



THE CONNECTICUT RIVER SALMON ASSOCIATION N·E·W·S·L·E·T·T·E·R

PUBLISHED BY THE CONNECTICUT RIVER SALMON ASSOCIATION

WINTER 2000 - 2001

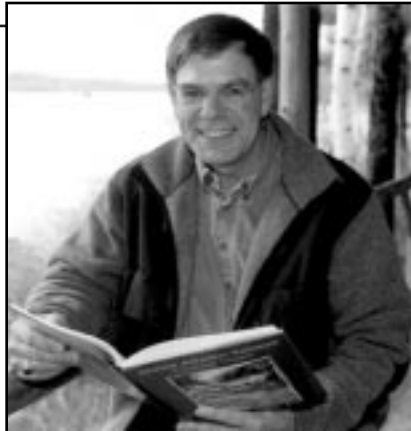
Spectacular 25th Annual Dinner To Be Held at Hawthorne Inn January 27

"The Connecticut River Salmon Association's 25th Annual Dinner and Raffle/Auction is going to be a gala evening," reports CRSA Dinner Chairman Ed Ruestow. "We're going to have two Special Events during the social hour, a timely speaker, and an exceptional assortment of prizes in our raffle and auction." Once again the dinner will be at The Hawthorne Inn in Berlin, Connecticut, the perennial choice of the readers of *Connecticut Magazine* for "Best Prime Rib in Connecticut."

Special Events to Feature Woodcarver and Author/Artist

The Special Events comprise personal appearances by renowned woodcarving artist Ellen McCaleb, and noted outdoors author and artist James Prosek. McCaleb, a 1991 graduate of the University of Pennsylvania, is reviving the 19th century craft of trophy fish

(See Dinner, page 6)



Distinguished Scientist Ed Baum To Be Keynote Speaker

The featured speaker at the CRSA 25th Annual Dinner is Ed Baum, recently retired as Senior Salmon Scientist at the Maine Atlantic Salmon Commission. He will update us on the status of wild Atlantic salmon in Maine, and share his views about the future of Atlantic salmon. Baum has served Maine's wild Atlantic salmon for over 32 years. He was and continues to be a courageous and outspoken advocate. Since retirement, Baum has been honored by a number of conservation organizations. He received the Trout Unlimited National 2000 Conservation Award-Professional, the State 2000 Environmental Award from the Natural Resources Council of Maine, and last November was honored by the Atlantic Salmon Federation as the recipient of its prestigious Lee Wulff Conservation Award. Now a private fisheries consultant, Baum recently traveled to Spain at the request of the Spanish Government to present a paper on Maine's salmon issues. In addition, he will be gathering information for the National Marine Fisheries Service on Atlantic salmon aquaculture issues on both the east and west coasts of the United States, and in Ireland. Prior to his retirement, he made the controversial decision to publicly

(See Keynote, page 6)

Wild Atlantic Salmon in Downeast Maine Listed as Endangered Species

Compiled from publications issued by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service

Wild Atlantic Salmon in eight down-east Maine Rivers are an Endangered Species, according to the Department of Interior's U.S. Fish and Wildlife Service and the Department of Commerce's National Marine Fisheries Service. The Maine Rivers include the Dennys, East Machias, Machias, Pleasant, Narraguagus, Ducktrap, and Sheepscot rivers and Cove Brook. A species is endangered within the meaning of the Endangered Species Act of 1973 if it is "in danger of extinction throughout all or a significant portion of its range." The Services found that the number of naturally reproducing Atlantic salmon in these Maine rivers is at an all-time low, and thus in danger of extinction. Protection under the Act means it is now a federal violation to take salmon in the eight rivers. "Take" means to harass, harm, pursue, trap, capture and collect.

