



STAGES

Newsletter of the
Early Life History Section
of the American Fisheries Society

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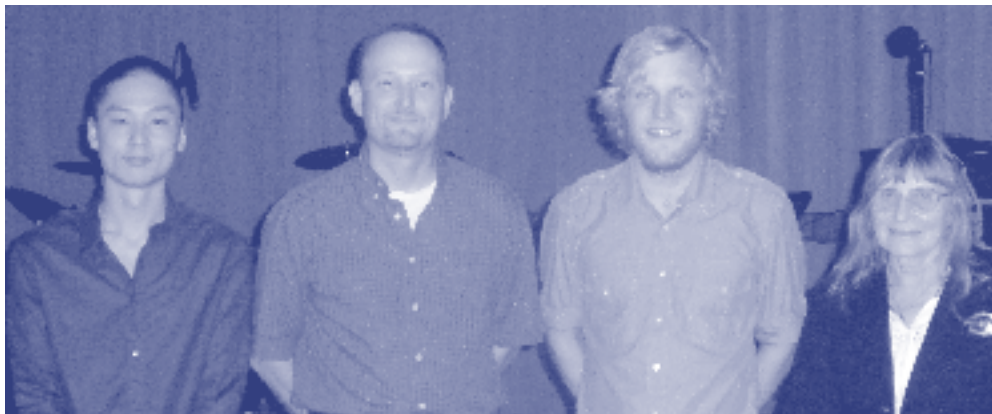
Lee A. Fuiman, Editor

October 2008

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Knut Vollset Wins Richardson Award



Honorees of the 2008 Sally L. Richardson Award competition. Left to right: Shinnosuke Nakayama and Ken Webb (honorable mention to both), Knut Vollset (winner), and Grace Klein-MacPhee (Chair).

The 22nd annual Sally L. Richardson Award for the best student paper presented at the 32nd annual Larval Fish Conference was given at Kiel, Germany, August 4-7, 2008. Twenty-seven student papers were presented and the competition was close.

The winner was Knut Vollset, University of Bergen, Department of Biology, Bergen, Norway for his presentation "*Thermoregulatory behavior in larval fish: An experimental approach*" I.A. Catalan, O Fiksen, A. Folkvord, co-authors.

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ELHS Back Then

5 years ago: Bibliographic committee updates Bob Hoyt's bibliography to include 15,596 entries through July 2002.

10 years ago: 22nd LFC held at University of Michigan (75 participants, 51 papers).

15 years ago: LFC met with American Society of Ichthyologists and Herpetologists at University of Texas. First time either society required electronic (diskette or email) submission of abstracts.

20 years ago: Sally L. Richardson award, originally an open competition, became a student award.

25 years ago: Dec 16, 1983 AFS Diary includes: "Among the particularly impressive newsletters recently received is the Early Life History Section..."

Deadline for material to be included in the next issue of **Stages**:

January 9, 2009

President's Message



Summer is gone and the fall spawning season is upon us (at least in the northern hemisphere). It is also an even year, which means that Chris Chambers and Denice Drass have reached the end of their terms as President and Secretary, and I and lone Hunt von Herbing have started ours. The rest of the ELHS team remains: Betsy Laban (Treasurer), Lee Fuiman (Editor), Jeff Buckel (Webmaster), Jeff Govoni (Historian), our regional representatives, and various committee chairs and members. To see a full list of the team please visit our website: www.elhs.cmast.ncsu.edu/elhs-ec.html.

First, a brief introduction. I am an oceanographer, working for NOAA National

Marine Fisheries Service. I oversee the hydrographic and plankton monitoring programs for the northeast U.S. continental shelf as part of a broader ecosystem monitoring effort. My research interests include the biological and physical processes that drive the dynamics of marine fishes, biological-physical coupling in the marine environment, and larval ecology. I have been involved with the Section since my first Larval Fish Conference in 1992, which coincidentally was held just down the road from where I work now (Narragansett, RI). I still remember fondly Joan Holt's kind face in a sea of nerves and anxiety during my first talk. My advisor, Bob Cowen, encouraged me to present a paper and it was a formative experience in my graduate training. Over the years, I have

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News from the Regions



North Central Region

Jim Garvey

From: Greg Wanner, USF WS, Great Plains FWMAO, Pierre, South Dakota

Early Life History Research on the Niobrara River, Nebraska

The Niobrara River is the only major tributary to the Missouri River from Fort Randall Dam to Gavins Point Dam, South Dakota and Nebraska. This reach of the Missouri River is a recovery priority management area for the endangered pallid sturgeon. There is also substantial evidence of the importance of the Niobrara River to native species in the Missouri River through long term fish monitoring (Shuman et al.), sauger (B. Graeb dissertation), macroinvertebrate (K. Berg thesis), and paddlefish (B. Pracheil dissertation) research. However, there is no information available of which fish are spawning and reproducing in the Niobrara River.

Larval fish were sampled 1,000 m upstream of the mouth of the Niobrara River and 63 km upstream, which is directly downstream of Spencer Dam. Larval nets were fished on the bottom of the river for a maximum of 10 minutes

(one sub-sample), depending on detrital loads. The larval net mouth opening was 50 cm high 100 cm wide. The larval net was 500 cm long with 500- μ m mesh. Each net was outfitted with a mechanical flow meter to determine the volume of water sampled. Larval fish samples were stored in a 10% buffered formalin solution containing Rose Bengal dye.

Samples were collected from April through August 2008 at least once every seven days at each site. At least eight subsamples were collected in the morning and in the late afternoon at each site. Over half of the samples have been picked thus far, but have not been identified yet. Larval fish began appearing in samples during the first week of May and ceased the third week of August. The Niobrara River water temperature tracks closely with ambient air temperatures. What is amazing is that in late July, the maximum daily water temps were consistently over 34 degrees Celsius and fish were still spawning!

