STAGES

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

Volume 30, Number 3 | Lee A. Fuiman, Editor | December 2009

33rd LFC – One hot time in Portland!

Wow, that was fun! The Early Life History Section of AFS held its annual meeting and Larval Fish Conference (LFC) in Portland, Oregon this past July (22nd - 27th). This LFC – the 33rd annual and counting – was convened with the Joint Meeting of Ichthyologists and Herpetologists (JMIH) at the Hilton Portland & Executive Tower in the heart of downtown Portland. The LFC had 107 pre-registrants from 10 different countries with many additional registrants arriving during the conference.

On the presentation front, the LFC was structured around three elements – theme sessions/workshop, contributed papers, and posters. The three theme sessions (the first of which had an associated and very well attended workshop) were organized with topics (hosts) of 'Temperate-tropical differences in connectivity - real and perceived' (Jeff Leis, Jenn Caselle, and Bob Warner), 'Hypoxia' (Lorenzo Cianelli and Denise Breitburg), and 'Alternative measures of condition and feeding success' (Louise Copeman, Ben Laurel, and Francis Juanes). Contributed papers and posters were submitted that were related either to these

...continued on p. 9

President's Message

First, I need to thank – in fact we all need to thank – Doug Markle, Lorenzo Ciannelli and the rest of the Local Committee for an excellent 33rd Larval Fish Conference. Thank you also to the Joint Meeting of Ichthyologists and Herpetologists for letting us join-in as a participating society and to Heide Burke and the other meeting organizers from Kansas State University. The venue was posh (the Portland Hilton), the presentations were excellent, and, I particularly liked the poster session in the parking garage (gave it a little feeling of old-timey ASIH). A number of other people contributed. Chris Chambers organized the Sally L. Richardson Award Raffle, as only Chris can. Also, Mike Fahay held the fort at the banquet while the ELHS Business Meeting was wrapping up and then kept everything running smoothly through the night. So, to the named and unnamed people who pitched in and made the 33rd LFC a success, thank you. It is your efforts, and the efforts of those like you, that make the LFC and ELHS work.

I don't want to dwell on the Business Meeting and I am sure that you don't want me to, but there were several important items. First, the Section reaffirmed a component of the rules "5.2. Annual Conferences are intended to be fully self-supporting and financially managed by the volunteering local host committee (which is chaired by a Section member), but 'up-front funds' from the Section may be authorized by the Section Executive Committee" (www.elhs.cmast.ncsu.edu/rules.html). The ExCom is working with next year's Local Committee to make sure these rules are met, while at the same time ensuring that the Local Committee has the resources necessary to accept registration fees, on-line abstracts, etc. We also reviewed the status of the Section's budget, which as I reported in my last message, is not rosy. The ExCom will review the budget again in early January and decide whether student travel awards can be supported for the 2010 LFC. Last, the business meeting was executed in decent, if not record time. There were no beverages, so attendance might have been a little low, but there

...continued on p. 11

Inside this issue

President's Message 1
News from the Regions 2
Section Officers 2
Upcoming Events 5
People 6
Publications 8
Editor's Ramblings 11

ELHS Back Then

5 years ago: ELHS establishes J.H.S. Blaxter Student Poster Award. First winner: Jacqueline Jenkins of NOAA Beaufort Laboratory.

10 years ago: Crystal Fish Award for best poster (the first student poster award) was presented to Maria Alvarez.

15 years ago: Bibliographic Committee announces electronic versions of Bob Hoyt's bibliography (13,700 entries through 1987) are available for distribution.

20 years ago: New record for newsletter: 56 pages!; special 10-Year anniversary issue.

25 years ago: President Bob Hoyt initiates a membership drive with emphasis on the foreign scientific community.

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

January 8, 2010

News from the Regions

Pacific Rim Region

Iain Suthers

Marine Science comes of age in Australia.

In 2006 the Australian federal government invested $50 million in marine infrastructure for the Integrated Marine Observing System (www.imos.org.au) for the next 5 years. The program galvanized the marine community to work collaboratively. The program has been so successful that this year, a further $52M was provided to "extend and enhance" IMOS into the Southern Ocean, the tropics, and out to 2013. There are 11 facilities (dominated by the moorings facility), distributed through 5 nodes around Australia. The IMOS program has piqued the interest of the ocean observing community, in particular because it operates as a distributed network, and because it has embraced a "whole of ecosystem" approach. One of the key IMOS principles is that the data are to be freely provided to the community. Much of the recent data can be found on the web via the IMOS data portal (imos.aodn.org.au/webportal)

The government also announced (at long last) $120M for a new national research vessel, capable of working from the tropics to the ice edge for 300 days per year. The new vessel, 85 m long, 3,000 tons will effectively multiply our existing scientific output by 6-fold. Plans are well advanced with tenders being considered and building to commence in 2010.