The determination to list Gulf of Maine Atlantic salmon was made jointly by the Secretaries of these Departments in November, and became effective December 18, 2000. According to Jamie Rappaport Clark, director of the Fish and Wildlife Service, and Penny Dalton, administrator of the National Marine Fisheries Service, significant progress has been made under the State of Maine's conservation plan, but disease and other threats remain. Other hazards include the continued use of European salmon strains by Maine's aquaculture industry, resulting in the potential for interbreeding, and competition for habitat and food by aquaculture escapes in Maine rivers. These factors, along with the low number of

(See Endangered, page 6)

The Measure of Success

By Robert Jones, CRSA President and US Commissioner, North Atlantic Salmon Conservation Organization

A brief note from a reader of our last newsletter stated that the content was "distressing" presumably relating to my NASCO report and/or Steve Gephard's article on the disappointing spring salmon returns. The reader questioned if we were "winning battles and loosing wars." Certainly there is reason to be concerned and to feel distressed by the news that worldwide Atlantic salmon stocks are at an all time low. It is also distressing that only 76 adult salmon

returned to the Connecticut River this year. However, it must be remembered that a lot of battles must be won before the war is won.

Atlantic salmon were extirpated from the Connecticut River nearly 200 years ago. A number of attempts to restore the historical runs of salmon have been made during the intervening years. Early attempts failed, partially due to a lack of knowledge about salmon life history and habitat requirements. Much of the necessary knowledge has been gained in recent times and yet there is more to be learned. The fate of juvenile salmon on the high seas and the effect of changes in the marine environment are not well understood. A major problem identified early in the restoration program was the loss of the gene pool of Connecticut River salmon. Given that salmon inhabiting different river systems were thought to have a somewhat different genetic makeup, the "Connecticut River" salmon have long since disappeared.

So, what are the measures of success of the Connecticut River Anadromous Fisheries Restoration Program? It should be noted that initially the primary goal of the Connecticut River program was to restore American shad to their historical spawning area in the river. The secondary goal was to attempt to restore Atlantic salmon to some portion of their historical range in the basin. Even though American shad provided for a major sport fishery and a viable commercial fishery, the public was and is far more interested in salmon restoration. The return of shad to their historical spawning grounds with completion of fish passage facilities at Vernon Dam in Vermont went virtually unnoticed by the public.

Initially, the results of the salmon restoration efforts appeared relatively spectacular. During 1981, 529 adult salmon were known to return to the Connecticut. To date, a total of 4905 juvenile salmon are known to have made the trip to the Davis Strait off the west coast of Greenland and returned as adults to the river. With the completion of the fishway at Bellows Falls in 1984, the first Atlantic salmon to reach the White River in Vermont in nearly 200 years was observed by local resi-

dents. Although the 2000 return number was low, adult salmon were known to return to the Salmon and Farmington Rivers in Connecticut; the Deerfield, Mill and Westfield Rivers in Massachusetts; and the Black and West Rivers in Vermont.

A review of Jay McMenemy's 2000 program summary article (see page 3) shows recent successes and problems. Jay reports that a record 9.3 million fry were released during 2000. This major accomplishment may be overshadowed by the lack of adequate funding, which will mean that the program goal of stocking 10 million fry will not be reached in 2001 even though an adequate number of eggs will be available. An important genetically-based broodstock management program is also hampered by a lack of funding.

What, then, is needed to advance the program and "win the war"? Clearly the program does not suffer from lack of effort. There is a legion of dedicated fisheries scientists, fisheries managers and citizen volunteers working tirelessly to fulfill the goals of the restoration effort. The key to success can be stated in two words: "time" and "support." The advancement of fisheries science takes time, as does the natural development of an Atlantic salmon genetically suited to the Connecticut River. A high level of support is essential to provide the needed resources and allow the necessary time. Grass roots support such as that generated by CRSA's "School Program," broad-based citizen support as is found in CRSA membership, and political support needed to provide adequate funding are where the real battles are being fought. Winning these battles will eventually "win the war" and the full program goals will be realized. ♦

THE CONNECTICUT RIVER SALMON ASSOCIATION

The Connecticut River Salmon Association (CRSA) is a nonstock, nonprofit Connecticut corporation. Our mission is to support the effort to restore Atlantic salmon in the Connecticut River basin, a joint undertaking by the states of Vermont, New Hampshire, Massachusetts and Connecticut, together with the U.S. Fish and Wildlife Service of the National Marine Fisheries Service, pursuant to an act of Congress in 1983.