From: USGS Great Lakes Science Center, Ann Arbor, Michigan

ELH Section member Dr. Ed Roseman and colleagues at the USGS Great Lakes Science Center are conducting studies of fish early life history on the Great Lakes and connecting waters. In 2005, Ed and colleagues Dr. Bruce

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Northeast Region

Mark Wuenschel

From: University of Maryland, Chesapeake Biological Laboratory

Adam Peer is a PhD student at the University of Maryland Center for Environmental Science Chesapeake Biological Laboratory (CBL) working with Tom Miller. His PhD dissertation is designed to investigate the importance of maternal characteristics on recruitment, sustainability and conservation of fish populations with particular emphasis on Atlantic coast striped bass. At the heart of this research is the idea that individual spawning striped bass contribute differentially to the next generation, and that identifying and promoting the conservation of these valuable females will enhance the conservation of this iconic species. A rigorous exploration of this idea is being tested using traditional approaches to assess female demographics and reproductive potential in combination with novel molecular techniques to assess the influence of female condition and other maternal characteristics on reproductive success under natural conditions. Genetic markers will serve

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election pending

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election pending

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UPDATE OUR
RECORDS...**

*Verify your email and
postal address with our
Secretary.*

Northeast Region...cont'd from p. 2

a key role by matching offspring with their mother's genotype and phenotype and to track offspring through time to identify evidence for selection in the field and determine the role of maternal characteristics on recruitment.

This spring Adam conducted a laboratory experiment to examine the role of maternal condition on striped bass larval growth and survival at varying larval prey densities. To test for stock-specific differences in maternal effects, 9 Chesapeake Bay and 9 Roanoke River females were spawned. Results indicated that integrative indices such as female relative liver energy (RLE; $\text{kJ}\cdot\text{g}^{-1}$) and hepatosomatic index (HSI) were inversely (exponential) related to larval mortality through 12 dph, and were more reliable predictors of mortality than simple measures of female length, weight, or age, which showed no significant relationship with mortality. These results were consistent for both the Chesapeake Bay and Roanoke River genetic lines, and also indicated that there were no stock-specific differences in the relationship between maternal condition and larval mortality. Maternal condition (i.e., RLE, HSI) showed similar importance in predicting larval growth through 12 dph, as significant positive relationships were observed for both the Chesapeake Bay and Roanoke River lines. Female weight, however, also was an important predictor of growth for Chesapeake Bay larvae during the first 5 days. Whether these trends persist up to 40 dph is currently under investigation, and results can be expected in the coming months.

When analyses are complete, results from this experiment will be used to parameterize an individual-based model designed to predict the consequences of shifting maternal demographics on striped bass recruitment. At present, these experimental results show that in striped bass, simple measures of length, weight, and age may be insufficient to fully understand maternal effects on reproduction; however, maternal condition is a very good predictor of larval mortality and growth and thus may influence reproductive potential and recruitment. §



Western Region

Dan Margulies

From: David Cowley, Fish, Wildlife & Conservation Ecology, New Mexico State University

Janelle Alleman, graduate student at New Mexico State University, presented her thesis research results to the Larval Fish Conference this past August. The endangered Rio Grande silvery minnow, and a host of kin with similar reproductive modes, some threatened or endangered, produce non-adhesive semi-buoyant eggs, which under the right circumstances, can be transported significant distances downstream or into floodplain habitats that can become isolated from the river channel when discharge decreases. Water management agencies can use information about fish egg properties to simulate their dispersal and retention in habitats in response to river flow management scenarios, much the same way that marine fish biologists simulate the dispersal of fish eggs and larvae in the oceans.

The buoyancy of non-adhesive fish eggs is interesting because our studies show it can respond to environmental changes in osmotic pressures associated with changes in salinity of the water surrounding the egg. Janelle's laboratory studies, sponsored by the US Bureau of Reclamation and initiated in collaboration with Michael Porter, currently with the US Army Corp of Engineers, showed that different cyprinid minnow species have different characteristic values of egg buoyancy (specific gravity) at a specific salinity, and that eggs of all species examined responded similarly to increases in salinity, maintaining their interspecific differences. What does this mean for species like the silvery minnow, whose spawning seems cued by flood stage river discharge? Some of Janelle's early studies showed reduced fitness of silvery minnow eggs at salinities greater than about 4 parts per thousand (ppt), so the habitat where the eggs come to rest can affect their survival.

A survey of floodplain habitats during high snow-melt river discharge in 2005 showed significant variation in temperature, dissolved oxygen, and salinity in different locations of the Rio Grande floodplain during the spawning period of the Rio Grande silvery minnow. Most floodplain locations had low dissolved oxygen ($< 1 \text{ mg/L}$) or salinity at levels lethal to eggs of the endangered species ($> 4 \text{ ppt}$) or temperatures above 25 C . Clearly, river discharge levels and freshness of water in the flow affect fish egg properties such as their ability to float in sediment-laden water or to be transported over pools of denser saline water in the floodplain. We predict that the species differences in egg buoyancy that Janelle found will be explained at least in part by genetic protein differences in the egg membrane, making species such as the plains minnow or the Arkansas River shiner relatively more successful in reproducing in waters of elevated salinity such as occurs in the Pecos and the Canadian rivers of New Mexico and Texas (U.S.A.). Surely there are some interesting investigations waiting on the fish egg membrane and ways it might evolve in response to changes in environmental conditions.

