



The American Fisheries Society
Genetics Section
Newsletter

Volume 21, Issue 1
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President's Message

My term as president of this section is nearing its end and it's time to elect new officers. We have a fine slate of candidates for President Elect and Secretary Treasurer and I'm sure the section will be in good hands with incoming president Kim Scribner. Please make sure to read the candidates bios in this latest newsletter. Pending approval of electronic balloting in our revised bylaws, electronic ballots should be going out soon. Please return your ballot promptly!

The AFS annual meeting in Ottawa is shaping up to be a fine meeting. President Elect and Program chair **Kim Scribner** has lined up two excellent section-sponsored symposia. The first is titled "Contributions of genetic principles and technology to sustainable fisheries: concepts, challenges, and case studies" and is being organized by Chris Wilson and Kim Scribner. The second is "Cultured aquatic animals: Use and Implications for Stock Enhancement, Fisheries Management, and Species diversity" organized by **Jesse Trushenski, Kim Scribner, and Mike Denson** and will be under joint sponsorship of the Genetics Section and the Fish Culture Section. We've been talking about working closer with the Fish Culture Section for a long time and I'm really happy to see this symposium developed.

I'll be representing the section at the AFS Governor's Board meeting on March 8 in Annapolis, MD. This is a great opportunity to bring members' concerns to AFS officers, members of the executive committee, and representatives of other section. If anybody has any items they wish to bring up please contact me.

Sincerely,
Ed Heist,
AFS Genetics Section President

Genetics Section Officer Elections

Listed below are the candidate biographical sketches for our upcoming section elections. For president, our candidates are **Maureen Small** and **Bill Templin**. **Meredith Barton** and **Brian Sloss** have agreed to run for Secretary / Treasurer. In early March, all members will receive a ballot by email. You must return this e-ballot to **Jeff Hard** (Jeff.Hard@noaa.gov) on or before **March 15, 2008**.

Maureen Small, Candidate for President

I am a fisheries geneticist/biologist at the Washington Department of Fish and Wildlife in the Conservation Division. I received my doctorate in 1994 from Duke University where I studied population genetics of oysters at the Duke University Marine Lab. I received further training in my postdocs, first at the Department of Fish and Oceans in Nanaimo, Canada, where I conducted research on population genetics of salmon. Then I went to the National University of Ireland in Galway to work with an EU consortium researching patterns and processes generating biodiversity, using intertidal snails as a model. Next, I went to Idaho State University to study population genetics of Arctic mammals and also spent a year as a visiting professor teaching biology, evolution and population genetics.

While I have worked with a variety of genetic systems in a variety of organisms, my main interest is how genetic structure reflects the varying historical processes of a species and the utility of this information for conservation and management. My work at WDFW provides interesting challenges since many of my projects require unraveling anthropogenic influences on population structure of native salmonids in the dynamic environment of the Pacific Northwest and presenting this information in a useful format for managers.

I am interested in making a contribution to AFS through this presidency since I view genetics as a vital component to all conservation and management plans and thus an integral part of all fisheries research.

Bill Templin, Candidate for President

I am currently the Principal Geneticist leading the Gene Conservation Laboratory at the Alaska Department of Fish and Game. During the 13 years that I have worked at this lab, I have been involved with applying genetic information to the problems faced by managers of local, national, and international fisheries resources. Much of this has centered on issues around harvesting commercially important Pacific salmon species. In the process, I have been involved in developing large-scale baseline datasets based on allozyme, microsatellite, and single nucleotide polymorphism markers at multiple scales, investigating patterns of genetic variation, and developing and applying model-based methods for mixed stock analysis. I graduated from Wheaton College with a B.S. in Biology and the University of Alaska Fairbanks with a M.S. in Fisheries Science.

I am an active member of the American Fisheries Society and am currently the Secretary-Treasurer of the Genetics Section. I see that the perennial problem of membership facing both the parent society and the Genetics Section cannot only be

approached by encouraging fisheries professionals to join up, but must also be approached by increasing the relevance of the society for the professional. Seeing the need and provided the opportunity, I will continue to do my part to help find a solution.