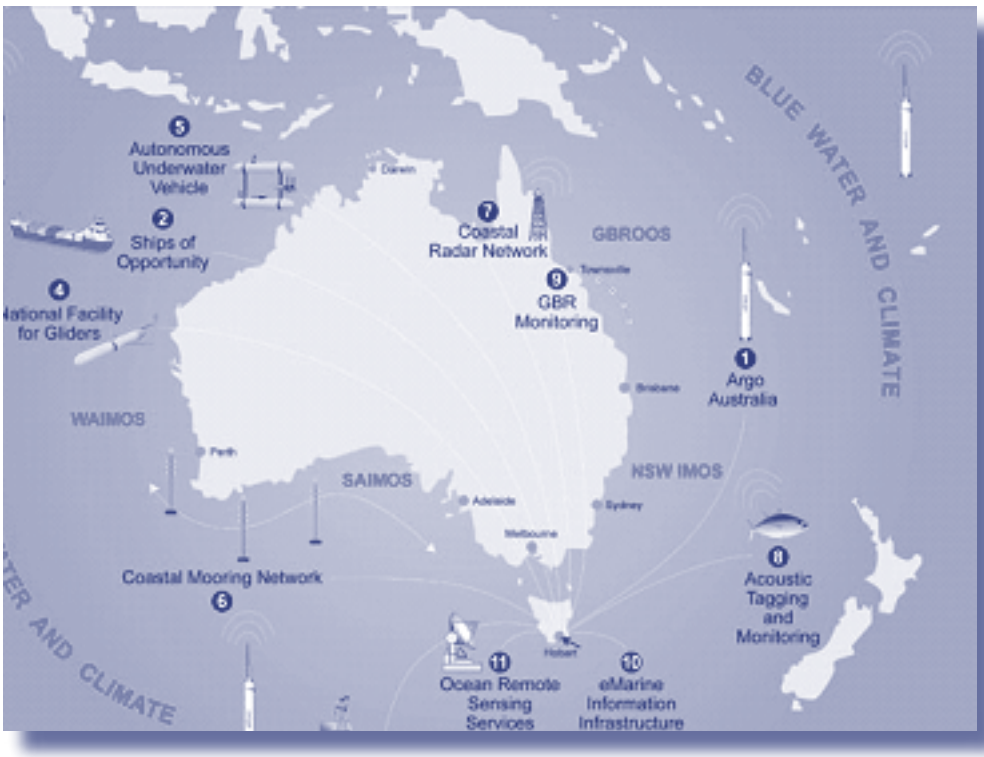

Fig. caption: A schematic for the 5 nodes and 11 facilities of Australia's Integrated Marine Observing System (source: www.imos.org.au).

Changes in the marine environment along the East coast of Australia are having a significant impact on the climate experienced along the New South Wales (NSW) coast. These changes are almost certain to continue. Over the past 100 years, the East Australian Current (EAC) has warmed the waters of southern NSW and Tasmania by more than 2°C, fundamentally changing temperate coastal ecosystems. EAC eddies are linked to severe winter storms and waves (East Coast Low events), which cause severe flooding and erosion events but which also bring significant rainfall. It was an East Coast Low storm that ran the Pasha Bulka aground off Newcastle in 2007.

One of the interesting projects is to examine the effect of cyclonic (cold core) eddies in entraining coastal water enriched in plankton and larval fish. We are making sustained observations of the eddies using Slocum Gliders and Sea Gliders. §

Section Officers

HELP US UPDATE OUR RECORDS...

Verify your email and postal address with our Secretary.

Northeast Region

Mark Wuenschel

Ken Able and Mark Wuenschel report recent progress made in synthesizing data from a broad-scale sampling effort targeting YOY bluefish (*Pomatomus saltatrix*) by several investigators. This program was a collaboration of regional groups, with standardized sampling along the US east coast: New York led by Dave Conover (SUNY Stony Brook); New Jersey led by Ken Able and Mark Wuenschel (IMCS Rutgers); Maryland led by Dave Secor (UMCES CBL); North Carolina led by Jeff Buckel (NCSU-CMAST) and Thomas Lankford (UNCW); and Florida led by Francis Juanes (UMASS).

Bluefish have a complex life history, with adults spawning in the South Atlantic Bight (SAB) in spring, migrating long distances to the Middle Atlantic Bight (MAB) in summer where they continue to spawn, and juveniles recruiting to various estuarine and ocean habitats in the SAB and MAB during spring-summer before undergoing their own southward migration in fall. We evaluated several hypotheses related to bluefish recruitment. Our major goal was to better represent coast-wide patterns of juvenile bluefish abundance and migration to improve understanding of annual recruitment patterns. To address these hypotheses, young-of-the-year (YOY) bluefish were sampled coast-wide (Florida to New York) in ocean (bottom and neuston), surf-zone, and estuarine habitats over multiple years (Figure 1). The coastwide, quasi-synoptic collections allowed us to determine the role of ocean habitats relative to estuaries for bluefish and the role of seasonal temperature change in the fall and winter movements of YOY bluefish into southern waters. This approach also allowed us to track the movement of cohorts across habitats and regions, and infer growth rates during both residency and migratory periods. The broad scale approach provided a more complete picture of YOY bluefish recruitment, and enabled identification of the cohorts that dominate in late fall, winter, and spring sampling off North Carolina and Florida. Further, we observed reduced growth in YOY during fall migration even though water temperatures are suitable for growth, suggesting the importance of migration costs, feeding opportunities during migration, and changes in energy allocation in fall. Additionally, we synthesize previously published work pertaining to bluefish recruitment along the US east coast to aid in interpretation of these data and present a conceptual model of bluefish early life history along the US east coast. Our findings provide insight into the complexities of recruitment processes in this, and potentially other important marine species, and demonstrate the ability of multiple investigators to synthesize and interpret data on a coast-wide basis. This information will be used to develop recruitment indices that are more appropriate for bluefish stock assessments. Multiple manuscripts resulting from this coordinated effort are in preparation and review. §

