically low



A low Richardson's Brook

This is one of the salmon rearing habitat sections of rivers and streams where DSF's Peter Gray Hatchery stocks parr.

It is also where the DSF Land Trust (in partnership with Maine Department of Environmental Protection) annually places tons of clam shells along the stream to add calcium and provide pH mitigation in an effort to aid Atlantic salmon and macroinvertebrate development.

Maine DEP works with U.S. Fish and Wildlife Service and Maine Department of Marine Resources to compare juvenile fish production pre and post treatment. DEP also assess the productivity of lower trophic level organisms by doing macro-invertebrate surveys and leaf pack surveys.

Recent data highlights the breakthrough observed in the smolt to adult return rate (SAR) in the Peter Gray Parr Project. This has led to the decision to expand the program into the Narraguagus River based on the following data.

Over the period of the Peter Gray Parr Project, Peter Gray fall parr stocking results in an average smolt production rate of 0.60 smolt/unit of habitat (100 sq meters) stocked in the East Machias River (Bruchs et al. 2020; DSF 2020).

If performance were similar in the Narraguagus and Machias rivers, stocking Peter Gray fall parr in the 9,100 units of currently vacant habitat would produce approximately 5,460 additional smolts for the Downeast SHRU. At the average 2SW (sea winter) SAR observed on the East Machias River from the PGPP (1.92%) (USASAC 2020), additional smolt production from expanding Peter Gray fall parr stocking into this vacant habitat would return approximately 105 additional 2SW spawners. This data could be extrapolated to other salmon rivers to estimate production if similar results to what has been seen in the East Machias were observed.

The average SAR from the Peter Gray Parr Project (2.117%) is 2 times greater than the previous 5-year average SARs for naturally reared salmon (fry stocked or naturally spawned salmon) on the Narraguagus River (1.055%) and nearly 20 times greater than return rates of

SNORKEL SURVEY

Snorkel surveys were completed by DSF in August and we had some encouraging experiences.

We were able to confirm some of the young salmon that were a result of the 60 redds (salmon nests) documented in 2019 in the East Machias River.

These redds came from salmon stocked from the Peter Gray Hatchery in years past.

Visit the DSF Facebook page to see the videos.

www.facebook.com/downeastsalmon

DSF Parr Project

A major breakthrough and plans to expand to the Narraguagus River in 2021

smolt stocked salmon on the Penobscot River (0.107%) (USASAC 2020).

Parr stocking produced greater than 2 times more smolt/unit than unfed fry stocking in 2013. In comparison, during the same period the neighboring Narraguagus River, which has three times more salmon habitat than the East Machias River, had a mean smolt production of 0.22 smolt/unit. In 2019, the smolt production per unit of habitat supplemented in the Narraguagus River was 0.16 smolt/unit. In 2019, parr stocking in the East Machias River produced 5.4 times the number of smolt per unit of habitat supplemented when compared to the Narraguagus. The Narraguagus River is primarily supplemented with unfed fry and variable natural reproduction.

Decadal median large parr density during the span of the Peter Gray Parr Project is 10.5 parr/unit, compared to the decadal median seen during unfed fry stocking of 4.9 parr/unit. This is a 114% increase over an 8-year timespan. Parr densities produced by stocking Peter Gray parr in the East Machias River are more than double what they were during the period of unfed fry stocking. This is the highest decadal median large parr density observed since electrofishing began in the mid-1970s.

USASAC 2020. Annual report of the U.S. Atlantic Salmon Assessment Committee, Report No. 32 – 2019 Activities. Portland, Maine, USA.

<https://www.nefsc.noaa.gov/USASAC/Reports/>

www.mainesalmonrivers.org

Breaking News

October 22, 2020 - Cease and Desist Order Sought

Anne Berleant, Ellsworth American

In a long-running effort to make Black Bear Hydro address fish kills attributed to the energy company's Union River dam operation, Downeast Salmon Federation has requested that the Department of Environmental Protection issue an immediate cease-and-desist order on turbine operations during the seasonal alewife migration.

The Oct. 15 request cites multiple observations of juvenile alewives being killed in the prior two weeks.

"We've been fighting these fish kills for years," Downeast Salmon Federation

biological scientist Brett Ciccotelli said. "We've been patient. We want to see some real steps made to make this place safe for native fisheries."