Candidates for Secretary-Treasurer

Meredith Bartron, Candidate for Secretary-Treasurer

I serve as the regional geneticist for the northeast region of the U. S. Fish and Wildlife Service, at the Northeast Fishery Center Conservation Genetics Lab in Lamar, Pennsylvania. I received my PhD from Michigan State University and BS from the University of Montana. Current research in the lab focuses on the application of genetic principles and techniques to conservation and management issues, with emphasis on broodstock management and the interaction between genetic population structure and habitat usage.

When I attended my first AFS annual meeting in Charlotte, NC, and at annual meetings since, I was impressed by the supportive community of the genetics section. While a graduate student I appreciated the opportunities the section provided for meeting researchers in the field and for the quality of the symposiums it sponsors. By acting as the secretary-treasurer for the genetics section, I hope to serve the section so it can continue in its mission of promoting genetics in fisheries management.

Brian L. Sloss, Candidate for Secretary-Treasurer

I am the Assistant Unit Leader of the Wisconsin Cooperative Fishery Research Unit and an adjunct professor of the College of Natural Resources at the University of Wisconsin-Stevens Point. I teach a graduate-level course in ecological genetics and am responsible for training graduate students in conservation genetics. I received my Ph.D. from Southern Illinois University-Carbondale in 2001 and was an Oak Ridge Institute of Science and Education Post-doctoral fellow with the Environmental Protection Agency in Cincinnati, OH. My current research program includes specific research aimed at addressing four main research priorities within Wisconsin and the upper Midwest: (a) the impacts of historical and contemporary fish stocking on genetic integrity, (b) the effects of broodstock selection strategies and culture techniques on the genetic diversity of propagated fish, (c) restoration ecology and optimization of genetic diversity, and (d) the molecular ecology and the management of exploited fisheries. These research priorities are addressed through the use of molecular genetic data coupled with ecological/demographic data of native and introduced populations of various fish species including muskellunge, walleye, lake sturgeon, brook trout, and lake whitefish.

I believe a strong fisheries professional is an individual that is diversified in their knowledge, is open-minded yet stands on solid principles, and is willing to share their time and effort to further the conservation and management of our natural resources. As such, I strongly value membership in the American Fisheries Society and its Sections and believe all professionals but especially young professionals and undergraduate/graduate students should be encouraged to become active participants in each. I would welcome the opportunity to serve the Genetics Section as Secretary/Treasurer.

Applications Sought for James E. Wright Graduate Award

The Genetics Section of the American Fisheries Society is pleased to announce the **James E. Wright Graduate Award**. The Genetics Section's graduate student award is given in the memory of Jim Wright, one of the founders of fish genetics research and education in North America. The work of Jim Wright and his students combined classical chromosome studies and allozyme inheritance and helped shape our understanding of the salmonid genome.

This award is presented annually at the Genetics Section meeting at the AFS Annual Meeting and is intended to recognize excellence in graduate-level work in fisheries genetics and to assist graduate students with travel to the national meeting. In 2007 the section awarded Jocelyn Lin of the University of Washington with a \$700 check to help attend the 2007 meeting in San Francisco. The section anticipates awarding two checks for \$500 each to attend the 2008 AFS annual meeting in Ottawa.

Selection will be based on the following criteria:

1. Potential for success in research in fisheries genetics (60%)
2. Anticipated contribution to upcoming annual meeting, e.g. paper, poster, or other contribution (20%)
3. Service to the Society, its Sections, or Chapters (10%)
4. Demonstrated need for travel assistance (10%)

Application Procedure:

The applicant must be a full or affiliate member of the Genetics Section at the time of application. The application package should include:

1. A brief curriculum vitae including anticipated degree, date of completion, and career goals
2. A statement of the thesis or dissertation and abstract of progress to date
3. The names and addresses of two references familiar with the applicant's background and abilities.
4. A statement of previous service to the Society, its Sections, or Chapters, and need for travel assistance.
5. A statement addressing anticipated contribution to the upcoming annual meeting.