Our field collections last year on the Pecos River of New Mexico showed that gravid minnows of four species (not previously spawned in captivity) could be collected in late summer and induced to spawn in the laboratory with injection of carp pituitary extract. Along with our collections of gravid fish, we observed the presence of many larval fishes in isolated floodplain pools of the Pecos River following a very modest increase in river stage height (0.2 ft, about 6 cm) two days prior to our collections in late July. Subsequent collections in August showed the disappearance of some and decrease in size of other floodplain pools along the river. Some pools diminished to small size had only one surviving young-of-year fish two weeks after the "flood" event. Could river flows be managed to improve survival of larval fish without harming those to whom the water belongs?

The Kiel conference, my first Larval Fish Conference, was an exciting venue of discovery. It opened my

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Ed Roseman (2007) during nighttime larval fish collections aboard the R/V Sturgeon in northern Lake Huron.

North Central Region...cont'd from p. 2

Manny and Greg Kennedy from USGS, and Jim Boase from USFWS discovered viable lake whitefish eggs in the Detroit River in 2005-2007, a population that was previously thought extirpated. They continue their work in the Detroit River, collaborating with Dr. Scott McNaught and graduate student Erik McDonald from Central Michigan University to measure larval fish ecology in the river, with an emphasis on nursery habitat function as related to lake whitefish, walleye, deepwater sculpin, and yellow perch. Dr. Manny and colleagues from USGS and USFWS are assessing the use of artificial and natural substrates by spawning fish in the Detroit River by collecting eggs during spring and fall spawning periods. So far, they have documented successful spawning by 16 species, including lake sturgeon, walleye, lake whitefish, yellow perch, and several species of Catostomidae. Results of these projects can be found in more detail in the following publications:

Manny, B.A., G.W. Kennedy, J.D. Allen, and J.R.P. French, III. 2007. First evidence of egg deposition by walleye, (*Sander vitreus*), in the Detroit River. *Journal of Great Lakes Research* 33: 512-516.

Roseman, E.F., G.W. Kennedy, J. Boase, B.A. Manny, T.N. Todd, and W. Stott. 2007. Evidence of lake whitefish spawning in the Detroit River: Implications for habitat and

population recovery. *Journal of Great Lakes Research* 33:397-406.

Ed is also leading a project that examines larval fish ecology in northern Lake Huron with an emphasis on cisco and rainbow smelt. Tim O'Brien, a fisheries technician at the GLSC and master's candidate at Michigan State University is working with Ed and Dr. Bill Taylor from MSU to assess the importance of the larval stage to rainbow smelt recruitment in northern Lake Huron. Collections are being made in nearshore areas adjacent to tributaries

used for spawning, as well as offshore sites using the GLSC's large research vessels. Samples and data from collections made in 2007 and 2008 will also be used to assess habitat use by other larval fishes, exploring the spatial and temporal distributions of larvae in the vicinity of DeTour and Hammond Bay, MI and how variability in physical and biological habitat factors influence



Erik McDonald sets a light trap for larvae in an embayment of the Detroit River.

growth and survival of rainbow smelt and cisco larvae.

More information on these projects and others can be found on the USGS Great Lakes Science Center's web page: www.glsc.usgs.gov.

Erik McDonald, and Scott McNaught just completed a study of larval fishes in the Detroit River. They worked with

Ed Roseman at the USGS - Great Lakes Science Center. They monitored the spatial distribution of larval fish along 4 transects in the Detroit River between April and July 2007. They also documented larval fish use of two potential nursery areas. One nursery area (Hole in the Wall) had rocky substrate and moderate macrophyte densities. The other nursery area (Fighting Island) had silty substrate and dense macrophyte patches. Exotic round gobies dominated Hole in the Wall, whereas yellow perch and bluegill larvae dominated Fighting Island. Finally, they compared growth and diet of gobies, perch, and bluegill in nursery areas and the main channel. They found few late stage larvae in the main channel, but many late stage larvae in nursery areas. Although zooplankton abundance and composition was statistically similar between nursery and main channel sites, larval diet differed between sites. Larvae in nursery areas selected copepods, whereas larvae in the main channel selected cladocerans. They are currently putting together a manuscript for this study.

From: Jeffrey Miner, Aquatic Ecology & Fisheries Laboratory, Bowling Green State University, Bowling Green, Ohio

ELH on the Pymatuning Reservoir

Jeffrey G. Miner and colleagues have been working on a project with the Ohio DNR and Pennsylvania Fish and Boat Commission to try to understand why they have been having consistent recruitment failure from their stocking of larval walleye into 8,500-ha Pymatuning Reservoir since 2001. They presented a paper at the AFS meeting in Ottawa suggesting that environmental conditions may have been consistently poor at stocking in 2001-2003, and then the community shifted, so that alewives are now abundant (along with other species). This increase in larval walleye predators may be resulting in an alternative stable state for this system. The agencies are trying to overcome this recruitment bottleneck by stocking early juvenile walleye (18-25 mm TL). If there is sufficient recruitment then after a few years, when the abundance of

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Conference Flag for a Year

A New Tradition . . . for a Good Cause

A new Larval Fish Conference (LFC) / Early Life History Section (ELHS) tradition was begun at this summer's LFC in Kiel when opportunity met need. The opportunity arose due to the grand success of hosts Catriona Clemmesen and the LFC local



Elizabeth North, Mark Dickey-Collas, and Cynthia Jones enjoy the honor of establishing a new ELHS tradition.

committee in securing an extraordinarily high level of conference sponsorship. This success allowed our hosts to provide conference attendees with exceptional conference amenities: socials, fantastic seafood, a very creative multi-use tote bag, conference posters – even in the washrooms! – and a conference flag among other niceties. The conference flag is a beautiful 4 x 1 meter nylon flag with the LFC2008 logo of red, black, and white herring larvae (special thanks to Evelyn Renz-Kiefel for her beautiful design). Catriona had offered the flag for our annual raffle but she was convinced that this gem deserved special status.