However, Black Bear Hydro holds that the dam is shut down and has been since a Sept. 24 "fish mortality event," except for the brief redirecting of water flows, Senior Communications Director Andy Davis said.

Every spring, up to a million adult alewives flood into the Union River to spawn, Ciccotelli said. Come fall, the juveniles are ready to return to the ocean, but they have to make it past the dam. The fish can be killed or wounded by the turbines or by differences in water pressure.

According to Ciccotelli, if they go over the dam through a ten-foot opening at the top, created to give the fish a better survival rate than traveling through the turbines, they can fall on the rocks and ledges directly

below. Representatives of Black Bear Hydro have previously said the company would mitigate the fish kill issue through modifications to the fish passage, as outlined in the 1987 water quality control certificate, but Downeast Salmon Federation holds that any measures taken had little effect.



Ellsworth Dam

In June of 2020, DSF and 9 other conservation groups plus six individuals with decades of fisheries experience sent a letter to the Maine Department of Inland Fisheries and Wildlife, requesting the inclusion of Atlantic salmon on the state's list of endangered species.

The Native Fish Coalition, the Native Fish Coalition Maine Chapter, Maine Salmon Federation, Maine Council of the Atlantic Salmon Federation, Union Salmon Association, Upstream Watch, Friends of Merrymeeting Bay, Elliotsville Foundation and Kennebec Reborn were joined by former DIF&W commissioner Ray "Bucky" Owen, fisheries scientists Edward Baum, Matthew Scott, Joan Garner Trial, Mark Whiting and journalists Catherine Schmidt and Topher Browne.

The forcefully worded letter left no doubt that this group with decades of direct experience in the Atlantic salmon field feels that imminent extinction is a possibility without their inclusion on the Maine ESA list. Read the article in the Bangor Daily News, June 1, 2020 edition.

Maine and U.S. Endangered Species Acts

Endangered and threatened inland fish and wildlife species in Maine are listed either under the Maine Endangered Species Act AND the U.S. Endangered Species Act.

Species listed under MESA receive state protection; species listed under ESA receive federal protection; and species listed under both receive state and federal protection.

The Maine DIF&W shares management responsibility with the U.S. Fish and Wildlife Service for inland fish and wildlife listed under the federal act.

The commissioner of the DIF&W is allowed to suggest species be added to the list if the species is at risk of extinction.



MCHT Impact

Founded by Peggy Rockefeller and a group of friends in 1970.

In its first year, MCHT facilitated the conservation of 30 islands.

In 1982, MCHT co-founded the Land Trust Alliance to strengthen land trusts in all fifty states.

In 1985, as development threatened the Bold Coast of Washington County, MCHT donors stepped up to protect epic landscapes now home to some of MCHT's best-loved preserves.

PARTNER PROFILE

Maine Coast Heritage Trust



MCHT has been a significant supporter of the Downeast Salmon Federation for many years. Their partnership has helped DSF meet many milestones in growth and advancement.

With a similarity of purpose in conservation in Downeast Maine, DSF and MCHT often collaborate and share resources in a joint effort to coordinate or initiate conservation of a high value resources such as land or habitats.

DSF currently has 5809 acres of land under conservation. MCHT has been a partner in the acquisition of some of the parcels in the DSF Land Trust, and in helping to develop locally established land trusts in eastern Washington County.

MCHT is also a fellow member of the Downeast Fisheries Partnership which consists of nine organizations with a shared vision for the development of fisheries with a vision of increasing community engagement and fisheries recovery in Downeast Maine. For more information see: <https://downeastfisheries.org>

www.mainesalmonrivers.org

Where did they go?

The slow and inexorable decline of the wild Atlantic salmon didn't happen in a vacuum; it took many multiplicative factors coming to bear on their ecosystem over decades.

The biggest culprit is dams. By 1986, a total of 782 dams had been built in Maine (GIS Data Catalog - Maine Office of GIS 1987). Dams also interrupt the natural flow of a river, and can cause ecological harm through sedimentation, erosion, and pollution. They can also inhibit fish migrations. But there are other factors.