Deadline for application is: **May 18, 2008**

All application materials should be addressed to: Jeffrey B. Olsen, Conservation Genetics Laboratory, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503; ph (907) 786-3598; e-mail: jeffrey_olsen@fws.gov

International Marine Conservation Congress

The Marine Section of the Society for Conservation Biology will be hosting its first stand-alone meeting, the **International Marine Conservation Congress**, from 20-24 May 2009 at George Mason University near Washington D.C. This will be an interdisciplinary meeting that will engage natural and social scientists, managers, policy-makers, and the public. The goal of the IMCC is to put conservation science into practice through public and media outreach and the development concrete products (e.g., policy briefs, blue ribbon position papers) that will be used to drive policy change and implementation. Major themes that will be addressed include Global Climate Change, the Land-Sea Interface, Ecosystem-based Management, and Poverty and Globalization.

In an attempt to tackle the most pressing issues currently facing marine conservation, IMCC will host exciting plenary talks and soliciting creative submissions for interactive symposia and workshops. The conservation community will be challenged to go beyond the typical communication of data and propose symposia and/or workshops where talks will be followed by lively, participatory discussions to address a controversial topic or develop innovative solutions to a current conservation challenge. Symposia organizers will be encouraged to invite a select group of speakers and to devise creative ways to facilitate discussion. Smaller workshops will be held to bring together people with diverse expertise with the goal of developing a list of recommendations, policy briefing or white paper on a specific topic. Workshops can be held over 3 consecutive days.

Planning is well underway and we will begin advertising in earnest very shortly. So, check the marine section's website regularly for updated information and volunteer opportunities. In the meantime, please keep 20-24 May 2009 open and plan to attend and participate!

Postdoctoral or Ph.D. Student Opportunity in Aquaculture Genomics

Building a Superior Striped Bass: A Genome Map for Accelerated Selective Breeding

The Department of Zoology at North Carolina State University (NCSU) announces the immediate availability of a position in Aquaculture Genomics suitable for a postdoctoral Research Associate or for a Doctoral student Research Assistant.

The incumbent will work with a team of scientists from the NCSU Departments of Zoology and Genetics and from the USDA/ARS National Center for Cool and Cold Water Aquaculture. The central objective of the research is to utilize existing reference families and ~500 new microsatellite DNA markers to create the first genetic linkage map for the striped bass and its relatives, which support the fourth largest form of fish farming in the United States. The new DNA markers will be evaluated for allelic variability in the parents of full- and half-sib reference families of striped bass and selected markers will be utilized to genotype the progeny. Markers associated with commercially important phenotypic traits (quantitative trait loci. QTL) will be identified

using performance data already collected from these animals and will be used to guide selective breeding of the striped bass and its hybrids to produce superior cultivars for farming.

The postdoctoral Research Associate would be hired for an initial term of two years at a salary commensurate with experience (range \$32,000- \$38,000) and would play a lead role in executing development of the genetic linkage map while contributing in a supervisory role to other ongoing projects in aquaculture genomics. The doctoral student Research Assistant would pursue the Ph.D. degree in Zoology, Biotechnology, Functional Genomics or Bioinformatics and be provided with an annual stipend of \$24,000, tuition, health insurance and research support for an initial term of 3 years.

Prior laboratory experience with microsatellite DNA marker development and genotyping is highly desirable. Review of applications for this position will begin in February 2008 and will continue until the position is filled. All applications should include a brief resume and publication list, a statement of research interests and goals, and the names of 3 references with contact information. Those applying for the doctoral student Research Assistantship should additionally provide copies of previous transcripts and GRE scores.