This brings us to an ongoing need of our Section. We have been searching for mechanisms to fund the J.H.S. Blaxter Award for the Best Student Poster at our LFCs. To date, this annual award of \$300 has been funded through a combination of contributions from the Section, surpluses from some LFCs, and personal donations. All are much appreciated, but we need a secure, ongoing revenue source – like our annual raffle in support of the Sally Richardson Award for the Best Student Paper at our LFCs. This need was the origin of our Section's LFC flag auction.

Here are nascent rules for the flag auction and flag ownership, and a challenge to the annual keepers of the flag.

committee in securing an extraordinarily high level of conference sponsorship. This success allowed our hosts to provide conference attendees with exceptional conference amenities: socials, fantastic seafood, a very creative multi-use tote bag, conference posters – even in the washrooms! – and a conference flag among

Section Supports Student Travel

Congratulations to the four recipients of the ELHS Student Travel Grants. The Section is proud to have made it possible for the following students to attend the Larval Fish Conference in Kiel, Germany.

Elvira Morote, Institut de Ciencies del Mar, Barcelona, Spain.

Shinnosuke Nakayama, University of Texas Marine Science Institute, Port Aransas, Texas, USA.

Meri Härmä, Finnish Game and Fisheries Research Institute, Helsinki, Finland.

Laure Carassou, IRD Nouméa, Nouméa, New Caledonia.

Our thanks to the Student Travel Grants Committee, chaired by Fred Scharf, for performing this important Section activity. §

Capital Campaign Begins

The ELHS is conducting a capital campaign to establish an endowment for the J.H.S. Blaxter Award for best student poster. If you are interested in making a contribution, please see the Award website (www.elhs.cmast.ncsu.edu/award_Blaxter.html). §

Jon Hare, Chair – J.H.S. Blaxter Award Committee

AUCTION. The flag will be auctioned each year at our LFCs. Funds will be used solely for the J.H.S. Blaxter Award until we reach our target endowment (see ELHS website Blaxter Award endowment tracker at: www.elhs.cmast.ncsu.edu/award_Blaxter.html). The ELHS Executive Committee is deliberating on the magnitude of annual match from the ELHS budget for the flag auction.

OWNERSHIP. Flag ownership will be for one year. Owners will ensure that the flag is returned to the subsequent LFC for re-auction.

ANNUAL CHALLENGE. The first challenge is to take the flag home from the LFC. To do so, you will need to outbid your colleagues who will themselves be highly motivated to take the flag. Remember, this is all for a good cause! The second challenge is to photograph the flag in the most auspicious locales. A new flag photo will appear in each issue of STAGES, and all photos will be archived on our Section website (e.g., if I had successfully won this year's bid for the LFC flag you would have seen in this issue of STAGES a photo of it hanging from the front row upper deck seating at Yankee Stadium... darn!).

So here we go. Our first LFC flag auction occurred at the Conference Banquet in Kiel. Jon Hare served as auctioneer (a hidden talent I might add). We had several warm-up items to be auctioned but the big ticket item was our flag. Banquet attendees – as individuals or groups – rapidly bid the flag

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Recent Events

Michael Donner Wins Blaxter Award

The J.H.S. Blaxter Award for the best student poster at the 32nd Larval Fish Conference was given at Kiel, Germany, August 7, 2008. Nine student posters competed for the award. The judges were impressed with the quality of all of the posters and the decision of the best poster was difficult.

The winner was Michael Donner for his presentation: *Diel vertical migration of young-of-the-year burbot as an adaptation to maximize growth in the oligotrophic, prealpine Lake Constance*, authored by Michael and Reiner Eckmann. Michael is a Ph.D. student at the Limnological Institute at the University of Konstanz in Konstanz, Germany.

Honorable mention went to Helena Hauss for her presentation: *Larval herring growth vs. consumption: Testing IBM parameterisations at the individual level*, authored by Helena, Laura Würzberg, and Myron Peck. Helena is a Ph.D. student at the Leibniz Institute of Marine Sciences in Kiel Germany.

Congratulations to Michael and Helena! §
— Jon Hare, Chair, J.H.S. Blaxter Award Committee



Michael Donner (left), winner of the 2008 J.H.S. Blaxter Award for best student poster and Helena Hauss (right), who received honorable mention for the same award. Jon Hare chaired the award committee and presented the award in Kiel.

Richardson Award...cont'd from p. 1

Two presentations received honorable mention: Shinnosuke Nakayama, University of Texas Marine Science Institute, for his presentation "The downside of batch spawning: Interference competition for food in young red drum" L.A. Fuiman, co-author, and Kenneth Webb, University of Texas Marine Science Institute, for his presentation "Postprandial colecystokinin and trypsin response of larval red drum (*Sciaenops ocellatus*)" G.J. Holt, co-author.

Congratulations to all for an excellent job, and a hearty thanks to all the students who presented talks and the people who judged them. Special thanks go to Elaine Calderone of NOAA NMFS Laboratory Narragansett who was the co-chair for the awards. §

— Grace Klein-MacPhee, Chair
Sally Richardson Award Committee



Texans gather to drink beer in Germany. Lee Fuiman, Shin Nakayama, Scott Applebaum, Ken Webb, Marta Moyano (honorary Texan), Christoph Petereit (German interloper) and Alfredo Ojanguren relax in Keil.