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Funding for The Connecticut River Salmon Association is received from membership dues, donations, grants, and special events. Membership dues, comments, and letters to the editor may be mailed to:

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CRSA Annual Meeting Set

The annual meeting to elect directors and conduct other appropriate business of the membership is scheduled for 4:30 PM on January 27, 2000 at The Hawthorne Inn, Berlin, CT. The meeting has been called by CRSA President Robert A. Jones and a Notice of the Meeting with a Proxy have been sent to all the members of record as of December 15 by CRSA Secretary, James J. Carroll.

Connecticut River Atlantic Salmon Restoration Program Summary for 2000

By Jay McMenemy, Chair, Technical Comm., Connecticut River Atlantic Salmon Commission; Fisheries Biologist, VT Dept. of Fish and Wildlife

Salmon Production

A record total of 9.3 million salmon fry was stocked last spring into habitat in the four basin states, nearly reaching our goal of ten million fry stocked. Agency personnel from the four states, the U.S. Forest Service (USFS) and the U.S. Fish and Wildlife Service (USFWS) accomplished stocking with the assistance of hundreds of volunteers. Fry were produced at four state hatcheries (Kensington and Hogsback, CT; Roger Reed, MA; Roxbury, VT) and two federal hatcheries (Pittsford and White River). Fry were stocked into tributaries from the Eight Mile River in southern Connecticut to the Mohawk River in northern New Hampshire.

The first-year class of two-year old smolts from the USFWS Pittsford National Fish Hatchery (NFH) was stocked in April. The stocking of 48,000 smolts was approximately half of the goal of 100,000 but was the most smolts stocked since 1994. However, the next two-year classes of smolts at Pittsford were destroyed this fall because they had drug-resistant furunculosis due to the use of raw brook water at that hatchery. The hatchery will be disinfected next summer and new water treatment facilities will be constructed to prevent future disease outbreaks. Bird predation remains a problem at Pittsford due to lack of raceway covers.

Spawning occurs at three state hatcheries (Kensington and Whittemore, CT; Roger Reed, MA) and three federal hatcheries (Cronin, North Attleboro, White River) with assistance from all cooperating agencies. This fall's spawning is still underway, but it appears that we will have record egg production from Connecticut River salmon. However, we do not have enough capacity at state and federal hatcheries to incubate the projected egg production, due in part to the loss of Warren State Fish Hatchery in New Hampshire due to disease problems and lack of funds to rectify them. In addition, staffing issues at the USFWS White River NFH may result in incubation cuts. At best, this will not allow us to increase stocking to ten million fry to meet the goal of fully stocking available habitat. At worst, currently stocked habitat will be left vacant or under-

stocked and eggs will be given away, buried in strewn gravel, or discarded.

Domestic broodstock which have provided eggs and are surplus to program needs were allocated to the states for use in sport fisheries outside the Connecticut River.

Genetics

Genetically based broodstock management continued thanks to cutting-edge research being conducted by the U.S. Geological Survey Biological Resources Division (USGS-BRD) Conte Anadromous Fish Research Center. Spawning of the early maturing salmon of the first-year class of genetically marked broodstock at White River NFH occurred this fall. The planned pilot study of tributary stocking with fry resulting from these eggs had to be canceled due to staffing issues at White River NFH; next year's full-scale study is in jeopardy for the same reason.

Habitat Protection and Restoration

Habitat protection activities continued through state permitting processes. The USFS continued habitat restoration projects in the White Mountain and Green Mountain National Forests. Program cooperators continued work with the U.S. Army Corps of Engineers (USACE) to reduce the environmental impacts of USACE flood control dams. USFWS and state agencies continued to work to improve stream habitat conditions through Federal Energy Regulatory Commission (FERC) relicensing proceedings at various hydroelectric projects.

Fish Passage

Upstream and downstream fish passage was routinely operated at tributary and mainstem dams in all four states. The USACE completed their new salmon trap facility at Townshend Dam on the West River in Vermont. The Corps is also planning to construct a fishway at Knightsville Dam on the Westfield River in Massachusetts, but funding is needed. New downstream passage facilities were designed and built at several projects on Connecticut River tributaries throughout the basin. The McGoldrick Dam on the Ashuelot River in New Hampshire is scheduled to be removed in the spring. Other dam removal and fishway con-

struction projects are in various stages of planning.

