STAGES

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

Volume 31, Number 2 | Lee A. Fuiman, Editor | June 2010

Plourde and Méndez-Sánchez Receive Top Student Honors

The 25th annual Sally Richardson award for the best student paper was awarded to Jerome Plourde of the Université du Québec à Chicoutimi, Chicoutimi, QC, Canada, for his presentation entitled "Quantifying Zooplankton Consumption of Larval and Juvenile Rainbow Smelt Using a Mercury Mass Balance Model." Co-authors of the presentation were P. Sirois and M. Trudel. The award was made at the 34th annual Larval Fish Conference in Sante Fe, New Mexico, which took place between May 31 and June 3, 2010. Fifteen student papers were presented and the competition was what we have come to expect - very close. Honorable mention was given to Trebvor Krabbenhoft of the University of New Mexico, Albuquerque, New Mexico, for his presentation "Reproductive Phenology of Fishes of the Middle Rio Grande, New Mexico." Co-authors of Trebvor's presentation were S.P. Platania and T.F. Turner.

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Grace Klein-MacPhee awards the 2010 Sally L. Richardson Award for best student paper to Jerome Plourde. Photo: H. Browman

Inside this issue

ELHS Back Then

5 years ago: Grace Klein-MacPhee retired from the University of Rhode Island but continues to serve ELHS.

15 years ago: Tom Simon stepped down after 5 years as Newsletter Editor.

20 years ago: Marie Poland Fish died at the age of 88. Author of landmark publication on identification of fish larvae and co-founder of Narragansett Marine Laboratory.

25 years ago: ELHS's need for a publication outlet inspired creation of AFS Symposium Series.

30 years ago: Early Life History Section newsletter premiered with Fred Binkowski as editor.

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

October 2, 2010

President's Message

It seems only yesterday that I was writing my first message on a train in Germany following the 32nd Larval Fish Conference. These past two years have gone quickly, very quickly. The Section faces some challenges in the coming year (more on this at the end), but we are in good hands with our new President, Sue Sogard, and new Secretary, Catriona Clemmensen. Thank you Sue and Catriona for your willininginess to serve the Section. Also, thank you to the remainder of the Executive Committee and Committee Chairs who faithfully continue the functions of the Section. Ione Hunt von Herbing has served as Secretary and Betsy Laban has served as Treasurer. Lee Fuiman continues as Newsletter Editor, producing the informative *STAGES*. Jeff Buckel continues as Section webmaster and I believe the web site just received a face lift, so check it out (www.elhs.cmast.ncsu.edu). Jeff Govoni continues as Section Historian serving as the source of Section knowledge. Most of our committee chairs also are continuing. Chris Chambers as Time and Place Chair has achieved a remarkable feat: discussion of LFC's out to 2016 at the recent business meeting. Grace Klein-MacPhee serves as the Sally Richardson Award Chair, organizing another judging marathon at this year's LFC and carrying Sally's legacy forward for the Section. The Elbert H. Ahlstrom Award committee is chaired by Jeff Govoni – there are no current Ahlstrom award nominations so if you have potential candidate contact Jeff. I will stay on as the John Blaxter Award Chair, and will continue fund-raising efforts to build the endowment for the award. I will also start as the Chair of the Nominations and Mail Ballot Committee, and we will be having an election soon for President-Elect and Secretary-Elect. If you have any nominations please send them to me by the end of June. Thank you again to all the above for your hard work and effort during my term.

Also thank you to the Local Committee for the 34th Larval Fish Conference in Santa Fe. The meeting was great and the Local Committee deserves a huge amount of credit. The venue was intimate with lodging, talks, and a good portion of meals and social events all at the same site.

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News from the Regions

European Region

Audrey Geffen

From: Espegrend Marine Biolgical Station, Department of Biology, University of Bergen

CalMarO Ocean Acidification Experiment

A collaborative work on the effects of ocean acidification on the early life stages of fish larvae was conducted by scientists from the University of Bergen and the Leibniz Institute for Marine Sciences (IFM-Geomar) from mid-March to May 2010. The project, which is funded by the EU FP7 CalMarO Project, EPOCA and BIOAcid, aims to investigate the effects of acidification on the development of herring and cod larvae throughout the egg and larval period. Morphometric measurements for growth rates, biochemistry and calcification of otoliths are analyzed. Otolith morphology, microstructure and microchemistry are compared to effects on the swimming behavior of the larvae. The effects of elevated CO_2, leading to reduced pH, on the condition of the fish larvae are studied using RNA/DNA ratios, proteins and lipids.