Opportunities

Faculty Position in Fish/ Fisheries Biology

As part of a continuing expansion, The **University of Texas at Austin's** Marine Science Institute and Department of Marine Science invite applications for a faculty position (Assistant or Associate Professor) in **Fish/Fisheries Biology**, in areas that complement our existing strengths in **larval fish studies, basic mariculture, and physiology**. We seek candidates with a Ph.D. and demonstrated expertise and innovative research who would benefit from the Institute's excellent shoreside facilities for experimental

work and proximity to a variety of unique estuarine and coastal habitats (including the 185,000-acre Mission-Aransas National Estuarine Research Reserve). The positions include research (75% time), teaching (25%), and 9 months of state-funded salary support. Successful applicants will have freedom to follow their research interests and opportunities to collaborate with a vibrant group of faculty spanning a variety of research areas in one of the largest research universities in the United States. A background check will be conducted on the applicant selected. The University of Texas at Austin is an Affirmative Action/Equal Opportunity Employer. Details of the positions, the Institute, and application procedures are available at www.utmsi.utexas.edu/institute/recruiting. §

Images from the 32nd Annual Larval Fish Conference Christian-Albrechts Universität, Kiel, Germany — August 2008



Attendees gather for a group photo.



After a lovely cruise, conference attendees enjoy a nicely catered barbecue and lots of Gemütlichkeit.



These fellows seem happy. Perhaps its because the drinks are free.



Germans gather to drink beer in Germany...what a surprise! Christoph Petereit, Niko Sähn, Catriona Clemmesen, Rudi Voss, and Holger Haslob enjoy a brew.



Conference organizers (left to right) Evelyn Renz-Kiefel, Jörn Schmidt, Catriona Clemmesen, Susanne Homp, and Michael Bartz) receive accolades from a very appreciative audience at the banquet.

People

Chris Powell Retires

J. Christopher Powell, better known as Chris, retired from the Rhode Island Department of Environmental Management, Division of Fish and Wildlife, Marine Fisheries in July 2008 after a distinguished 23-year career. He has been a member of the AFS since 1976.

Chris graduated from George Mason University with a BS in 1973 and MS in 1977 where he studied with Dr Donald Kelso. He attended A US Navy Clinical Laboratory Technician School and served as a Clinical Laboratory Technician in charge of a clinical laboratory while in the U.S. Navy.

He began his career as a Museum Technician at the Division of Fishes U.S. Museum of Natural History, Smithsonian Institute, Washington in 1978 as an assistant to Dr. Victor Springer in his research of systematics and the zoogeographic distribution of fish families of the world. This led to his life-long interest in systematics. From 1978-1980 he worked at the NMFS Narragansett Laboratory conducting research in larval fish taxonomy and ecology, participating in the MARMAP ichthyoplankton cruises. From 1981-1984 he worked at the Graduate School of Oceanography of the University of Rhode Island conducting research on the influence of the Hudson Raritan Estuary water on the early development of finfish, and working in the MERL mesocosm systems looking at the effect of eutrophic water on the early life history of two species of fish larvae

He found his final home at the Rhode Island Division of Fish and Wildlife when he was hired to conduct a winter flounder tagging program and conduct the Narragansett Bay juvenile finfish seine survey. He trained many summer interns and field biologists, operated the research vessel and the scientific equipment, underwater camera and video equipment. He also became the habitat coordinator serving on numerous committees and identifying and mapping estuarine habitats important to fish species of Rhode Island. Chris was responsible for reviewing and providing written

comments on development and aquaculture, environmental impact statements, dredging and dredge spoil disposal projects, and others, which might potentially impact fisheries or habitat. He collaborated with researchers from the University of Rhode Island, National Marine Fisheries Service, and U.S. Fish and Wildlife Service and others.

Chris collaborated on a number of peer-reviewed publications especially with the late marine ecologist Dr. Lesa Meng. He also gave a number of papers and posters at National meetings.

He was a member of AFS, the Southern New England Chapter of AFS, where he served on the Board of Directors was the Chapter President. and received the Irwin Alperin Outstanding Member Award; and the Early Life History Section where he served on the planning committee for the Larval Fish Conferences held at the University of Rhode Island and at Lake Placid, New York.

He was also a member of the Estuarine Research Federation, Northeast Estuarine Research Society, and the American Institute of Fishery Research Biologists, where he became a Fellow in 2008.

He has served on the committee of the Flatfish Biology Conference held biannually in Milford Connecticut since its inception as the Winter Flounder Workshop. He has served on the Board of Directors for Save the Bay Inc., Providence RI, the Rhode Island Natural History Survey, and the Rose Island Foundation.

Chris will spend part of his retirement teaching part-time at Roger Williams University.

I have worked with Chris for many years and will miss his great enthusiasm when he collected an unusual fish and brought it back for identification, for his stalwart support of my ichthyoplankton surveys, and for many exciting boat adventures. §

— Grace Klein-MacPhee

Publications

Early Larval Fish Conference Proceedings Available Online

The ELHS-funded project to digitize the proceedings of the first five annual Larval Fish Conferences has been completed. Lee Fuiman arranged for The University of Texas Libraries to create searchable PDF files of the five conference proceedings from his personal copies of those documents. The University of Texas Libraries has now made those documents available to everyone through its Digital Repository at repositories.lib.utexas.edu/handle/2152/6.

Bookmark this site now so that you can access the early conference proceedings when you need them. The files are also available on the ELHS website: www.elhs.cmast.ncsu.edu. §

Publications Available Online

Publications of some of the legendary larval fish biologists (Alhstrom, Moser, Lasker, Hunter, Smith, Watson, Lo) are available on the NMFS LaJolla website swfsc.noaa.gov/publications/swcpub/qrypublications.asp. You can search by subject, author, source, and date.