A total of 77 adult salmon was counted at fishways this year. This decline in adult returns was predicted due to ocean habitat conditions, and is similar to declines in other salmon rivers in the United States and Canada. Most adults were retained for broodstock, but ten were radio-tagged and released by Pacific Gas and Electric Gen (PGEGen) as part of a study to evaluate the need for upstream passage on the Deerfield River. PGEGen provided the Agencies with a radio receiver to assist in monitoring salmon that did not enter the Deerfield. Adult salmon from this release are known to have entered the Deerfield, Mill and Westfield Rivers in Massachusetts and the Black and West Rivers in Vermont this year.

A total of 222,000 shad was counted at Holyoke Dam this spring, but only 2,600 shad were counted passing Turners Falls. The USGS-BRD Conte Anadromous Research Center and Northeast Utilities studied the bottleneck to shad passage that occurs annually at Turners Falls. Blueback herring were captured below Holyoke and transported to the Ashuelot and Westfield Rivers for spawning.

Research

A variety of research projects were conducted. In addition to Agency staff, researchers were from the Cooperative Fish and Wildlife Research Units at the University of Massachusetts and the University of Vermont, the USGS-BRD Conte Anadromous Fish Research Center, Dartmouth College, and others. A day-long forum of presentations by researchers will be held January 25 at the U.S. Wildlife Service Regional Office Auditorium, 300 Westgate Center Drive in Hadley, MA 01035. Fee for the forum, which will run from 8 am to 4 pm, is \$15 cash at the door. To register, contact the Connecticut River Coordinator's Office at (413) 548-9138. Registration deadline is January 9, 2001.

Outreach

Agency staffs routinely provide presentations, interviews, facility tours, and other educational information to the public. An evening of presentations was

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The CRSA School Program...

'A Reel Life Hook'

By Elaine Holcombe, Timothy Edwards Middle School

"Oh, wow! Look at the eggs! They're so small!"

"Do you think they can see us?"

"They are so cute!"

"I wonder, can they think??"

These are but a few responses made by students at the beginning of the salmon restoration project as eggs are received in January. It constantly intrigues me each time the eggs arrive and students gasp at their numbers (200 per tank). Ownership is immediate as students daily want to peek at the round, orange pearls that have been scattered over the river rocks.

Each year brings its own uncertainties. When dealing with live specimens, one never can predict exactly the way the cycle will unfold. The variables that affect that outcome can impact on a successful or unsuccessful hatching.

The first month is usually uneventful. Try as they may, students attempt to unlock the secrets of the orange globes. Because the eggs do not move very much, the class begins to wonder whether there is something wrong.

"Look, they are getting fatter!"

"I thought I saw one wobble!"

"The eyes are getting so big!"

Yes, the eyed eggs are getting close to hatching. The excitement begins to be felt throughout the room. A hatching date is predicted. It is usually about 4 weeks into the program. Until then, if students haven't been developing their observational powers, they really miss

out, thinking that this period is unexciting instead of a time of wondrous expectation.

The science is constructivist as students will create their learning — question and attempt to answer their own inquiries. They learn that perhaps their thinking needs to be revisited and altered as the testing of hypotheses results in more accurate and solid learning. Classes utilize scientific processes and principles in making their personal observations and decisions. They tell their own story based on solid data gathered as they use the technology of computers to assess the daily development of the salmon.

Once the eggs begin to hatch, classes marvel at the alevin stage with their unique yolk sac attached. "They look like they are carrying their own lunch boxes!" They also hide from the light. Now it is a challenge to try to catch sight of one moving.

"Look, their color is beginning to change!" Sure enough, as the yolk sac diminishes, the alevin begin to change in a lot of ways. Students compete to see who can note more changes. The alevin are beginning to look more like fish as their color changes to brown and fins appear.

"Boy, are they fast swimmers!" The salmon are more streamlined and very quick. Indeed the next stage brings



At Timothy Edwards Middle School, young scientists test hypotheses and hone observation skills. (Photo: E. Holcombe)

many surprises in the physiological changes that take place. Students begin to work with their data to select a stock-out date. When will the alevin be officially fry?