The research team made use of the land-based mesocosm facility at the Espegrend Marine Station, Department of Biology, University of Bergen. The CO_2-perturbation experiment was carried out with four pCO_2 levels (380, 870, 1400 and 4000 µatm) and three replicates for each treatment level. The 2650-L replicate tanks

Land-based mesocosm facility at Espegrend Marine Station.

were placed inside two water baths to keep the temperature stable. The targeted pCO_2 levels were achieved by bubbling CO_2 directly into the tanks and regulated by a feedback mechanism from a pH probe in each tank, connected to an Aquastar IKS computer. The Aquastar IKS provided continuous daily pH measurements for all tanks. In addition, daily monitoring with a hand-held WTW pH probe was done to check the pH values of the Aquastar IKS. The WTW pH probe was calibrated

Aquastar IKS computer regulates the amount of CO_2 bubbled into the tanks.

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Northeast Region

Mark Wuenschel

From: Thomas 'Motz' Grothues, Rutgers University Marine Field Station, Tuckerton, New Jersey

Planned work on habitat use/behavior by young-of-the year Atlantic croaker relative to hypoxia has been postponed for a year due to oil fouling of the Louisiana study site. Scheduled AUV telemetry cruises were a collaborative effort of Tom Grothues (Rutgers University, New Jersey) and Peter Thomas (University of Texas Marine Science Institute, Port Aransas) set to work out of Louisiana Universities Marine Consortium (LUMCON) in July.

From: Karin Limburg State University of New York, College of Environmental Science and Forestry, Syracuse, New York

Karin Limburg has a new master's student, Chris Nack, who just received a National Estuarine Research Reserve fellowship in the Hudson River to study habitat suitability for larval American shad. The shad population has dropped so low in the Hudson that the NY Department of Environmental Conservation had to shut down the fishery...for the first time in history. So, there is a lot of interest in determining many things related to recovery of the population. Chris Nack not only did his undergraduate degree at ESF; he's

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Section Officers

HELP US UPDATE OUR RECORDS...

Verify your email and postal address with our Secretary.

Southern Region

Claire Paris

From: Jeff Govoni, NOAA Center for Coastal Fisheries and Habitat Research, Beaufort, North Carolina

We continue to work on the abundance, distribution, and relevance to the fish population recruitment of cyclonic, mesoscale eddies within the Charleston Gyre region off the southeastern US. The Charleston Gyre region is characterized by a continuous series of cyclonic eddies that spin-up and propagate northeastward before decaying or coalescing with the Gulf Stream (Govoni and Hare 2001). These eddies are also important pelagic habitat for larval fishes. As revealed in a recent paper (Govoni et al. 2010), the feeding of larval fishes can be enhanced within these eddies by higher primary and consequent secondary production of zooplankton, and this enhanced feeding can register in enhanced survival and recruitment. Currently under investigation by Jeff Govoni and Jon Hare is an Eulerian view of habitat utilization by larval fishes in these eddies, which will be followed by a Lagrangian view of larval fish distribution that will address dispersion, retention, and connectivity. Recruitment of larval fishes is an important determinant of the fisheries production of ecosystems. The Southeastern Atlantic Bight coastal ecosystem between Cape Hatteras, North Carolina, and Cape Canaveral, Florida, is recognized by NOAA as an ecosystem of concern requiring proper management that is predicated on sound scientific information.

Publications:

Govoni, J.J., and J.A. Hare. 2001. The Charleston Gyre as a spawning and larval nursery habitat for fishes. Pages 123-136 in G.R. Sedberry, editor. Island in the stream: oceanography and fisheries of the Charleston Bump. *Amer. Fish. Soc. Symp.* 25, Bethesda, MD.

Govoni, J.J., J.A. Hare, E.D. Davenport, M.H. Chen, and K.E. Marancik. 2010. Mesoscale, cyclonic eddies as larval fish habitat along the southeast United States shelf: A Lagrangian description of the zooplankton community. *ICES J. Mar. Sci.* 67:403-411.

Pacific Rim Region

Iain Suthers

From: University of New South Wales and Sydney Institute of Marine Science, Sydney, Australia.

Do Cold-Core Eddies off Eastern Australia Provide Favourable Habitats for Larval Fish Growth and Survival?

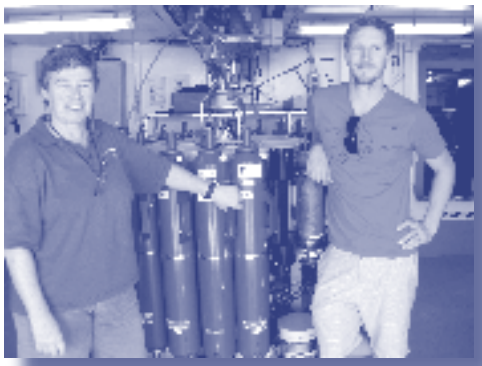
A Ph.D. research project by Josh Humphries, Iain Suthers, Jason Everett, and Mark Baird.