The selected candidate will be guided through the process of appointment as a postdoctoral Research Associate at NCSU or of admission to the NCSU Graduate School. Address applications or inquiries to Craig V. Sullivan, William Neal Reynolds Professor, Department of Zoology, 127 David Clark Laboratories, North Carolina State University, Box 7617, Raleigh, NC 27695 (Telephone: 919-515-7186; Email: craig_sullivan@ncsu.edu).

Fisheries and Fish Genetics in the News

Scientists restore sight to blind fish

CBS News: Monday, January 7, 2008 | 1:06 PM ET

Cross-breeding blind cave fish with those from separate populations of blind cave fish can partially restore their vision, overriding half a million years of evolutionary change, say U.S. scientists.

"These fish are descended from ancestors that have been isolated in the dark for nearly one million years and most likely haven't had the capacity for vision for at least half that time," New York University biology professor Richard Borowsky, the study's lead author, said in a release. "But by recombining the right genes through hybridization, you can partially restore vision. Not only are the structures of the eye restored to the point where they regain function, but all the connections to the brain for proper processing of information not used for that enormous length of time are restored."

The finding, which may have implications for understanding human eyes, was published in Monday's issue of the journal *Current Biology*. The study suggests that genetic engineering can override, at least in part, evolutionary change in just one generation. That's because mutations in different genes are responsible for the loss of sight in separate cavefish lineages.

"Restoration of the ability to see comes in a single generation because the populations residing in different caves are blind for different reasons — i.e., different sets of genes are non-functional in the different populations," said Borowsky.

Fake Grouper Turns Up Around Florida

AP: By BRENDAN FARRINGTON – Jan 3, 2008

Many restaurants in Florida have been caught passing off Asian catfish, tilapia or other cheaper species as grouper. Fake grouper is by far the biggest food-misrepresentation problem Florida inspectors handle, and it has turned up in all corners of the state — even at the Capitol cafeteria. "I'm not going to take that chance because my reputation is more important than keeping grouper on the menu," Gonzmart said. "It's not worth it to take a short cut. If grouper is \$20 a pound, so be it, but if we buy it for \$20 a pound and it's not grouper, that's a problem."

The Florida Department of Business & Professional Regulation, which regulates restaurants, found 139 cases of something other than grouper being sold as the fish between January 2006 through the end of last October — more than half of all food misrepresentation cases statewide during that time. The runners-up were 75 cases of fake crab and 34 cases of fake tuna.

"It's just a huge amount," said Department Secretary Holly Benson.

The problem has gone on for years but is receiving more attention lately. About a year ago, an owner of two Florida Panhandle seafood companies was sentenced to prison after federal authorities caught him selling more than a million pounds of Asian catfish labeled as grouper. In the Miami area, inspectors walked into a food processing plant and found workers taking 6,000 pounds of Vietnamese catfish that sells wholesale for about \$2.50 a pound and repackaging it as grouper, which goes for about \$6 wholesale.

State officials are becoming more aware of the problem. Benson's agency has doubled the fine for restaurants from \$250 to \$500 for a first offense. Agriculture Commissioner Charles Bronson has posted a Web page with full-color, high-resolution photos that can show people how to distinguish real grouper — lean, thick, firm flesh — from thinner, darker fillets of Asian catfish.

Florida Attorney General Bill McCollum hired a lab to perform DNA tests on grouper — or what was advertised as grouper — that investigators bought at 24 Tampa Bay-area restaurants. More than 17 of them were selling other types of fish, and McCollum reached settlements with all but one of them. Among the substitutes were emperor fish, hake, sutchi, bream and green weakfish.

The lab was not asked to test grouper from grocery stores. But the wife of a lab scientist brought home some fillets a supermarket was selling as grouper, and the scientist took the fish to the lab and tested it. "I don't know what it was. It wasn't grouper, that's all I do know," said scientist David Price.