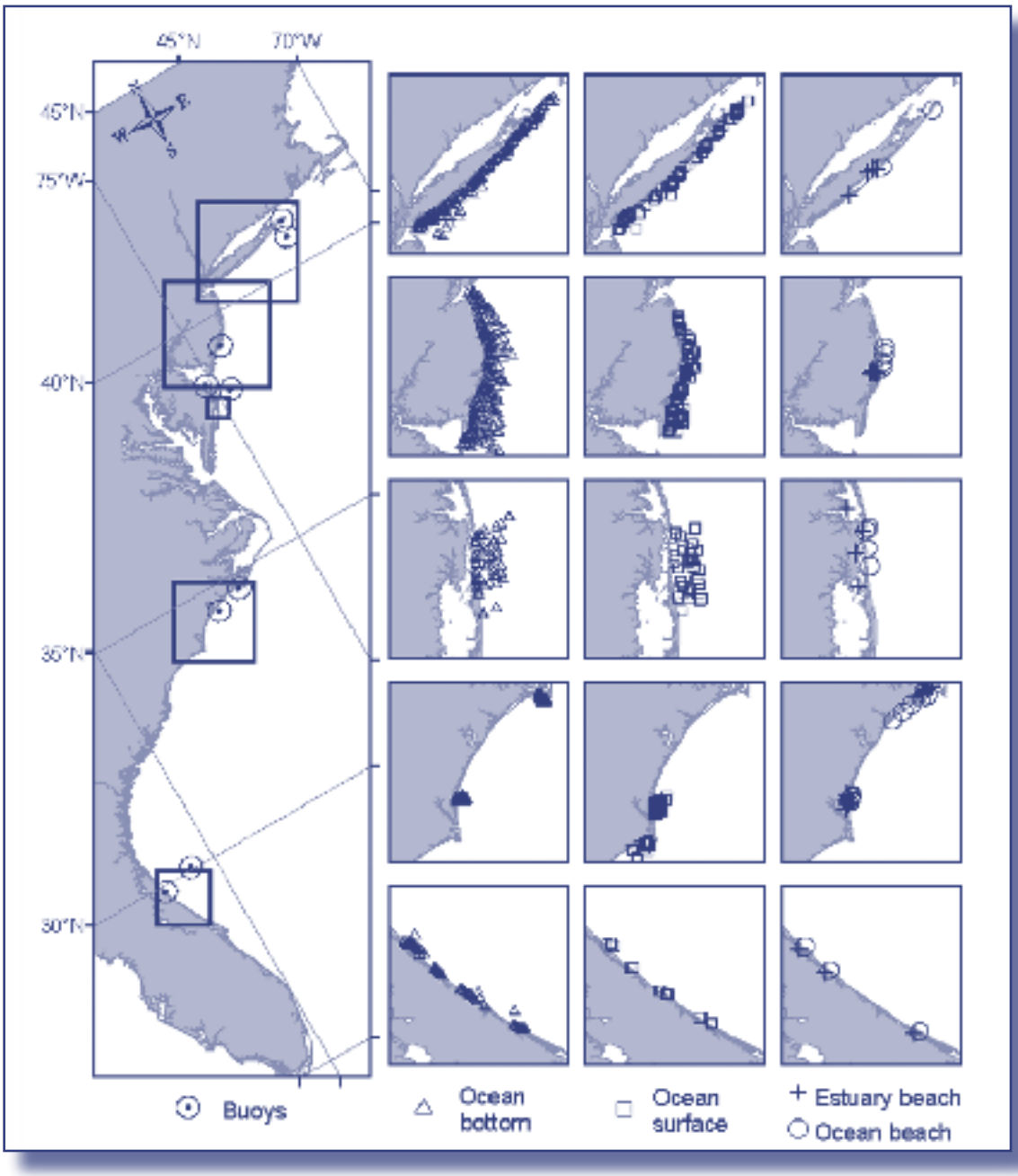

Figure 1. Map of US east coast showing study areas (insets; New York, New Jersey, Maryland, North Carolina, Florida) in the coast-wide sampling program and buoys utilized for hydrographic data (left). The locations sampled are shown for each habitat (Ocean bottom, Ocean surface, Ocean beach and Estuary beach) from New York (top row) to Florida (bottom row).

North Central Region

Jim Garvey

From South Dakota State University

Kristen Grohs recently published an article in the *Journal of Applied Ichthyology* on the ontogenetic patterns in prey use by the endangered pallid sturgeon. Juvenile and sub-adult hatchery-stocked pallid sturgeon (range 356–720 mm) were sampled from the Fort Randall reach in the Missouri River and stomach contents were sampled non-lethally. They found pallid sturgeon < 600 mm FL primarily relied on macro-invertebrates as prey (primarily Ephemeroptera); however, pallid sturgeon > 600 mm FL relied heavily (66% of diet composition) on fishes as a major food source. Johnny darters made up the greatest percentage of the piscine diet of pallid sturgeon. The results from Grohs et al. (2009) may be particularly important for drawing attention to pallid sturgeon recovery efforts by highlighting the need to conserve prey fishes.

Grohs, K. L., R. A. Klumb, S. R. Chipps, and G. A. Wanner. 2009. Ontogenetic patterns in prey use by pallid sturgeon in the Missouri River, South Dakota and Nebraska. *Journal of Applied Ichthyology* 25:48-53.

From Southern Illinois University – Carbondale

Quinton Phelps, a Ph.D. candidate, has studied the early life history of shovelnose sturgeon and pallid sturgeon in the Middle Mississippi River for the last 3 years. Specifically, Quinton is using trace-element analyses to determine origin and relative drift distance of larval and juvenile sturgeons. Over the course of his research, Quinton has determined that young sturgeon captured in the Middle Mississippi River may originate from areas as far upstream as Gavin's Point reach near Yankton, South Dakota on the Lower Missouri River.

William (Bill) Hintz, a new Ph.D. student, will begin his dissertation work on factors influencing mortality and recruitment of *Scaphirhynchus* sturgeons. Beginning in early 2010 he will begin with large-scale experiments investigating habitat use by larval pallid sturgeon. Experiments will be completed in 6 L x 4 W x 1.5 H meter recirculating flumes. The scale of the experimental flumes will allow for simultaneous analysis of multiple habitat types. Substrates used will be sand, gravel, small and large cobble with the inclusion of woody habitat. The effects of flow on habitat use will also be examined. The experiments are expected to run for at least 2 months during the peak growing season where Bill hopes to observe any ontogenetic changes in habitat use from the larval to the juvenile stage. In addition, he will also collaborate with a new faculty member, Dr. Brian Small, on factors affecting hatching success of *Scaphirhynchus* sturgeons.

Iquatem adit lumsandre magniatet loreetum zzriusting exerosto dip et, corperi usting el illutatie tis aliquis at ipsummy niat.
Ipsum dunt wis ad dion hendit, si.

Jennifer Johnson is beginning a new study as part of her M.S. thesis examining the survival of tagged age-0 *Scaphirhynchus* sturgeons. Because of the size of the tagged fish (~ 150 mm), it is unknown what behavioral changes may occur or if the age-0 fish will be able to survive with the 0.2-g tags from Advanced Telemetry Systems, Inc. Upon completion of the survival study, she hopes to tag wild YOY *Scaphirhynchus* sturgeons and follow them for approximately four weeks to determine habitat use. §

Call for papers

Session on Descriptions and Identifications

I am seeking participants, and possible organizational collaborators, for a topical session on "Descriptions and Identification" for the upcoming Larval Fish Conference to be held in Santa Fe, 30 May through 3 June 2010 (www.larvalfishcon.org). Scope of the session remains flexible, but depending on oral and poster paper titles and abstracts submitted, will hopefully include: (1) descriptions and comparisons of the embryos, larvae, and/or early juveniles of various taxa (freshwater and marine); (2) overviews of the state of the art (which taxa are adequately described and which gaps remain to be filled); (3) taxonomic criteria and aids or tools for identification (e.g., useful characters, guides, traditional and computer keys, taxonomic databases, computer image-analysis and pattern- or image-recognition technologies, and DNA and other molecular techniques and criteria), and (4) techniques for preparing illustrations (drawings, photographs, and hybrids) and acquiring, presenting, and extracting descriptive data from specimens.