The Ahlstrom Symposium volume (Moser et al., 1984), is now available online at www.biodiversitylibrary.org/bibliography/4434.

Allan Connell's South African Fish Eggs and Larvae site is now at www.fisheggssandlarvae.com. §

— Jeff Leis



Available now: *Fish Larval Physiology*

By Roderick Nigel Finn & B.G. Kapoor

Published by Science Publishers. 2008.

This book specifically addresses the larval stages of fish, and is intended as a resource for students and researchers interested in

physiology, developmental biology, fisheries science and aquaculture. It is the first basic physiological textbook to deal with the earliest stages of this important and diverse group of vertebrates. The text provides detailed mechanistic information on emerging genomic models, but is also broad

with physiological processes described for more than 270 species from the cold dark depths of the oceans to the highly caustic environments of alkaline lakes. It is written by 38 international experts in their fields, and is divided into 20 chapters within 7 sections. The book aims at providing a single-volume treatise that explains how fish larvae develop and differentiate, how they regulate salt, water and acid-base balance, how they transport and exchange gases, acquire and utilise energy, how they sense their environment, and move in their aquatic medium, how they control and defend themselves, and finally how they grow up.

The book contains 7 parts: Ontogeny; Respiration & Homeostasis; Nutrition & Energy; Sensory Physiology; Movement; Control and Defense; Functional Changes in Form. Each of these contains several chapters. §



Available now: *Early Stages of Fishes in the Western North Atlantic Ocean: Davis Strait, Southern Greenland and Flemish Cap to Cape Hatteras*

By Michael P. Fahay

Volume 1: Acipenseriformes through Syngnathiformes, pp. 1 - 931.

Volume 2: Scorpaeniformes through Tetraodontiformes, pp.932 - 1696.

Published by North Atlantic Fisheries Organization, Halifax. 2007.

This comprehensive scientific publication is the only up-to-date textbook providing detailed descriptions and accurate drawings of the early life-history stages of the fishes from the Northwest Atlantic Ocean north of 35°N and west of 40°W.

The region covers the world's most famous fishing grounds and includes the Davis Strait, southern Greenland, Flemish Cap, Georges Bank, northern Sargasso Sea and Middle Atlantic Bight to Cape Hatteras.

Includes: a checklist of 1075 fish species occurring in the study area; descriptions of egg, larval and juvenile stages of 760 species from 196 families; synopses of habitats from estuarine to abyssal; updated ranges and many species' range extensions, often based on early stages; identification facilitated by numerous descriptive tables; morphological characters of developmental stages summarized and tabulated for 28 orders of teleosts, 15 suborders of Perciformes, 26 families of Percoidei and several other major groups; appendices with tabulations of meristic characters, museum reference material sources and collection data for original material; and some 3000 drawings of eggs, larvae, and juveniles, and 2000 references.

Available at www.nafo.int or email bcrawford@nafo.int. §

Other Recent Publications of Interest

Early Development of Four Cyprinids Native to the Yangtze River, China. Edited by D.C. Chapman. *U.S. Geological Survey Data Series* 239. 2006. accessible online at pubs.usgs.gov/ds/2006/239

Recent Advances in the Study of Fish Eggs and Larvae. Edited by M. Pilar Olivar and J. Jeffrey Govoni. Published in *Scientia Marina*, Volume 70S2 Supplement 2. ISSN: 0214-8358. 2006.

Eggs and Larvae of North Sea Fishes. P. Munk and Jørgen G. Nielsen. Published by Biofolia Press. ISBN 0849319161. 2005.

Early Stages of Atlantic Fishes: An Identification Guide for the Western Central North Atlantic. Edited by W.J. Richards. Published by CRC Press. ISBN 0849319161. 2005.

Developmental Biology of Teleost Fishes. Y.W. Kunz. Published by Springer Press. ISBN 1-4020-2996-9. 2004.

Early Life History of Fishes in the San Francisco Estuary and Watershed. Edited by F. Feyrer, L.R. Brown, R.L. Brown, and J.J. Orsi. Published by the American Fisheries Society. ISBN 1-888569-59-X. 2004.

Freshwater Fishes of the Northeastern United States - A Field Guide. R.G. Werner. Published by Syracuse University Press. ISBN 0815630204. 2004.

The Development of Form and Function in Fishes and the Question of Larval Adaptation. Edited by John Jeffrey Govoni. Published by the American Fisheries Society. ISBN 1-888569-58-1. 2004.

The Larvae of Indo-Pacific Coastal Fishes: An Identification Guide to Marine Fish Larvae. (2nd edition). J.M. Leis and B.M. Carson-Ewart. Published by Brill Academic Publishers. ISBN 90-04-13650-9. 2004.

The Big Fish Bang. Proceedings of the 26th Annual Larval Fish Conference. Edited by Howard I. Browman and Anne Berit Skiftesvik. Published by the Institute of Marine Research, Bergen, Norway. ISBN 82-7461-059-8. 2004.

Reproductive Biology and Early Life History of Fishes in the Ohio River Drainage: Ictaluridae - Catfish and Madtoms, Volume III. T.P. Simon and R. Wallus. Published by CRC Press. ISBN 0849319196. 2003.

Fishery Science: The Unique Contributions of Early Life Stages. Edited by Lee A. Fuiman and Robert G. Werner. Published by Blackwell Publishing. ISBN 0-632-05661-4. 2002. §

North Central Region...cont'd from p. 4
walleye increases, they would predict that the walleye will suppress alewives sufficiently to allow the return to larval walleye stocking.