Encouraging observational skills strengthens the students' scientific knowledge, opening young minds and getting them ready to experience the next level of process learning and problem solving.

The startling discovery that a life cycle can be studied firsthand enables the student to make cognitive connections with their prior knowledge, expand their knowledge base and make applications not only in future classroom situations but beyond.

It is truly a reel life hook. ♦

[Elaine Holcombe teaches 6th grade science at Timothy Edwards Middle School in South Windsor, and is a CRSA Board member.]

December Orientation Provides Introduction to CRSA School Program

CRSA Vice president and Education Committee chairman Dick Bell welcomed more than 30 teachers, volunteers, and guest speakers to the School Program Teacher Orientation December 2, 2000, at the Farmington Marriott, Farmington, CT. The School Program continues its exponential growth under Bell's stewardship. Fifty-two schools are expected to participate in the sixth year of the program, up from forty-four last year.

About a dozen teachers new to the program learned about the history of Atlantic salmon restoration in the Connecticut River watershed; the life cycle of Atlantic salmon; curriculum for the program; tank operations, CRSAs web site, and support provided by CRSA to the classroom teacher. Preparations are being made for egg delivery early in January.

Growing by Leaps and Bounds!

How to Start an Atlantic Salmon Program in Your School

By Richard G. Bell, Education Chairman

Helping a school in your city or town to incubate Atlantic salmon eggs and raise fry as an Earth Science tool is easy — and exciting for the school! CRSA has found that the two most important elements are an interested teacher and a dedicated volunteer. Neither needs to know the physiology or life of salmon or how to fish for salmon. The CRSA School Program is about environmental education, not fishing. The CRSA provides the background and instructional materials to the teacher and the volunteer necessary to make the experience successful for the teacher, cogent and rewarding for the student, and memorable for the volunteer.

Each new school receives the CRSA School Program Manual, with over 100 pages of articles and instructions; the 100-page teacher's curriculum supplement "Fish Friends," from the Atlantic Salmon Federation; and a set of large posters of stages in the life of an Atlantic salmon. The CRSA provides a list of materials to be obtained by the school, along with estimated prices. These include the tank, the chiller, a filter system and insulation for the tank, which must be kept between 38° and 45° F from early January until late April or early May when the fry are

stocked out. The cost for the school installation typically runs about \$700. The materials provided free to the school cost the CRSA about \$300 per school. Once purchased, the system costs about \$25 per year to maintain. In every case, the school must be supplied with Atlantic salmon eggs that are produced by the Fisheries Departments in the basin states, and the U.S. Fish & Wildlife Service.

Training for teachers and suggestions about how to use Atlantic salmon as a teaching tool are offered at a free, one-day Teacher's Orientation each year in late fall. Participants include teachers who use the salmon egg incubation as a teaching tool, salmon biologists involved in the restoration effort from the state in the Connecticut River Basin where the school is located, and experts from the CRSA who are actively involved in the salmon restoration as well as the school program. The session includes a presentation on setting up and managing the tank system, trouble-shooting problems, classroom exercises and activities, a history of salmon in the Connecticut River Basin, and a meeting with the volunteers who will deliver the eggs in early January.

The program is currently used by teachers in middle schools and high schools, with a few classrooms of sixth graders. Although used primarily by Earth Science teachers, the program also has been successfully employed for the past three years by an English as a Second Language teacher. The program started in Connecticut five years ago with a single school site; in 1999-2000, there were 44 schools. Maine began in the early 1990s and now incubates eggs in some 150 schools. There are over a hundred schools in Massachusetts, plus some in New Hampshire and Vermont. It may be the fastest growing science tool in New England, and it doesn't require updated software or new hardware every few years. The school program now involves enough time to manage that the basin states have, in many cases, delegated contacts and the distribution of the eggs to the CRSA and other volunteer organizations.

If your school is located in Connecticut, Western Massachusetts, Vermont or New Hampshire and you would like information about the program, contact CRSA Vice President and Education Chairman Richard G. Bell at (203) 288-2386 or (203) 784-8275, or go to CRSA's website: www.ctiversalmon.org/schools.html. ♦

More Volunteers Needed as Program Grows!