Abstracts for presentations should be submitted through the conference website before the 28th of February. Please spread the word and if interested in helping to organize this session or presenting papers as part of it, please contact me at your earliest convenience.

Darrel E. Snyder Larval Fish Laboratory Colorado State University Ft. Collins, Colorado 80523 Phone: 970-491-5295 E-mail: Darrel.Snyder@ColoState.edu (or desnyder@warnercnr.colostate.edu).

Upcoming Events

34th Annual Larval Fish Conference

This year's conference will be held at the Fort Marcy Hotel Suites in Santa Fe, New Mexico, USA. The hotel is located amidst 9 acres of natural and landscaped grounds and gardens and is just a four-block walk from the historic downtown Santa Fe Plaza. Coorganizers for the conference are Ione Hunt von Herbing, University of North Texas (vonherbing@unt.edu), and Joan Holt, University of Texas Marine Science Institute (joanholt@mail.utexas.edu). The overall theme of the conference is *Larval Fish Biology in the 21st Century: Responding to a Changing Environment*.

Early registration and abstract submission close on February 28th; late registration ends on May 30th. Please see the Larval Fish Conference website for more details (www.larvalfishcon.org).

Call for Oral and Poster Papers: Persons interested in participating in any of the various theme sessions listed below or contributing papers on other early life history topics are invited to submit abstracts through the conference website by February 28th. If the paper is appropriate for a particular theme session, please also contact the associated session organizer(s) as soon as possible. The following theme sessions are planned:

Integrative Developmental Systems: Where Developmental Biology, Physiology and Ecology Meet organized by Ione Hunt von Herbing, Warren Burggren, and Pam Padilla, University of Northern Texas (vonherbing@unt.edu, burggren@unt.edu, ppadilla@unt.edu).

Developmental Programming and Ontogeny in Fish organized by Elin Kjorsvik, Norwegian University of Science and Technology (elin.kjorsvik@bio.ntnu.no).

Reproductive and Early Life History Consequences of a Changing Environment organized by Chris Chambers, NOAA-NMFS James J. Howard Marine Sciences Laboratory (chris.chambers@noaa.gov). This theme session will include oral and poster presentations that address how a changing environment, particularly with respect to climate change, is affecting or is expected to affect the reproductive ecology and early life stages of fish species. Areas of emphasis include direct and indirect effects of changes in the thermal environment, ocean acidification, and UV intensity on species distribution, life history, ecology, and population/community phenology.

Larval Fish Ecology and Conservation of Native Fishes in the American Southwest organized by Kevin Bestgen, Colorado State University Larval Fish Laboratory (kevin.bestgen@colostate.edu). The session will focus on the substantive contributions that fish early life history investigations have played in understanding the ecology and conservation of native fishes in aquatic ecosystems of the American Southwest.

Larval Fish Ecology and Recovery of Missouri-Mississippi 'Big River' Fishes organized by David Galat, USGS Missouri Coop Unit, University of Missouri (galatd@missouri.edu). Papers and posters in this session will consider early life history of fishes in the Missouri-Mississippi Rivers and their major tributaries with special emphasis on conservation and recovery of imperiled 'big river' fishes (e.g., *Scaphirhynchus* sturgeons, *Macrhybopsis* chubs) and impacts of invasive Asian carps on native fishes. Contributions in the following general areas are particularly encouraged: (1) ecology and habitat use, (2) environmental factors affecting growth and survival, and (3) propagation of *Scaphirhynchus* sturgeons.

Freshwater Larval Fish Ecology organized by Nancy Auer, Michigan Technological University, (naauer@mtu.edu); Ed Rutherford, University of Michigan (ed.rutherford@noaa.gov); and Ed Roseman, USGS Great Lakes Science Center (eroseman@usgs.gov).

Descriptions and Identification organized by Darrel Snyder, Colorado State University Larval Fish Laboratory (darrel.snyder@colostate.edu). Depending on abstracts received, this session is intended to include: (1) overviews of the state of the art (which taxa we know and which gaps remain); (2) new morphological descriptions, guides, keys (traditional and computer-interactive), taxonomic databases, and computer image recognition programs; (3) traditional and 21st century techniques for illustration, measurement, and presentation of descriptive and taxonomic information; and (4) techniques and criteria for genetic identification.

General Contributed Paper Session (for papers that do not fit into any of the above). §

Workshop Announcement

The "Workshop on understanding and quantifying mortality in pelagic, early life stages of marine organisms: Experiments, observations and models" (WKMOR) will be held in Aberdeen, Scotland on March 22-24, 2010 and will be co-chaired by Alejandro Gallego, Edward Houde, and Elizabeth North. The objectives of WKMOR are to:

a) Review current and emerging laboratory, mesocosm, field and modelling methodology aimed at understanding the underlying mechanisms that control mortality during fish and shellfish early life stages;

b) Summarize the state of our understanding of the mechanisms that control mortality of eggs, larvae and juveniles, identify information gaps, and list future research directions as proceedings from the workshop;

c) Develop recommended techniques to quantify mortality in the field and model its impact on subsequent recruitment.

More information on the workshop can be found at northweb.hpl.umces.edu/WKMOR/WKMOR-home.htm. The workshop will be held under the auspices of International Council for the Exploration of the Sea Working Group on Modelling Physical-Biological Interactions and Working Group on Recruitment Processes.

This workshop is the follow-up of research priorities identified by the participant of the previous WKAMF workshop on advances in modelling physical-biological in fish early life history (published in a series of contributed papers to MEPS Theme Section Volume 347, October 11, 2007), as well as of the successful theme session on "Death at sea - Mortality in the zooplankton and early-life stages of marine fish (estimates, processes and outcomes)" held at the 2009 ICES Annual Science Conference in Berlin, Germany, 21-25 September and convened by Alejandro Gallego (UK), Edward D. Houde (USA), and Elizabeth W. North (USA). §

People

Bill Richards Receives Ahlstrom Award

Dr. William J. Richards was announced as the second recipient of the Early Life History Section's Elbert H. Ahlstrom Career Achievement Award at the 2009 Joint Meeting of Ichthyologists and Herpetologists. This award recognizes his excellence in scientific contributions to the knowledge of early life history of tropical fish and fisheries, highly migratory fish species, larval development, ichthyoplankton survey methods and applications, and taxonomy, and for his scientific leadership and mentoring of students throughout 45 years of scientific endeavor. The following information was contained in his nominating letter, submitted by John Lamkin.