From: Southern Illinois University – Carbondale

A multi-tiered study examining the early life history of *Scaphirhynchus* sturgeon is being undertaken at Southern Illinois University. Specifically, Dawn Sechler is quantifying diets of young-of-year (YOY) sturgeon (total length (TL) range: 9-95 mm) to determine whether foraging behavior changes as a function of season, total

Western Region...cont'd from p. 3

eyes to the similarity in brackishness between portions of the Baltic Sea and the desert waters of my home state. I was quite amazed to hear about the invasion of roach into an arm of the Baltic, and that the species limit in salinity was about the same as what we saw for the silvery minnow in the Rio Grande, about 4 ppt. Incidentally, that very nice presentation by Meri Hämmä was my personal favorite student paper! The Kiel conference also brought me

Conference flag...cont'd from p. 5

up to its final price of 210 Euros! (To enhance the revenue pool, the ELHS agreed to match the flag auction total this year). This year's keepers of the flag are Elizabeth North, Mark Dickey-Collas, and Cynthia Jones (rumor has

length, invertebrate availability, and discharge. Quinton Phelps is currently investigating YOY *Scaphirhynchus* sturgeon habitat use and early life dynamics in the Middle Mississippi River. He is also actively using pectoral fin ray microchemistry to analyze origin of YOY *Scaphirhynchus* sturgeon. Ryan Boley is investigating the frequencies of larval pallid sturgeon to larval shovelnose sturgeon, and possibly hybrids in the Middle Mississippi and Missouri Rivers. Ultimately, these early life history studies will provide new information to assist scientists and managers in sustaining the *Scaphirhynchus* sturgeon populations of the Mississippi and Missouri Rivers. §

into contact with Darrel Snyder, whose work on larval freshwater fishes I have appreciated for many years.

With the momentum gained from the Kiel conference, I'm looking forward to the Portland conference next year and a future conference in Santa Fe. Kudos to Catriona Clemmesen, a fine job indeed organizing the Kiel conference; Catriona, IFM-GEOMAR, Christian-Albrechts University, and the Schleswig-Holstein citizens I met were splendid hosts. §

it that there was also an anonymous contributor).

Good luck Elizabeth, Mark, and Cynthia! Surprise us! Shock us! But by all means, bring the flag to Portland. §

— Chris Chambers, Past President

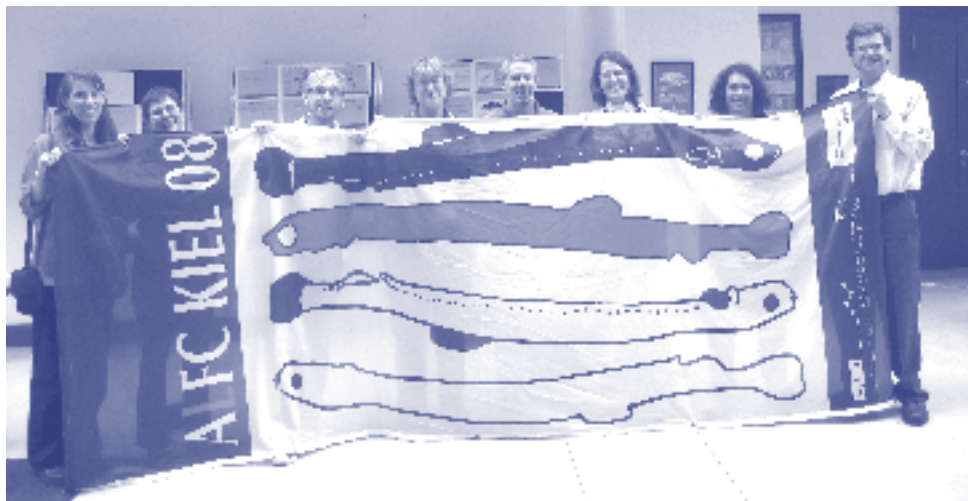
President's message...cont'd from p. 1

benefited tremendously through my involvement with the Section and I am honored and privileged to be addressing you as President.

Second, I would like to thank Chris Chambers and Denice Drass for their service to the Section. As President, Chris saw us through some rough years, with re-arrangements in the LFC schedule and decreases in membership, but the Section is stronger for his leadership. In Chris' first message as President, which I shamelessly went to for ideas regarding this, my first message, he hoped that he would leave the Section better off than when he started. Chris, your hopes were achieved and speaking for the Section, we thank you for your efforts on our behalf. Denice also made significant contributions sorting out the problems with our membership list and working with our parent Society to improve communication of membership status. Denice, thank you for your care and dedication.

The ELHS is based on volunteerism – the willingness to work on the behalf of others without financial gain. But with volunteerism there is gain – the personal satisfaction that you contributed to something that you believe in. For the ELHS that means exchanging ideas, educating others about the importance of early life stages, supporting research and teaching collections, and working on critical gaps in our knowledge (I didn't make these up; they are paraphrased from our bylaws - www.elhs.cmast.ncsu.edu/bylaws.html). If you are interested in becoming more involved, consider running for office (contact Chris Chambers chris.chambers@noaa.gov), submit a description of your research to your Regional Representative (listed on page 12 of this newsletter), or volunteer at the next LFC as a moderator (contact Doug Markle douglas.markle@oregonstate.edu). If you want to contribute in some other way, contact me and we can discuss a myriad of other possibilities. The important point is for you to consider becoming more involved; both you and the Section will benefit.

The ultimate volunteer opportunity is hosting the Larval Fish Conference and



LFC flag makes its traveling debut at the Linking Herring Symposium held in Galway, Ireland, 26-29 August 2008. See other places the flag has appeared at northweb.hpl.umces.edu/Photos/2008/TheFlag-web.