By Richard G. Bell, Education Chairman

In five years, the CRSA School Program in Connecticut has grown from one school to fifty-two. Each new school needs some 12 hours of volunteer time the first year. Current schools require an average of four man hours per year, which translates into over thirty-five days to operate the school program.

During the 1999-2000 school year, there were eleven CRSA School Volunteers who made the program possible. Most of the volunteers are either retired, or have occupations that permit them to offer some time during the work week while schools are in session. The only qualification is an interest in environmental education and a few hours of free time between December

and early May. CRSA volunteers assist with egg delivery to schools for five days in early January, then assist for a day in early May when the salmon fry are stocked out.

Volunteers don't have to know anything about salmon or fly fishing, but they must be willing to spend a few hours in one of the fastest growing science programs in New England—and have fun at the same time! The CRSA trains both teachers and volunteers. To volunteer, please contact:

Richard G. Bell
75 Ridgewood Avenue
North Haven, CT 06473
(203) 784-8275 or (203) 288-2386

School Program in the News

CRSA's Schools Program was highlighted in two periodicals recently. *Even Salmon Have Their Day* was the featured article in the spring edition of *Schoolhouse News*, a publication of the Connecticut Education Association. The *Connecticut Journal of Science Education* published a scholarly article written by three Connecticut teachers, Alan Concilio, Science Coordinator of Woodbridge Public Schools, Elaine Holcombe, sixth grade teacher at Timothy Edwards Middle School in South Windsor, and Marjorie Drucker, seventh grade teacher at North Haven Middle School, in its Fall/Winter 2000 edition, Vol. 38 No. 1. Their work is titled, *The Restoration of the Atlantic Salmon: A Classroom Project*.

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carving, painstakingly rendered out of a single block of wood and brought to life with oil paints. She tries to represent the fish as caught, without trying to photographically replicate it. McCaleb was featured in the Winter 1999 edition of the *Atlantic Salmon Journal*. She will display examples of her finished pieces, including a salmon caught on the Margaree River in Cape Breton, Nova Scotia, and works in progress. She will be available to answer questions about her unique art form. McCaleb also is donating to the CRSA Live Auction a trophy carving of someone's favorite species, up to 30 inches in length. For more information about McCaleb and her work, go to her web site at www.fishcarvings.com.

Prosek is well known for publishing his first book, *Trout: An Illustrated History*, at the age of 19, while a student at Yale University. His highly acclaimed second book, *Joe and Me: An Education in Fishing and Friendship*, was published during his senior year in 1997. Now 25, Prosek's third book, *The Complete Angler: A Connecticut Yankee Follows in the Footsteps of Walton*, was released in 1999. His latest offering, *Latitude 41*, will be released in 2001. Prosek will be available to sign his books, and to discuss his artwork. He also is donating work to the auction. His web site is www.troutsite.com.

Prizes and Auction Items

A Grand Prize worth more than \$1,000 is only the beginning. State-of-the-art rods from makers including Loomis, Powell, Sage, Thomas & Thomas,

Winston, plus a custom-made rod by Paul Just, reels from Bauer, Ross and Finn-Nor, and fine artwork including originals by Luther Hall will be offered as part of the outstanding collection of raffle prizes and auction items being assembled by Chairman Ruestow. In addition, trips include a full day of guided fishing on the Bow River in Calgary, Alberta, Canada for two rods, and two days at The Normaway Inn in the Margaree Valley on Cape Breton, a classic setting with superb food and service — a white shingled lodge and cabins, tucked away on 250 acres of woodlands and fields, an idyllic place to start and finish the Cabot Trail. Then there is the Grand Prize, a complete Orvis fly fishing outfit, comprising a Trident TL 908-4 fly rod and a Vortex 7/8 reel with backing and line. Enjoy the quest for bargains in the live and silent auction and large bucket raffle. [For an up-to-date donation list, check our web site at www.ctriversalmon.org/auction2001.html

