



Fisheries and Aquatics Bulletin

(Fisheries and Aquatic Resources (FAR) Program)

Fisheries and Aquatics Bulletin (FAB) is an electronic info-journal designed to distribute and exchange information about the USGS's Fisheries and Aquatic Resources Program to interested scientists and managers throughout the Bureau.

From the Program Coordinators Desk

Welcome to the second edition of FAB. Since the maiden edition of FAB, we have received scores of positive comments about FAB, as well as suggestions for enhancing and improving the Newsletter. Comments have been received from scientists throughout the Bureau and we welcome your comments for making your Newsletter as meaningful and informative as possible. Currently there are over 300 subscribers to the FAB. We appreciate your suggestions for improving information flow in the Fisheries and Aquatics Resources arena.

Speaking of Information flow, this edition of FAB features two prime examples of effective Fisheries and Aquatic Resources information flow. First, take a look at the new "TAKE A LOOK" section, which features the "**Fisheries and Aquatics Resources NBII Node**". Jim Meade and his staff at NARL, in cooperation with Gladys Cotter and the Biological Informatics Program, have established an outstanding and informative FAR information node. This site is well worth exploring.

Secondly, this edition features an excellent example of partnership research. Lyman Thorsteinson, WFRC, has recently co-authored, with the American Fisheries Society, a most impressive tome on the **Fishes of Alaska**. This 1,116 page resource is impressively standard setting. These are two great examples of the quality of science and scientists that BRD and USGS have to offer.

We want to hear from you.

Thanks,
Jim Preacher

In's & Out's

Frank Panek— LSC Fish Health Lab Director recently completed a 30-day tour as the Center Director of the Nat'l Wildlife Health Center, Madison, WI.

Jeff Keay, Staff Biologist Eastern Region Office, has been selected as the new Deputy Director of the FL Caribbean Science Center.

Debbie Barthello, Administration Professional joined the HQ Fisheries & Aquatics Resource Staff on April 22. We welcome Debbie to the FAR Team!

TAKE A LOOK

Fisheries and Aquatics Resources Node

The new Fisheries and Aquatics Resources NBII Node (<http://far.nbii.gov>) provides a plethora of information about fisheries and other aquatic resources. Jim Meade, Director of the Northern Appalachian Research Laboratory, and his staff in cooperation with the Biological Informatics Program were instrumental in establishing the site. If you wish to add scientific information to the node, please contact Cara Campbell at ccampbell@usgs.gov



Take a look at USGS's new Recreation Web Site:

<http://recreation.usgs.gov>, This is the USGS Recreation Site, the Science Gateway for Safe and Vital Enjoyment Outdoors! The site was created with input from all four USGS disciplines, with information on; hunting, hiking, biking, fishing, climbing, camping, boating, and nature watching. The site is still in the works, so please contact the site webmaster if you have recommendations to make it better!



Fishes of Alaska is the only comprehensive guide to the marine and freshwater fishes of Alaska. Coverage extends out to the 200-mile limit and down to the abyssal plains of the Arctic Ocean, Bering Sea, Gulf of Alaska, and North Pacific Ocean with accounts of 601 species in 108 families and 36 orders. The rare and poorly known species are covered as well as the more familiar inshore, commercial, and sport fisheries. (Authors: Catherine W. Mecklenburg, T. Anthony Mecklenburg, Lyman K Thorsteinson)

Fisheries and Aquatic Resources Related Meetings, Workshops, and Seminars



July 5-7
Society for Conservation GIS
(SCGIS 5th Annual SCGIS
Conference, La Casa del Zorro in
Borrego Springs
www.lacasadelzorro.com

Aug 5-9
Ecological Society of America
Tucson, AZ
www.esa.org/tucson/

Aug 18-22
132nd American Fisheries Society
Annual Meeting
Baltimore, MD
Contact: bfritz@fisheries.org

Recent FAR Science Presentations, Publications, & Research

Benthic Macroinvertebrate populations of urban freshwater tidal wetlands in Anacostia River

Kevin Brittingham, USGS Patuxent Wildlife Research Center

Research on benthic populations of tidal wetlands, especially freshwater, has been an area of research in short supply. This study will characterize the benthic communities establishing themselves on recently reconstructed urban freshwater tidal wetlands in Washington, D.C. The focus of the study will be the two main areas of Kingman Marsh which were reconstructed from Anacostia dredge material by the U.S. Army Corps of Engineers in 2000. Benthic populations from this site will be compared to a similarly reconstructed, Kenilworth Marsh (1993) just one half a mile upstream, as well as the relic Dueling Creek Marsh in the Anacostia and the outside reference Patuxent Marsh.

Flavobacterium psychrophilum And The Impact Of Coldwater Disease Within Atlantic Salmon Restoration Among Sea Run Fish From Different Watersheds

Rocco C. Cipriano, USGS Leetown Science Center, National Fish Health Research Laboratory

Federal restoration of Atlantic salmon in the northeastern United States concentrates principally upon enhancement of stocks within the Connecticut River, Merrimack River, Penobscot River and several smaller rivers on the Downeast coast of Maine. River-specific brood stocks are used to enhance the genetic integrity of the fish within each river system. Consequently, the gametes produced from the limited number of adult salmon returning to each of these river systems are extremely valuable in terms of providing a sufficient number of offspring to continue the restoration effort. In the course of study, chronic symptoms of Bacterial Coldwater Disease, caused by *Flavobacterium psychrophilum*, were noted among a proportion of offspring that are propagated and stocked as smolts. Classical peduncle lesions and chronic mortality were associated with the affected fish. The disease was more pronounced in salmon reared in two-year rather than one-year smolt production cycles. Following the identification of these symptoms, the pathogen was shown to be the etiologic agent of mortality among yolk-sac fry in Heath incubators, associated with reductions in egg viability, and indicated to

be transmitted by intra-ovum infection. Subsequently, vertical transmission of *F. psychrophilum* was shown to be widespread throughout the range encompassed by the restoration program. The pathogen, therefore, has a significant role in the production of quality gametes and may be an extremely important factor in the post-stocking survival of salmon fry and smolts.