Now Florida is going after bigger fish: distributors. The attorney general has subpoenaed records of several, including the biggest distributor, Sysco Food Services of West Coast Florida Inc. "We've been asked to participate with cleaning up the

industry and we have complied," said President Carl Cannova. "Quite frankly, we agree with the attorney general." Sysco began its own random testing program about a year and a half ago. Cannova said a few shipments received shortly after testing began turned out to be other fish, and they were immediately kicked back to the supplier. "Never, never, did we ever knowingly sell something as grouper that wasn't grouper," Cannova said.

Cod spawn ground closure revealed: The first voluntary closure of a cod spawning ground in the North Sea has been announced.

BBC: 22 January 2008

Rural Affairs Secretary Richard Lochhead said it provided "concrete evidence" of Scotland's commitment towards protecting cod stocks. He revealed the closure during a statement to MSPs on the outcome of the December Fisheries Council.

Mr Lochhead said: "We are working closely with industry and fishermen and we greatly value their co-operation." He explained: "I believe that a successful scheme in Scotland will lead to it being adopted more widely across Europe." And Mr Lochhead went on: "Turning to the year ahead, it's clear that 2008 will be a year of many challenges. Tough decisions lie ahead of us.

"Scotland today stands at the forefront of a new era of sustainable fisheries. It's clear to me that Scotland punches above its weight. And it's clear that we should take pride in the leadership shown by the Scottish fleet...I firmly believe that the Scottish industry is sailing into calmer waters after too many years of pain and instability."

Mysterious reptile deaths puzzle scientists

CNN: 22 January 2008

Conservationists and scientists scrambled Tuesday to determine what has killed at least 50 critically endangered crocodile-like reptiles in recent weeks in a river sanctuary in central India. Everything from parasites to pollution has been blamed for the deaths of the gharials -- massive reptiles that look like their crocodile relatives, but with long slender snouts.

The bodies, measuring between five and 10 feet long, have been found washed up on the banks of the Chambal River since early December, according to conservationists and officials. The precise number of gharials that have died remains unclear, with the Gharial Conservation Alliance saying 81 bodies have been found since early December, but Chief Wildlife Warden D.N.S Suman put the number of dead animals at 50.

Conservationists believe there are only about 1,500 gharials left in the wild, many of them in a sanctuary based along the Chambal, one of the few unpolluted Indian rivers. The Chambal contains the largest of three breeding populations in the world.

In early December, officials found the bodies of at least 21 gharials over three days. The bodies have continued washing ashore in the weeks since. The latest clue to

what's killing the rare reptiles is an unknown parasite that scientists found in the dead gharials' liver and kidneys, according to Dr. A.K. Sharma of the Indian Veterinary Research Institute. "We can say that liver and kidney of these gharials were badly damaged," said Sharma. "They were swollen and bigger than their usual size."

Others believe the gharials may have died after eating contaminated fish from the polluted Yamuna river, which joins the Chambal in the state of Uttar Pradesh. Pathological tests confirmed lead and cadmium in the bodies of the dead gharials, said Suman, the wildlife official.

"The Chambal river has clear water free from heavy metals. The only possibility seems that these gharials might have migrated from heavily polluted Yamuna river where they might have eaten fish," said Suman.

Advertise With Us!

Let the AFS Genetics Section newsletter editor know about your upcoming symposia, seminars, postdocs and internships by emailing the editor at jcarlin@gustavus.edu. This is a great resource for our members to reach out, so let us hear from you! Submissions are due **April 24**.

Sincerely,

Joel Carlin, Newsletter Editor

Calendar of Upcoming Events

February 2008

- Feb 19-21 — 23rd Northeast Pacific **Pink & Chum Salmon Workshop**. Silver Reef Conference Center and Casino, Bellingham, WA www.psc.org/pink&chumworkshop/.
- Feb 28 - Mar 2 — **AFS Southern Division** Annual Meeting and West Virginia Chapter of AFS. Oglebay Resort and Conference Center, Wheeling, WV. See www.sdafs.org/meetings/2008/default.htm.
- Feb 29 — Abstract submission deadline for **Fifth World Fisheries Congress 2008**. To be held Oct 20-24, Pacifico Yokohama, Japan. See www.5thwfc2008.com.