William Joseph Richards received his degree of Doctor of Philosophy in vertebrate zoology from Cornell University in 1963. He accepted a position with the Bureau of Commercial Fisheries Biological Laboratory in Washington D.C. in 1963. This first federal position began a 45-year-long, distinguished and ongoing career in the early life history of fishes. Dr. Richards' first assignment was as a project leader to study the distribution, abundance, taxonomy, and ecology of the eggs and larvae of the scombrid fishes of the tropical Atlantic Ocean, a subject he has continued to pursue throughout his career. In 1965 he transferred to the Tropical Atlantic Biological Laboratory in Miami, Florida. There he served as a Supervisory Zoologist and as Project Leader of three projects -- Ecology of Tropical Atlantic Scombrid Larvae and Juveniles, Fecundity of Scombrid Fishes, and Behavior of Scombrid Larvae and Juveniles. It was during this time that Dr. Richards developed his early body of work on identification and distribution of scombrid larvae, and his work on the genus *Thunnus*. His work on bluefin tuna earned him an international reputation as a preeminent researcher, and he is recognized worldwide as the leading expert in matters concerning larval bluefin tuna dynamics, and indeed, in all matters larval fish related.

With the re-organization of the Bureau of Commercial Fisheries Service into what is now the Miami Laboratory of the NOAA Fisheries' Southeast Fisheries Science Center, he served as a Program Chief for the Reproductive and Developmental Biology of Fishes Program, the Pre-recruit Fisheries Monitoring Program, and the MARMAP Ichthyoplankton Survey Program. Dr. Richards was instrumental in developing the current ichthyoplankton survey for bluefin tuna which has been used since 1977 in the Gulf of Mexico and in developing the SEAMAP program which has proven so successful for ichthyoplankton surveys.

In 1977 Dr. Richards was named Director of the Miami Laboratory of NOAA Fisheries and served until 1983. In his administrative capacity as Director of the Miami Laboratory Dr. Richards supervised a scientific and support staff of 115 individuals, and was responsible for planning, organizing and implementing three research programs: Ocean Pelagics, Reef Resources, and Fisheries Statistics. These programs gathered basic life-history and management related statistics on highly migratory and other fish species, throughout the U.S. Atlantic EEZ, Puerto Rico and the Virgin Islands, and the Gulf of Mexico.

Since 1983 Dr. Richards has held the position of Senior Scientist at the Southeast Fisheries Science Center in Miami. As a Senior Scientist he advises the Center Director on all aspects of early life history of fishes research, especially the application and use of ichthyoplankton research for fishery independent assessment of stocks in the management of fisheries of ecological and national economic importance.

As a research scientist Dr. Richards has published over 200 professional and scientific articles and 102 peer reviewed book chapters. He served a 3-year term as Editor for the National Marine Fisheries Service including its journal the *Fishery Bulletin*, served as the Editor of the *Bulletin of Marine Science* and *Studies in Tropical Oceanography* for 23 years, and has served or serves on the editorial boards of *Copeia, Fishery Bulletin*, and *Fishes of the Western North Atlantic*.

He was the managing Editor for the publication of the Ahlstrom Symposium, the *Ontogeny and Systematics of Fishes.* Additionally, Dr.Richards was the editor and driving force behind the comprehensive two volume scientific reference book, *The Early Stages of Atlantic Fishes – An Identification Guide for the Western and Central North Atlantic*. This work represents the compilation of 45 years of experience and research on the identification and taxonomy of larval fish of which he authored or co-authored chapters on 71 different families. This guide offers the most complete coverage of eggs, larvae and juveniles of all the families of fishes found in the area. This detailed and extensive work provides a first-time, much-needed and much-anticipated use-able reference guide for identifying larval fishes in the region. It is used both in the field and in the lab to teach new students and researches the intricacies of larval fish development along with identification techniques.

Dr. Richards' considerable activities and interests were not restricted to government service. From 1966 to 1975 he served as an Adjunct Associate Professor at the Rosenstiel School of Marine and Atmospheric Sciences, Miami, Florida. In 1975, he was appointed Adjunct Professor to the Graduate Faculty at the University of Miami, and continues in this capacity at present. In 1983, he was appointed a Fellow of the Cooperative Institute for

...continued on p. 7

Students Garner Awards

Honorees of the Sally L. Richardson Award for best student paper. Kelton McMahon (right) was named winner of the award and Yuichi Fukunishi (left) received honorable mention. Grace Klein-MacPhee (center) served as Chair of the award committee.

The 24th annual Sally L. Richardson Award for the best student paper presented at the 33rd annual Larval Fish Conference was given at Portland Oregon July 22-27, 2009. This was part of the Joint Meeting of Ichyhyologists and Herpetologists. Twenty-two student papers were presented and the competition was what we have come to expect - very close.

The winner of the award for best student paper was Kelton McMahon of Woods Hole Oceanographic Institution for his presentation entitled: "*Patterns in Carbon Isotope Fractionation of Amino Acids Between Diet and Consumer in a Model Fish Species.*" Marilyn Fogel, Travis Elsdon, and Simon Thorrold were co-authors. Honorable Mention for the award went to Yuichi Fukunishi of the Maizuru Fisheries Research Station, Field Science Education And Research Center, Kyoto, Japan for his presentation "*Comparison of UV-B Tolerance among Wild and Hatchery-Reared Juveniles in Black Sea Bream (*Acanthopagrus schlegeli*) and Red Sea Bream (*Pagrus major*).*" Reiji Masuda, Dominique Robert, and Yoh Yamashita were co-authors.

Congratulations to all of you 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, Richardson Award Committee

The 8th John H. S. Blaxter award for the best student poster was given at the 33rd annual Larval Fish Conference. Eight student posters were presented, all were excellent, and the judges were struck by how far poster presentations have come.

The winner of the award for best student poster was Klaus Huebert of Rosensteil School of Marine and Atmospheric Sciences, University of Miami, for his poster entitled "*Observed and Simulated Swimming Trajectories of Late Stage Coral Reef Fish Larvae Offshore of the Florida Keys.*" Su Sponaugle and Robert Cowen were co-authors.

Honorable Mention went to Shinnosuke Nakayama of The University of Texas Marine Science Institute for his poster entitled "*Habitat Competition Among Young Red Drum.*" Alfredo Ojanguren and Lee Fuiman were co-authors.