Rivers and Harbors Act (1899) The Rivers and Harbors Act was originally intended to prevent the dumping of garbage and refuse into New York harbor. The law also includes provisions prohibiting the construction of any bridge, dam, dike, or causeway over or in navigable waterways without the Army Corps of Engineers' approval.

Federal Water Power Act (1920) This act and its later amendments created the Federal Power Commission (FPC), now known as the Federal Energy Regulatory Commission. FERC is required to mandate the construction, maintenance, and operation of fish passage facilities such as fish ladders or elevators if necessary to the continued preservation of the fisheries (U.S. Fish and Wildlife Service 2009d). and to oversee the licensing and re-licensing of hydropower projects.

National Historic Preservation Act (1966) Created the National Register of Historic Places, a list of historically significant sites, buildings, districts, structures, and objects to the United States.

National Environmental Policy Act (1970) Requires the preparation of an environmental impact statement (EIS) for any federal project which may impact the environment.

Clean Water Act (1972) The Clean Water Act (CWA) issued broad objectives to restore and maintain the nation's navigable waters, requiring water quality standards to be set as well as point and non-point sources of pollution to be addressed.

Endangered Species Act (1973) Authorizes the determination and listing of species as endangered and threatened; prohibits unauthorized taking, possession, sale, or transport of endangered species; provides authority to acquire land for the conservation of listed species, using land and water conservation funds; authorizes establishment of cooperative agreements and grants-in-aid to states that establish and maintain active and adequate programs for endangered and threatened wildlife and plants (U.S. Fish and Wildlife Service 2009b)

THE ARCHIVES

We've collected a lot of stories along the way about the iconic Atlantic salmon. It's been a story from abundance to decline and back again, and often hard to comprehend.

However it bears noting that there have been a lot of determined and courageous folks sounding the alarm along with us. Many of them are local and regional writers, and some in the larger fishing community.

In this collection, we're showcasing a quick walk through the story from 1948 to about 1994.

Note the large numbers of rod catches from 1948-1962. In 1948, a state agency, the Atlantic Sea Run Salmon Commission, was created and charged with the restoration and management of this fish.

By 1962 the catch had increased tenfold. The writer of the article said 'Seven rivers now have sizeable populations of salmon, and only a lack of adequate funds prevents the addition of more'. What happened?

In the next edition, we'll tell you more of the story.

Recorded Rod Catches from the Salmon Streams of Maine for the period 1948-1962

1948	205	1953	164	1958	407
1949	171	1954	188	1959	555
1950	82	1955	122	1960	285
1951	86	1956	271	1961	596
1952	113	1957	174	1962	405
Total	657	Total	919	Total	2248
Average	131	Average	184	Average	450

1963 Fall Maine Fish and Game, Atlantic Salmon Sports Fishery Economic Importance

SALMON AND THE U.S. ENDANGERED SPECIES ACT - TO BE OR NOT TO BE

In a Bangor Daily News article dated February 17, 1994, writer Tom Hennesey laid out the situation.

At a meeting held Feb. 11 at the Eddington Salmon Club, Maine's Atlantic Sea-Run Salmon Commission voted unanimously to adopt a state wide "grilse-only" sport-fishing regulation for 1994.

According to the regulation, an angler's season limit of Atlantic salmon will be one grilse, a fish measuring between 14 and 25 inches in length, that must be tagged and registered. Any adult salmon fish measuring more than 25 inches must be released immediately after being caught.

The decision was met with some grumbling about 'having to purchase

an Atlantic salmon license to catch one grilse'. But of more concern was the looming petition by conservationists demanding the U.S. Fish and Wildlife Service add the fish to the Endangered Species List. That would end all local salmon fishing.

At the same meeting Hennesey wrote 'the 1994 stocking allocations approved by the ASRSC were: Penobscot River, 700,000 fry, 580,000 smolt; Machias River, 37,500 fry; Dennys River, 21,000 fry; St. Croix River, 100,000 fry, 60,000 smolt; Saco River, 20,000 smolt. There will be no stockings for the Narraguagus and Sheepscot rivers this year because river-specific fry were not available.