Our annual dinner is CRSA's sole fundraising event. The Social Hour begins at 5 p.m. Dinner will be served at 6:30 p.m. sharp, with a targeted conclusion at a respectable hour. Join us at the Hawthorne Inn, conveniently located on Rt. 15, the Berlin Turnpike, in Berlin, CT. All seats are reserved, and tables are available for groups. Contact Ed Ruestow at 860-521-1426 or Jim Carroll at 860-236-5181 for information and reservations. Accommodations are available at the adjacent Hawthorne Inn Lodge, 860-828-4181. Special rates are available for CRSA dinner guests. ♦



Special Dinner Events

Woodcarver Ellen McCaleb, top, and author James Prosek, below, will be featured guest artists at CRSA's 25th Annual Dinner on January 27, 2001.

McCaleb is reviving the 19th century craft of trophy fishcarving. She will be available to answer questions about her craft, and has donated a custom trophy carving to the CRSA live auction. Author James Prosek has just completed his fourth book, *Latitude 41*, to be published in 2001. He will sign copies of his books and discuss his artwork. He is also donating works to the CRSA auction.

Keynote (continued from page 1)

support as a private individual listing Atlantic salmon under the federal Endangered Species Act, notwithstanding considerable political pressure because of Maine Governor Angus C. King's position to the contrary. Baum's research is cited in the Ruling published in the *Federal Register* by the U.S. Fish & Wildlife Service and National Marine Fisheries Service, listing wild Atlantic salmon in eight downeast Maine rivers as endangered species. He is the author of the book, *Maine Atlantic Salmon: A National Treasure*. ♦

Endangered (continued from page 1)

adult salmon returning to spawn in the eight rivers, and low survival rates for young salmon in these rivers, made the Act's protection critically important to ensure the survival of these salmon. The Services will develop a recovery plan to rebuild the wild Atlantic salmon population so the species no longer needs Endangered Species Act protection. For more detailed information and links to other sites about this topic, visit CRSA's web site at www.ctriversalmon.org. ♦

CRSA Hotline Discontinued

CRSA recently discontinued its Hotline telephone number for information on salmon returns and fry stocking in Connecticut. CRSA is working with Steve Gephard, Connecticut Department of Environmental Protection Supervisory Fisheries Biologist, to provide up-to-date information about fry stocking on our web site, www.ctriversalmon.org, this coming spring. Weekly salmon return information will be available on our web site, and day-to-day information will be available through a link to the U.S. Fish and Wildlife Service web site at www.fws.gov/r5crc/fish/daily.html.

New England Council Report

By Richard G. Bell, Vice President, CRSA and President, New England Council

CRSA Vice President Dick Bell is the newly elected president of the New England Council of the Atlantic Salmon Federation (ASF), of which CRSA is an affiliate organization. We will periodically publish a digest of his notes from recent meetings of the ASF Management Board and Board of Directors. The Management Board met in Bangor, Maine on November 3-4, 2000, and the Board of Directors met in New York City November 8-9, 2000.

The ASF meetings included discussions of the impact of the Canadian Marshall case on the future of Atlantic salmon north of the border; and the impact of aquaculture on the resource.

The Marshall Case

Donald John Marshall, Jr., a Mi'kmaq Indian, was charged by Canadian authorities with violating regulations under the federal Fisheries Act. In a landmark 1999 decision, the Canadian Supreme Court interpreted provisions of the Canadian Constitution Act, 1982, with respect to an 18th century treaty right that permits the Mi'kmaq community to work for a living through continuing access to fish and wildlife to trade for "necessaries," which a majority of the Court interpreted as "food, clothing and housing, supplemented by a few amenities." The Court found that Indian band treaty rights are subject to regulation, provided such regulation is shown by the government to be justified on conservation or other grounds of public importance. In addressing the collision between a treaty right and government regulation, the Court acquitted Marshall because the prosecution did not raise justification as an issue, and thus the government's continuing powers of regulation were not implicated.