Congratulation Klaus and Shin and the rest of the student presenters. We very much appreciate your efforts and contributions. §

— Jon Hare, Chair, Blaxter Award Committee

Honorees of the John H. S. Blaxter Award for best student poster. Klaus Hubert (center) was named winner of the award and Shinnosuke Nakayama (left) received honorable mention. Jon Hare (right) served as Chair of the award committee.

Ahlstrom award...cont'd from p. 6

Marine and Atmospheric Studies. Dr. Richards also serves as a member of the Affiliated Faculty of the College of Science, Florida Atlantic University. He taught courses on the early life history of fish, and has directed student research for 34 students either as Chairman for Ph.D. students or M.S. students, or served on their committees. His most recent Ph.D. student graduated in 2007. As one of his past students myself, I can attest that Dr. Richard's greatest attribute is his ability to encourage and motivate young researchers. This is true not only of his students in academia, but also research staff within NOAA to this day. His willingness to mentor students and young employees has contributed greatly to the professionalism and quality of scientific research conducted at NOAA, and made him respected by the scientific staff throughout NOAA-Fisheries.

Dr. Richards has been a steadfast supporter and promoter of the Early Life History Section of the American Fisheries Society. His support has been moral as well as material. His unwavering encouragement of young investigators of the early life history of fishes, has been recognized and appreciated by many. He served as Chair of the local committee of the 10th annual Larval Fish Conference held on the campus of the University of Miami's Rosenstiel School of Marine and Atmospheric Science in 1986. This Larval Fish Conference drew wide attendance and a wide array of international participants. He assisted in the development and execution of the first truly international Larval Fish Conference, the 13th in Merida Mexico.

Dr. Richards was honored as a Fellow of the American Institute of Fishery Research Biologists, a Fellow of the Explorers Club, a member of Sigma Xi-The Scientific Research Society, the Western Society of Naturalists, and the American Society of Ichthyologists and Herpetologists. In 2002, the Marine Fisheries Section of the American Fisheries Society awarded him the O. E. Sette Award. In 1992, he was chosen as a Scholar-in-Residence, Bellagio, Italy by the Rockefeller Foundation.

However, Dr Richards is equally proud of his achievements in his community and his family. He has three children, and seven grandchildren, serves as an active member and officer of the Old Cutler Presbyterian Church, serves as President of the Board of

...continued on p. 11

Publications

Available now: Advances in Early Life History Study of Fish

Edited by Catriona Clemmesen, Arne M. Malzahn, Myron A. Peck, and Dietrich Schnack

Published in *Scientia Marina*, Volume 73S1, Supplement 1. Consejo Superior de Investigaciones Cientificas. 2009.

This volume includes 19 contribution presented at the 32nd annual Larval Fish Conference held in Kiel, Germany, 4-7 August 2008. The first seven papers included in this book represent a variety of small-scale spatial distributions, seasonal variation in larval fish assemblages and vital rates in fish eggs and larvae, as well as reserach utilizing biophysical, individual-based modelling. The following two papers summarize the challenges and opportunities related to the study of developmental physiology and the effect of acclimiation processes on gene expression. Eight papers then deal with life history strategies. Topice include exploring repeated measurements of cumulative length frequencies of developing cohorts, patterns of growth and condition, methods for defining growth and condition, triphic flexibility, interactions between species and aspects of recolonization. The final two papers of this book deal with aquaculture aspects. §

Available now: Manual of recommended practices for modelling physical – biological interactions during fish early life

Edited by Elizabeth W. North, Alejandro Gallego, and Pierre Petitgas, Jr.

ICES Cooperative Research Report No. 295. 111 pp. 2009. ISBN 978–87–7482–060–4.

This important collection contains chapters on:

Hydrodynamic models; Particle tracking; Biological processes; Adaptive sampling; Connectivity; Recruitment prediction; Looking to the future: Recommendations and research needs.

Free download: www.ices.dk/products/cooperative.asp. §

Other Recent Publications

Early Life History of Marine Fishes. B.S. Miller and A.W. Kendall, Jr. Published by University of California Press. ISBN: 978-0-520-24972-1. 2009.

Fish Larval Physiology. R.N. Finn and B.G. Kapoor. Published by Science Publishers. ISBN: 1578083885. 2008.

Early Stages of Fishes in the Western North Atlantic Ocean: Davis Strait, Southern Greenland and Flemish Cap to Cape Hatteras. Michael P. Fahay. Published by North Atlantic Fisheries Organization.

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.P. Olivar and J.J. Govoni. Published in *Scientia Marina*, Volume 70S2 Supplement 2. ISSN: 0214-8358. 2006.

Available now: Ecology of Anguilliform Leptocephali: Remarkable Transparent Fish Larvae of the Ocean Surface Layer

By Michael J. Miller

Published in Aqua-BioScience Monographs. TERRAPUB. 2009.

This review examines the present state of knowledge about the ecology of anguilliform leptocephali, which are the unique but poorly understood larvae of eels. All eels spawn in the ocean and their leptocephali live in the ocean surface layer. Their presence worldwide and basic biology have not been extensively studied due to their strong ability to avoid standard plankton nets and their fragile transparent bodies. Leptocephali have laterally compressed bodies and contain a high proportion of transparent energy storage compounds. They have diverse morphological features, but appear to feed only on particulate material, such as marine snow or discarded larvacean houses. Some information on their chemical composition, respiration, growth rates, depth distributions, swimming ability, metamorphosis, and recruitment patterns has been reported, which highlights the interesting and unique aspects of leptocephalus larvae. Regional zoogeography and reproductive ecology of adults and ocean currents affect the spatial and temporal distribution patterns of leptocephali, which have long larval durations, but most life histories and larval recruitment behaviors remain undocumented. Their transparency, feeding strategy, and large size seem to be a unique and successful larval strategy, but the abundance and ecological significance of leptocephali in the ocean appear to have been underestimated.