WHERE DO SALMON GO during their years at sea? Tagging experiments, involving adults and hatchery-reared smolts, have taken some of the mystery out of the ocean life of salmon. Tag returns annually come from commercial fishermen in Nova Scotia, Newfoundland, Labrador, and Greenland- more than 2,000 miles from Maine! From tag returns to date, it appears that, except for grilse, Maine salmon go to Greenland. The Greenland area has been proven to be a common feeding ground for many European and North American salmon.

1971 by Edward T. Baum, Biologist Atlantic Salmon Commission

1 In their feeding ground in Greenland, Maine salmon travel 10-15 miles a day.

2 Some Maine salmon make the 2,000 mile spawning journey more than once.

3 Spawning takes place in late October or early November.



OUTDOOR CLASSROOM NEAR SUMNER HIGH SCHOOL

You've probably read in previous editions of the INTERVALE newsletter about DSF's work to remove a dam at Salt Brook in East Sullivan in 2018.

Now that the area has been restored, the surrounding habitat has returned to its wild and abundant natural state. It's an ideal spot for conservation and environmental learning.

We'd like to develop an outdoor classroom near the former dam site and its surrounding habitat. We believe it would make an outstanding environment for students from nearby Sumner High School to participate in hands-on learning about conservation and their local habitat.

We are hosting a gap year student group this fall, and we'd like to invite you to support the project with a donation to the DSF Land Trust.

Please visit our website and add your support:

www.mainesalmonrivers.org/donate



COOL FACT

Did you know that DSF grows blueberries? Well, technically it's DSF land that does the work. We lease over 30 acres of conserved land to organic blueberry growers every year.

The preservation of this land close to Downeast Maine waterways helps protect the rivers and streams from harmful pesticide runoff.

Products from these farms and other organic partners that benefit conservation can be purchased on our website:

<https://www.mainesalmonrivers.org/support-dsf-buy-organic>

PRESERVE HIGHLIGHT



Boar's Nest Camp

SPRAGUES FALLS

Spragues Falls is a hide-away on the Narraguagus River in the area where the artists who created Bambi gained inspiration. The look of the movie was based on reconnaissance trips to the region by Maine artist Maurice "Jake" Day.

This preserve also offers trails, a wonderful swimming hole, and a historic cemetery.

The Boar's Nest Camp near Spragues Falls can be booked year round. It is water access only, so bring your kayak, canoe or snowshoes for this adventure.

North American Wetlands Conservation Act

In 2019 DSF received two grants from the NAWCA. One is for conservation properties in the Great Heath and the other for the Dennys River property noted below.

If all goes well, four parcels on the Pleasant River and one on the Narraguagus will be part of this project. Three of the Pleasant River parcels will be on the Great Heath, the other further downstream.

The Great Heath Ecological Reserve in Washington County is over 7,000 acres of preserved peatland on both sides of the Pleasant River near Columbia. It contains rare plants and grasses and creates a riparian migration pathway from tidal lowlands to the upland heaths.

DSF is working with landowners to acquire parcels or easements in the preserve that are in the Pleasant River Corridor which DSF seeks to protect in its entirety in perpetuity. These conservation easements serve to preclude development which could impact the Pleasant River's water quality. They also protect an aquatic wildlife corridor for Atlantic salmon.

New Property near the Dennys River

Almost 1400 acres has been added to the DSF Land Trust holdings. The property is an easement over land owned by the New England Forestry Foundation. It will expand connection to DSF's Dennys River watershed properties and provide increased public recreational access.

Percentage of Land under Conservation

The U.S. lags behind many developed nations in land conservation totals. In fact a large number of developing nations protect far greater areas. Public awareness is key.

U.S. 14%

Costa Rica 23%

Germany 48%



Pennamaquan Fishway Project

New fishway installed in Pembroke

Habitat Restoration

THE NARRAGUAGUS RIVER

In 2020 DSF continues to work with the Army Corps of Engineers and the community of Cherryfield on a critical program on the Narraguagus River.

The next phase is a feasibility study by the ACOE to assess the improvement of the dam spillway to aid fish passage. The spillway, built in 1961, contains rock-filled timber cribs and was constructed to control ice jams and local flooding.



The Narraguagus River ice control dam and timber cribs

RESTORING COMMUNITIES

With partnership from the Nature Conservancy, and the Maine Department of Environmental Protection, DSF has embarked on a Beaverdam Stream restoration project. The project is just one of many that DSF is involved in, and a great representation of the coordination and community engagement that DSF provides.