President's message...cont'd from p. 10

the team that put on the 32nd LFC in Kiel did an excellent job. Congratulations and heartfelt thanks to Catriona Clemmesen, the Scientific Steering Committee, the sponsors, the team of local organizers, and the meeting and University staff. My German is rusty, but *wunderbar* comes to mind. The venue at Christian-Albrechts Universität was top-notch. The planning was perfect. The meeting was run with precision and efficiency. There were talks and posters, theme sessions, and keynotes. Meeting participants came from around the world, and I saw friends, met new people, and learned and thought about a lot. I also managed to enjoy a few pilsners and some *wiener schnitzel*.

For me, the tone of the meeting was set with the Opening Remarks. Often (speaking for myself only), introductory remarks are a forgettable affair, but not at Kiel, not at the 32nd LFC. Professor Gerhard Fouquet, the President of Christian-Albrechts Universität, opened with a discussion of medieval texts relating to nature and in particular fishes. Karin Wiedemann, State Secretary for Science, Economics and Transport, followed with a big-picture view of the need for marine science in the context of the economy of Schleswig-Holstein, the state of which Kiel is part. Then Professor Peter Herzig, IFM-GEOMAR-Director and a marine geologist, spoke about the necessity for applied science, specifically the contribution of marine science and early life stage studies to issues of deep-sea mining, energy, and aquaculture. These presenters

conveyed the importance of early life stage information in the context of their own interests, which for me was energizing - a medieval scholar, a high-level government official, and a marine geologist described the importance of early life stages. The time and care that these presenters put into their opening remarks was obvious, and this time and care was a trademark for the entire meeting. Please, if you haven't already, take a minute and email your thanks to Catriona and her team for a *wunderbar* LFC (cclemmesen@ifm-geomar.de).

There are many other aspects of the 32nd LFC that I could reminisce, but I will end with just one. In Kiel we started a new tradition, which we hope will survive the year and make it to Portland - if it doesn't then I won't be able to call it a tradition. In addition to hosting a scientific meeting with well planned social events, the Kiel team mixed in art. The combination of science, art, and social interactions was even touched upon by the State Secretary for Science, Economics and Transport in her opening remarks. At the centerpiece of the artistic side of the 32nd LFC were eight herring larvae arranged and colored in a technical yet post-modernistic pop-art design. This emblem appeared on the program, on the t-shirts, on the schedules, and also on a large flag that flew outside the conference hall. Chris Chambers thought that we could use the flag to raise money for the J.H.S Blaxter Award for the Best Student Poster. After a few social events, the scheme came together - the flag would be

auctioned to the highest bidder. Please see the story on page 5 of this issue of *STAGES* by Chris Chambers that sets the ground rules for the LFC Flag. The auction and the raffle go to a good cause: our student awards, which are a way for the Section to encourage student participation and to recognize the hard work of students that present their research at the LFC. For more information about our Section's student awards go to www.elhs.cmast.ncsu.edu/award.html and www.elhs.cmast.ncsu.edu/award_Blaxter.html.

Well, we have come to the end of this message. To sum up: my name is Jon, thank you Chris and Denice, please consider becoming more involved, the 32nd LFC was great, and we have a cool new flag. Next year's LFC is in Portland, Oregon, USA from 22-27 July and will be held in combination with the Joint Meeting of Ichthyologists and Herpetologists (www.dce.k-state.edu/conf/jointmeeting/welcome.shtml). Mark it on your calendar, let your colleagues, collaborators, and students know and I hope to see you there. §

— Jon Hare

**RENEW YOUR
MEMBERSHIP NOW...**

or you may miss the February issue of STAGES. Check your address label for your expiration date

Editor's Ramblings



Hard Work Much Appreciated!

I have to add my personal congratulations and thanks to Catriona Clemmesen and her crew of incredibly efficient and organized helpers (including Evelyn Renz-Kiefel, Jörn Schmidt, Catriona Clemmesen, Susanne Homp, and Michael Bartz, pictured on page 7 of this issue of *STAGES*) for doing an excellent job of organizing this year's Larval Fish Conference. This will be a particularly memorable one for me and for everyone else who attended. The conference appeared to be entirely without problems. I say, "appeared" because there are always problems, but good conference organizers anticipate problems and are prepared to deal with them. The very best organizers not only deal with anticipated problems, but also are able to handle the unexpected, leaving the attendees with no hint that anything went awry. Well, either Catriona and her crew were very lucky, or they are among the very best. Frankly, I don't think anyone is lucky enough to have four or five days of a conference go without surprises, so all I can say is, Catriona et al...you're the best! Thanks!

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Stages is published in February, June, and October each year. It is assembled by the Newsletter Editor with contributions from several Regional Representatives and other individuals. Please send any articles, announcements, or information of interest to Early Life History Section members or affiliates to your local Regional Representative or to the Editor.

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Membership in ELHS is open to all persons or organizations interested in furthering ELHS objectives, regardless of membership in the American Fisheries Society (AFS). If you are an AFS member, simply add ELHS membership when you pay your Society dues.

Affiliate membership is open to persons or organizations who are not members of AFS. Affiliate members are encouraged to participate in Section meetings, committee work, and other activities, but they cannot vote on official Section matters, run for or hold an elected office, or chair standing committees. All members receive **STAGES**.

To become an affiliate member, go to <https://www.larvalfishcon.org/ELHSAffiliate/affiliate-triage.asp> or mail your name, institutional affiliation (if appropriate), mailing address, telephone and fax numbers, e-mail address, and dues (US \$15 per year) for the current and/or upcoming year(s) to the ELHS Treasurer (see page 2).

Please specify the membership year(s) for which you are paying dues. Make checks or money orders payable to "AFS-ELHS."

Remember to check the mailing label for your membership expiration date and renew, if necessary.

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