Contents:

1. Introduction
2. Biology of leptocephali
   2-1. Developmental stages
   2-2. Morphological features
   2-3. Sensory organs
   2-4. Feeding ecology
   2-5. Physiology and energetics
   2-6. Growth of leptocephali
   2-7. Metamorphosis
   2-8. Swimming behavior
3. Zoogeography of leptocephali
   3-1. Taxonomic groups of eels
   3-2. Spawning areas of eels
   3-3. Distribution and abundance of leptocephali
   3-4. Seasonal occurrence of leptocephali
4. Ecology of leptocephali
   4-1. Depth distribution and vertical migration
   4-2. Survival and predation
   4-3. Recruitment behavior
5. General discussion and future perspectives
   5-1. Biology of leptocephali
   5-2. Leptocephalus growth
   5-3. Zoogeography and diversity of leptocephali
   5-4. The leptocephalus larval strategy
   5-5. Oceanic changes and leptocephalus recruitment
   5-6. Ecological significance of leptocephali in the surface layer
   5-7. Future research perspectives

Available for free download at:

www.terrapub.co.jp/onlinemonographs/absm/list.html
www.terrapub.co.jp/onlinemonographs/absm/pdf/02/0204.pdf
www.terrapub.co.jp/onlinemonographs/absm/html/02/0204.html

...continued on p. 9

Available now: Plankton. A Guide to Their Ecology and Monitoring for Water Quality

By Iain M. Suthers & David Rissik

Published by CSIRO Publishing, 272 pp. 2009. ISBN: 9780643090583. $49.95

Plankton serves as a wonderful tool for measuring water quality. Many local councils and water quality managers collect phytoplankton and zooplankton in response to the increasing incidence of algal (phytoplankton) blooms in rivers and estuaries, however, a lack of consistency and scientific rigor in the methodologies used often results in unresolved outcomes. While some guidelines have been developed for the collection and monitoring of freshwater algae (Algal Watch), there are differences between the methods and protocols used to sample estuaries and freshwater systems as well as those used to sample zooplankton.

This practical book gives an introduction to the biology and ecology of plankton and its use as a tool for monitoring water quality. It explores the ecology of plankton, its associated environmental and water quality issues, and its importance as an environmental indicator. A chapter on best practice in sampling and monitoring details how to design, implement and conduct meaningful phytoplankton and zooplankton monitoring programs in marine and freshwater habitats. It gives overviews of the major freshwater and coastal phytoplankton and zooplankton groups and outlines their associated environmental issues and the management implications. A select number of real-life case studies demonstrate the use of plankton for identifying and monitoring water quality issues.

Features:

- Explains the role of plankton in aquatic ecosystems and its usefulness as a water quality indicator
- Updates and details best practice in methodology for plankton sampling and monitoring programs
- Demonstrates how to analyse and interpret the results of sampling programs in terms of management strategies
- Brings together widely-scattered information on freshwater and coastal phytoplankton and zooplankton and provides a list of up-to-date references §

Recent publications...cont'd from p. 8

Eggs and Larvae of North Sea Fishes. P. Munk and J.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 J.J. Govoni. Published by the American Fisheries Society. ISBN 1-888569-58-1. 2004.

33rd LFC...cont'd from p. 1

themes or to other topics of interest. In total, the LFC hosted 77 oral presentations and 28 posters. Presentations were of excellent quality overall, especially by students (see articles on Sally L. Richardson and J. H. S. Blaxter student award winners).

The ELHS business meeting was held on Sunday after the last LFC talk. The business meeting was well attended, and a full set of reports was provided to ELHS President Hare before the meeting.

Besides the science and colleagues, we were treated to the best food, drink, and music that the Portland area had to offer. The JMIH opened with a well attended social where old acquaintances were reunited and new friendships began. On the first evening of talks, the JMIH reception was held in Portland's Historic Sellwood District at Oak Park, which is located along the banks of the Willamette River. Amusement rides were available and amusing conversations were flowing as freely as the local brew hops, all of which help soothe the record high temperatures that we experienced during our stay. The ELHS/LFC social was held at Lola's Room at the Crystal Ballroom site - one of several McMenamins' establishments in the Portland area. Not only were good times had but the ELHS/LFC social served multiple Section functions. That evening we announced the winners of the Sally L. Richardson (SLR) Best Student Paper Award and the John H.S. Blaxter Best Student Poster Award (see items in this issue), identified SLR raffle item winners and, in support of our Blaxter endowment, and held our 2nd annual auction for our Conference flag and various prized contributions. Way to step up everyone! The meeting was brought to a close with the JMIH banquet.

Part of the benefits of co-meeting with JMIH is the diversity and mix of rich traditions that were evident throughout the week. That was emphasized at the banquet. Meeting-wide honors were bestowed, appreciations were given to the various Local Committees and the KSU Conference staff, and sincere 'thank you's' were expressed to participants and participating societies – including a very heartfelt acknowledgement by banquet host Larry Allen and JMIH President John Lundberg to our Section's contribution. Glad to do it!

After all the planning, preparations, and staffing of the conference, the ELHS/LFC Local Committee is glad to declare the 33rd LFC a grand success. Come back to Oregon and visit us when work or travels brings you to our great state where – as our state motto declares – we "Fly With Our Own Wings." §

— Doug Markle and Chris Chambers
for the 33rd LFC Local Committee

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 H.I. Browman and A.B. 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. §

Images from the 33rd Annual Larval Fish Conference
Portland, Oregon — July 2008

Victims of Jon Hare's masterful autioneering pay their debts...for a great cause.

Bright smiles from Ann Matarese and Deborah Blood tell us they are enjoying the meal and the company at the ELHS social.

Lee Fuiman was one of many to pitch in to sell tickets for the Sally Richardson raffle.

American bidders could not beat the bid offered by a cartel of overseas investors for the flag from the 32nd Larval Fish Conference. Lorenzo Cianelli, Werner Ekau, Myron Peck, Emanuel Gonçalves, and Tony Miskiewicz show off their prize.

Past ELHS Presidents Darrel Snyder and Joan Holt find a comfortable spot to enjoy their meal.

Vivian Buehler and Chris Chambers laugh it up over a joke that Chris told. Or, was it a joke that Vivian told?

Perhaps the happiest of all people at the ELHS social was Michael Miller. He outbid all others for a rare copy of the Ahlstrom Symposium volume...a book he had always wanted. To make it more special, his copy was autographed by many of the authors who contributed to that volume (pictured here).

Ahlstrom award...cont'd from p. 7

Trustees of Miami International Seminary, served on the Board of Directors of Westminster Christian School, served as an officer of a local citizen's association, and was President of Lewis & Reilly, Inc., a family business, for five years. However, I believe that other than his family, he is most proud of his tree farm in Pennsylvania where, in retirement, he plans to devote more of his time. Those who have had the opportunity to enjoy his hospitality there will understand his desire to take a more active role in the farm's management and spend more time with his trees. §

— John T. Lamkin, NOAA-Fisheries, Southeast Fisheries Science Center

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

was no reason to dally since we all knew the banquet was starting without us.