ASF is actively involved in matters flowing from this decision. There are 34 Indian bands in Atlantic Canada. Of these, 29 have agreements with the government regarding fishing and quotas entitling them to a "moderate livelihood" from fish and wildlife assets. The bands take a more expansive view of this than the government; ASF is involved in a process to define it. The heart of the problem is the Indian use of wild salmon for "food, social and ceremonial purposes." The Canadian Department of Fisheries and Ocean has tried to keep salmon out of the Marshall

framework, as it is not a "commercial" species. However, since fish can be sold, and the proceeds used to promote social purposes, the Indians argue that commercial sales of salmon are permitted under the decision. One of the problems is that off-reservation Indians may want to make this a citizenship entitlement.

The government gives a "priority" right to Indians, after conservation requirements are met. ASF believes the quotas for salmon on the reservations are far too high anyway, given the state of the stocks; for instance, in Nova Scotia, the combined Indian quota far exceeds current total returns to rivers. ASF has proposed establishing a community watershed management process, integrating the "First Nations" (or Indian bands) into the process. It should provide balanced opportunities to manage resources. It is suggested that ASF approach this problem on a river-by-river basis. It is imperative that this be achieved quickly to implement management measures before the return of salmon to the rivers in 2001. All agreements with all Indian bands were scheduled to expire December 31.

Aquaculture

Aquaculture occupied much of the discussions. Escapement and disease (including parasites) are the two major problems. There are two sea lice species that affect aquaculture and saltwater species. Fish farms produce enormous concentrations of these. Longer-term effects of pollution from waste discharge are also of increasing concern. The Army Corps of Engineers has cage responsibility in the United States. There is a Scottish invention on the market to prevent or limit escapement that is very good and safe, but costly. Because the economics of salmon aquaculture are very marginal, the North American aquaculture industry will fight any regulatory cost.

Chile has dumped so much salmon on the U.S. market that U.S. producers have filed and won dumping suits. It is questionable whether the aquaculture of salmon can continue as a viable economic undertaking in North America but even if salmon are stopped, other fish species such as halibut will be pursued. Aquaculture is the second largest

industry in Eastern Canada, offering employment where jobs are most needed. Ninety-five percent of Canadian aquaculture in Eastern Canada is in the Bay of Fundy and the Gulf of Maine. The ASF policy is that it must be kept there until we know what to do with it and how to make it safe. ♦

Vo-Ag Students Raise Fry in First Large-Scale Project

By James J. Carroll, Secretary, CRSA

Last May 23, Joe Ravita, CT DEP Manager of the Whittamore Atlantic Salmon Station, delivered 400 of his Atlantic salmon fry to Northwest Regional High School #7 Vo/Ag Department's new aquaculture facility. The fry are being raised to the smolt stage by the Faculty and the Vo/Ag students and in the Spring of 2001, they will be stocked out by the students in the Connecticut River watershed.

This is the first, large-scale Atlantic salmon smolt rearing effort by a school in Connecticut. The NW Regional #7 Agricultural Education Department is raising the fry in a new, 500-gallon, closed circulation tank system which incorporates a high capacity chiller designed to keep the tank water temperature below 60° F. which is needed to rear the salmon. It also incorporates the latest in filtration and purification technology. The school is also planning to rear trout, tilapia and aquatic plants in three other new tank systems.

David B. Hopson, Program Coordinator said, "Aquaculture is becoming an increasingly important part of agricultural education in the United States. This new facility and our faculty will give our students a window on a fast growing field. We are fortunate to have first class equipment and capable instructors for our students. We are very excited to be a program partner with the CT DEP."

The project was the result of teacher Jason Bassi attending a CT DEP Salmon Fry Stock-Out Volunteer Sign Up meeting at the town library in Farmington last winter. Jason met CT DEP biologist Steve Gephard, who immediately saw this as a chance for a co-operative program to raise smolts. ♦

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held in Littleton, NH last March at the request of the Connecticut River Joint Commissions. Programs involving salmon egg incubation and education about salmon biology were conducted in schools in cooperation with the CRSA and Trout, Unlimited.

A great deal of progress was made this year in continuing efforts to restore Atlantic salmon to the Connecticut River basin. With continuing expansion of fry stocking, improvements in fish passage, and sound genetic management we expect runs to improve in the future. This will be enhanced further if expected improvements in marine habitat conditions materialize. However, continued staffing and funding difficulties in the USFWS threaten continued progress. ♦

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