March

- Mar 1 — Early registration deadline for 11th International **Coral Reef Symposium**. To be held Jul 7-11, Fort Lauderdale, Florida. See www.nova.edu/ncri/11icrs/.
- Mar 3 — Abstract deadline for Annual Meeting of the Society for **Molecular Biology and Evolution**. To be held Jun 5-8 in Barcelona Spain. See smbe2008.com/index.htm.
- Mar 2-7 — **2008 Ocean Sciences Meeting**. To be held Mar 2-7 at the Orange County Convention Center, Orlando FL. See www.aslo.org/meetings/orlando2008/.
- Mar 5-8 — 26th Annual **Salmonid Restoration Conference**, Lodi, California. See www.calsalmon.org/conference/2008/conference2008.htm.

Mar 7-9 — **MEEC 2008**, the Midwest Ecology and Evolution Conference, Ohio University, Athens OH. See www.midwesteec.org/index.html.

Mar 14 — Abstract submission deadline for 11th International **Coral Reef Symposium**. To be held July 7-11 in Fort Lauderdale, Florida. See www.nova.edu/ncri/11icrs/.

Mar 15 — Deadline for electronic voting, 2008 AFS Genetics Section elections. Send your ballot to Jeff Hard (jeff.hard@noaa.gov).

Mar 15 — Sigma Xi **Grants-in-Aid of Research** application deadline for undergraduate and graduate students. See www.sigmaxi.org/programs/giar/index.shtml.

Mar 28— Abstract submission deadline for **Aquaculture Canada 2008**, the 25th Annual Meeting of the Aquaculture Association of Canada. To be held May 11-14 at the Delta Brunswick Hotel, Saint John, New Brunswick Canada. See www.aquacultureassociation.ca/ac08/welcome08.html.

April

Apr 1 — Abstract and early registration deadline for **Evolution 2008**. Joint meetings of the Society of Systematic Biology, Society for the Study of Evolution, and the American Society of Naturalists. To be held Jun 20-24 at the University of Minnesota, Minneapolis MN. See www.evolution2008.org/.

Apr 1 — Abstract submission deadline for **XXth International Congress of Zoology**. To be held Aug 26-29, Jussieu Grand Campus, Paris France. See icz2008.snv.jussieu.fr.

Apr 6-10 — 100th Annual Meeting of the **National Shellfisheries Association**. Providence, RI. See shellfish.org/node/55515.

Apr 10-13 — 37th Annual **Benthic Ecology Meeting**. Westin Hotel, Providence, RI. See www.benthicecology2008.uconn.edu/.

Apr 24 — News item submission deadline for AFS Genetics Newsletter. Contact the newsletter editor at jcarlin@gustavus.edu.

Apr 27-30 — 64th Annual **Northeast Fish and Wildlife Conference**. Marriott Seaview Resort, Galloway, NJ. See www.neafwa.org.

May - June

May 4-8 — **AFS Western Division** and the AFS Oregon Chapter Annual Meeting: Human Population Growth and Fisheries: The Western Challenge, Portland Oregon. See www.wdafs.org.

May 11-14 — **Aquaculture Canada 2008**, the 25th Annual Meeting of the Aquaculture Association of Canada. Delta Brunswick Hotel, Saint John, New Brunswick Canada. See www.aquacultureassociation.ca/ac08/welcome08.html.

May 24 — Application deadline for the AFS Genetics Wright Award. See this newsletter for details, or www.fisheries.org/units/genetics/awards/index.htm

Jun 5-8 — Annual Meeting of the Society for **Molecular Biology and Evolution**, Barcelona Spain. See smb2008.com/index.htm.

Jun 19-24 — **Evolution 2008**. Joint meetings of the Society of Systematic Biology, Society for the Study of Evolution, and the American Society of Naturalists. University of Minnesota, Minneapolis MN. See www.evolution2008.org/.

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