Assessment of Habitat, Fish, Communities, and Streamflow Requirements for Habitat Protection, Ipswich River, Massachusetts, 1998-1999

Water-Resources investigations Report 01-4161
David Armstrong, Todd Richards, and Gene Parker

From July to September, 1998 and July and August 1999, the relations among stream habitat, fish communities and hydrologic conditions were investigated in the Ipswich River Basin in northeastern Massachusetts. According to the report, specific features that provide fish habitat decreased in availability to aquatic communities with declining streamflows and generally became unavailable after streamflows dropped to the point where the edge of water recedes from the stream banks. Fish sampling indicated that the fish community in Ipswich River is a warm-water fish community dominated by pond-type fish. However, the River could support cold-water species if adequate flows were maintained. Four riffle sites were identified as critical habitat areas because they are among the first sites to exhibit fish-passage problems or to dry during low flows. A watershed-scale precipitation-runoff model previously developed for the Ipswich River was used to simulate streamflows under no withdrawals and 1991 land use to evaluate habitat suitability under conditions that approximate the natural flow conditions. These simulated flows were used to calculate streamflow requirements by the Tennant and New England Aquatic-Base Flow methods. Stream channels were surveyed at the critical riffle sites, and Water Surface Profile models were used to simulate streamflows and hydraulic characteristics needed for determining streamflow requirements by use of the Wetted-Perimeter and R2Cross methods. Simulated flows under no withdrawals were used to determine monthly mean flows and other flow statistics used in the Range of Variability Approach to define a flow regime that mimics the river's natural flow regime.

In the NEWS (E&E Publishing)

SALMON: New Study links delayed mortality to stress from dams

A group of biologists from the Fish & Wildlife Service, Idaho Dept. of Fish and Game, Utah State University, and Eco Logical Research, have published an independent study in the *North American Journal of Fisheries Management* linking delayed mortality of Snake River salmon to their having to pass around or through as many as eight hydroelectric dams during migration. Delayed mortality is the term used when juvenile salmon successfully out-migrate from the hydropower system but fail to return in a few years as adult salmon. Delayed mortality could be caused by a number of things, including ocean conditions, harvesting, stock viability, habitat conditions, predation and the hydropower system, to name a few. The new study, "Evidence Linking Delayed Mortality of Snake River Salmon to Their Earlier Hydrosystem Experience," examines the latter hypothesis. The study is broken down into three sections. The first reviews all the existing evidence and literature showing that salmon navigating the Snake River dams incur numerous stresses. The authors begin by saying the impacts of stress on fish and fish populations have been widely studied and documented. That said, the study then details a number of acute and chronic ways that hydropower dams stress salmon, with an emphasis on chronic stress.

USFS biologists catch Atlantic fish in Alaskan waters

U.S. Forest Service biologists say they found an Atlantic salmon swimming in fresh water in Alaska's Copper River Delta during a survey last year. The Atlantic salmon likely escaped from a commercial fish farm in British Columbia or Washington state, biologists say. Alaska outlaws fish farming, and state officials consider farmed Atlantic salmon to be an invasive species that could displace native Pacific salmon species. Atlantic salmon have a more rounded head shape than the Pacific variety, as well as spots that resemble "little X's" rather than round spots (Wesley Loy, Scripps-McClatchy/ *Seattle Post-Intelligencer*, May 11)

Alaskans unite against Canadian fish farms

The decision to overturn a moratorium on fish farms in British Columbia has a wide range of groups in Alaska, Canada and the Northwest up in arms, including environmentalists, fishermen, sportfishers, as well as top Alaskan politicians. The fish farm dispute has the potential to unsettle the Pacific Salmon Treaty, an agreement between the U.S. and Canada that attempted to solve longstanding disputes over the management of salmon and salmon habitat. Salmon in the Northwest, Alaska and British Columbia spend most of their life cycle in Alaskan waters, said Davidson, and then spawn in Canadian streams. Atlantic salmon -- the species typically raised in fish farms -- in Pacific waters could "have the potential to really harm the wild salmon resource" by spreading disease, he said. There are also concerns about the effects on wild stocks if the two species interbreed.

Industry, Canadian government say regulations en route

"What we have created with the policy framework is a platform for the development of an environmentally sound, sustainable and technologically advanced industry," said McMullin, executive director of the B. C. Salmon Farmers Association. "Despite the costs, industry has embraced tough new environmental standards in exchange for the right to grow and create the economies of scale necessary to compete in the fastest growing food production industry in the world."

Alaskan delegation weighs in

Given the expanding B.C. salmon farming industry, the prevalence of pollution and escaping fish, and the impact on Alaskan native and commercial fisheries, Sen. Murkowski suggested an annex to the treaty. The annex would create a "mutually agreed framework for the control of further migration of Atlantic salmon into the habitat of native species." That framework would ensure that the treaty is upheld and would also establish a reparations process for any damage caused by Atlantic salmon in the wild.



FAB NEEDS YOUR INPUT: This is your fisheries and aquatic resource information source and bulletin. We need your input, suggestions, and articles to make it a success. Please submit, articles of interest, science accomplishments, announcements, notification of conferences-meetings-workshops, etc. that you would like to see in the FAB.

-Emily Tracy, Editor