The 6.4 acre section is a wooded stream buffer abutting Beaverdam Stream and is part of a larger DSF Land Trust Preserve. The stream has 298 mapped units of salmon habitat (each unit being 100 sq meters) = 29,800 sq meters of mapped salmon habitat.

Upstream there are river herring and a very productive brook trout fishery.

The overall goal of long-term management is to maintain Beaverdam Stream forever as high quality Atlantic salmon breeding and rearing habitat while maintaining traditional human use of the property.

By removing collapsed culverts and installing a new road and trails, DSF is making the property accessible to the public for hiking, walking, mountain biking (on designated trails), snowshoeing and cross-country skiing.

You can see the dramatic improvement 3 years later in these photos.



August 2018



September 2020

New website design

We've taken a big leap into a new look and feel for the DSF website. You'll find a brand new format designed to provide helpful information and invite more visitors to learn about DSF conservation programs.

As we expand our Conservation Hatcheries, and add to the DSF Land Trust and Habitat Restoration programs, we need a more functional website that can expand with us.

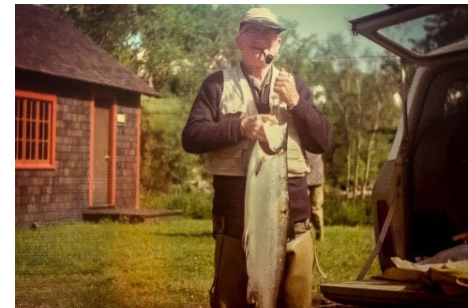
On a practical note, it was important

for DSF to align the website to today's internet standards.

With 30% of website visits coming from mobile devices, and visitors wanting a greater user experience, we needed to bring our communications system up to par.

So now we have easier navigation cues, program details in depth, a library of resources and clearer stories of our mission, people, and projects.

NEW WEBSITE HIGHLIGHTS



ABOUT US - STAFF CHANGES

In early 2020, DSF's former Associate Director Russell Heath retired. We are very grateful for his five years of impactful leadership which helped DSF navigate major developments in its fisheries and lands programs.

Brett Ciccotelli has been promoted to Restoration and Engagement Coordinator.

Additionally, in 2020, four new staff members were added:

- Greg Louder - Associate Director
- Martha Siano - Communications & Development Coordinator
- Charlie Foster - Habitat Restoration Project Manager
- Mike Sloan - Conservation Technician



WE ADDED A LIBRARY

With a history spanning more than 30 years, DSF has many news articles, stories, presentations and technical papers.

We've organized the collection into a reader-friendly format which includes not only written articles and technical bulletins, but videos of our work as well.

WE ADDED A LIVE CAMERA

One really fun element is the live camera that we have placed in the Orange River for fish (alewives/brook trout) spotting.

Sponsor Focus

USDA

The United States Department of Agriculture has been a long-standing sponsor of DSF programs.

Most recently USDA has supported DSF's East Machias facility with matching grants toward a new lift and the laboratory installation.

The lift and lab renovations provide the final phases of the renovations of the East Machias facility.

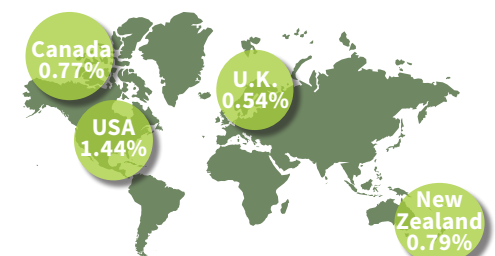
The new laboratory will benefit the memorandums of understanding between DSF, the University of Maine Machias and Washington Academy. The organizations have shared goals including:

- Increasing our knowledge and understanding of eastern Maine's aquatic resources
- Making UMM and WA more competitive in attracting students
- Restoring regional fisheries
- Building economic development strategies to sustainably manage Maine's natural resources
- Educating the next generation of leaders.



USDA provides leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on public policy, the best available science, and effective management.

Through the USDA Natural Resource and Conservation Service, Maine has a powerful partner in 'maintaining necessary habitats in order to maintain individual species, ecosystems, and biodiversity.'



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