Speaking of the banquet, first it was hot (I mean temperature hot). I am embarrassed to say I went through several shirts during the course of the evening. Second, the venue was great - Lola's Room at McMenamins. We had a private room, but with the American Elasmobranch Society banquet downstairs. So as LFC'ers trickled out, some were gobbled up into the shark (and skates, rays, and chimaeras) party. Third, we conducted the Blaxter Award Auction with a very select group of items including a copy of *Ontogeny and Systematics of Fishes* (the Red Book) donated by Ann Matarese, a bottle of Doug Markle's own Pinot, and the 32nd Larval Fish Conference Flag. The auction was a huge success: the Red Book was signed by a number of the authors, the bottle of wine made it out of the banquet still corked, and after stiff competition from several coalitions, the flag went to an international cartel so complex that I found myself adding up numerous currencies to ensure that the winning bid had been paid. Fourth, the highlight of the evening was the student award presentations. These awards were hotly contested with many excellent presentations and posters. The future of the ELHS is in good hands, if the quality of student presenters is any measure.

Please allow me one last item from the 33rd LFC. It was my honor to give the Elbert H. Ahlstrom Lifetime Achievement Award to William Richards. This award was presented at the Joint Meeting Banquet, which is fitting, given Bill's contributions to both the ELHS and ASIH. Unfortunately Bill could not attend and Jeff Govoni accepted the award in Bill's stead. I had prepared a pithy, well constructed speech for the occasion, but after sitting in the back of the ballroom for almost two hours with only one glass of wine and not much more food, I could see that the crowd was in no mood. I gave an abbreviated version and Jeff accepted quickly. The whole affair was very well received, in part for its speed, but also owing to the audience's recognition of Bill's contributions to both ichthyology and early life history research. However, I still feel that I gave Bill short shrift. Bill really embodies the Alhstrom award in a way that I was unable to say for fear of mass discontent. I had the privilege of learning from and working with Bill. He was free with his time, encouraging, and vested in educating and training the next generation of larval fish researchers. I was able to travel to Miami to learn from Bill as others had traveled to and worked with Ahlstrom in La Jolla. Bill directed research of 34 graduate students through an Adjunct Appointment at the RSMAS, and many others, like myself, passed through his lab to listen, talk, and learn. His knowledge of Atlantic and Indian Ocean larval fishes has contributed to numerous careers and a multitude of studies. His mark on the field of larval fish research is permanent. Obviously, this is some of what I had written for my presentation, but left out. That said, Bill really is the embodiment of the Alhstrom Award and I am privileged to have had the opportunity to make the presentation.

The final item for this message concerns future LFCs. I am happy to say that plans for the next, and the next, and the next LFC are coming together. Next year will be in Santa Fe, New Mexico with Ione Hunt von Herbing leading the local committee, followed by the University North Carolina - Wilmington, and the Institute of Marine Research, Bergen with Tom Lankford/Fred Scharf and Howard Browman leading, respectively. 2011 and 2012 are too far away to write about, but 2010 is coming fast: 30 May - 3 June 2010. Santa Fe is beautiful, the meeting venue is wonderful, and the theme sessions look awesome (I pulled out my Thesaurus for this part). I mean no disrespect to meetings past nor future, but if you make it to one meeting this decade, I recommend Santa Fe. I have been there for several ASLO meetings and cannot imagine a better place for an LFC (sorry Tom, Fred, and Howard).

In sum, Doug Markle, Lorenzo Cianelli and the rest of the official and unofficial crew did a great job at the 33rd LFC – thank you. The Business Meeting was quick. The banquet was hot. Bill Richards was deservedly honored. And Santa Fe is going to be good – hope to see you there. §

— Jon Hare, President

Editor's Ramblings

I am so pleased that the Early Life History Section decided to create an award for lifetime achievement in our field. It shows the maturity of our discipline and our organization and it give us an opportunity to think about those who have made a very significant impact on the way we conduct our science. And of course, it provides an avenue by which we can honor these luminaries.

What a perfect choice to bestow the Elbert H. Ahlstrom Career Achievement Award on Bill Richards. His work has touched us in so many ways. John Lamkin's nomination letter was such a perfect tribute, it was the obvious way to convey to our members just how significant Bill's 45 years of service have been.

Bill, I offer my personal congratulations to you. You have been an inspiration to me and probably far more people than you realize. Frankly, I don't know how you have managed to accomplish so much professionally, while maintaining that elusive balance with a rich personal life. I have greatly enjoyed our all-too-infrequent interactions. Thanks.

Thanks, also to Doug Markle and the local committee who hosted the excellent meeting in Portland. I am one of those strong proponents of meeting occasionally with other ichthyologists, and this year's meeting was an especially rewarding experience for me. I know that other ELHS members feel the same. Finally, my sincere thanks to all those who contributed to this issue of *STAGES*. You can tell by the publication date that this issue was diffuclt to get out. My apologies to all for being unforgiveably late. §

RENEW YOUR MEMBERSHIP NOW...

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

Newsletter Production Team

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.

Newsletter Editor

Lee A. Fuiman
Marine Science Institute
University of Texas at Austin
lee.fuiman@mail.utexas.edu

Northeast Region

Mark J. Wuenschel
NMFS, Northeast Fisheries Science Center
Woods Hole Laboratory
mwuensch@mercury.wh.whoi.edu

Southeast Region

Claire Paris
Rosenstiel School for Marine and Atmospheric Science
University of Miami
cparis@*rsmas.miami.edu*

North Central Region

James E. Garvey
Fisheries & Illinois Aquaculture Cntr.
Southern Illinois University
jgarvey@siu.edu

Western Region

Daniel Margulies
Inter-American Tropical Tuna Commission
dmargulies@iattc.ucsd.edu

Pacific Rim Region

Iain Suthers
School of Biological, Earth, & Environmental Sciences
University of New South Wales
i.suthers@unsw.edu.au

European Region

Audrey Geffen
Department of Biology
University of Bergen
Audrey.Geffen@bio.uib.no

Join ELHS

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.

AFS-ELHS
University of Texas at Austin
Marine Science Institute
750 Channel View Drive
Port Aransas, Texas 78373-5015