The East Australian Current is a current of eddies off the New South Wales (NSW) coast, and creates further eddies as it separates around 32ºS and heads east towards New Zealand. Depending on their relationship with the shelf, these eddies may entrain water from the continental shelf and observed on at least one occasion to support high densities of post-flexion larvae compared to the similar water masses on the shelf. During the development stage, the sub-surface structure of cold-core eddies is typically characterised by doming of the isotherms and isopycnals. Doming of density surfaces may lift nutrients into the euphotic zone, leading to an increase in new production in nutrient-limited phytoplankton communities. This may result in increases in productivity of secondary consumers, such as zooplankton, fish larvae, and later stage fish larvae, which prey on secondary consumers. During this study we will deploy autonomous ocean gliders into coastal cold-core eddies off NSW. Gliders are buoyancy driven vehicles, capable of extended observation missions of up to 5 months. They measure vertical profiles of temperature, salinity, oxygen and 3 bio-optical properties: chlorophyll-*a* fluorescence (i.e. phytoplankton biomass), coloured dissolved organic material (CDOM) fluorescence, optical backscatter (660 nm) from the surface down to depths of 1000 m. Gliders will allow us to make high resolution observations of the vertical physical structure and chlorophyll biomass of eddies. Glider observations will help to improve our understanding of the physical function of cold-core eddies and their effect on primary production in our region. During two research voyages we will sample larval fish as well as their bio-optical properties from eddies and adjacent coastal waters. Comparisons of abundance, diversity, growth rates and survival rates of larvae will be made between the two habitats to test the suitability of cold-core eddies as 'nursery' grounds. We aim to link episodic recruitment events and cold-core eddy formation to develop a better understanding of the oceanographic contribution to fisheries yield. In this regard, these processes may be similar to those observed for the Kuroshio or the Gulf Stream.

From: Lynnath Beckley, Murdoch University, Fremantle, Western Austrlia

At Murdoch University in Fremantle, Western Australia, we have recently expanded beyond our west coast work on larval fish assemblages associated with the Leeuwin Current and its eddies to the vast, unexplored northern part of Australia. In April/May 2010 we spent three weeks aboard the RV Southern Surveyor on a multi-disciplinary voyage to examine pelagic productivity in the Kimberley region. Large river systems are responsible for turbid inshore water and, offshore along the edge of the shelf, there are remarkable coral atolls. Massive tides (10+ m) and internal waves are also features of the region. We investigated the larval fish and macro-zooplankton assemblages using bongo nets, neuston net, and a multiple-opening-and-closing EZ net along five cross-shelf transects. Sorting of the samples is underway and is revealing larvae of a remarkable diversity of coastal teleosts as well as many oceanic species. We also collected samples to contribute to a food web study investigating the influence of fluvial drainage and sources of nitrogen.

In general, during the cruise we had pretty calm conditions but sea temperatures were extremely high (>30ºC). The multidisciplinary sampling included standard oceanographic measurements, ADCP profiling, nutrients, chlorophyll, primary production and nitrogen uptake work, zooplankton, and larval fishes. We also deployed an oceanographic mooring at the shelf edge for the duration of the cruise and did many *in-situ* measurements



Lynnath Beckley and Dave Holliday on board the good ship Southern Surveyor.

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

with seawater buffers and checked with the seawater certified reference materials (supplied by Andrew Dickson, Scripps Institution of Oceanography). Water samples for DIC and alkalinity were also taken every week for the calculation of the total carbonate chemistry. Sea water was supplied into the tanks from a 40-m-deep water intake near the station.

Fertilized cod eggs, obtained from the Institute of Marine Research Parisvatnet Field Station, were incubated in mesh-bottomed buckets floating inside each mesocosm tank, allowing water exchange. Adult, ripe herring from Lindåspollene in western Norway were stripped and the eggs spread onto glass plates for fertilization. The plates were suspended in the middle of each mesocosm for egg incubation. Hatched larvae of cod and herring were redistributed between replicate tanks in each treatment level to equalize the number of larvae between tanks. Additionally, control larvae that were not fed were kept in floating buckets inside the tanks in order to monitor the overall condition of the eggs used and to check whether starvation has a synergistic effect with acidification on the larvae. All other larvae were fed with natural zooplankton, filtered over a 24-hour period from the fjord, maintaining a density of 2000 zooplankters per liter.

Stripping of eggs from a mature female herring into the glass plates.

Daily water parameters measured included temperature, salinity, pH, and dissolved oxygen. Samples for DIC, alkalinity, major and trace elements, NH_4, and fjord water nutrients from 0- and 50-meter depths were taken on a weekly basis. Flow rate, lux, phytoplankton and tank nutrients were also measured. When algae started to grow at the side and bottom of the tanks, regular cleaning of the tanks was done by scraping the algae and siphoning the bottom water after the algae had settled.

The larvae were sampled twice during the first two weeks and subsequently once a week. To obtain samples throughout the water column, a PVC-pipe sampler was

Natural zooplankton is filtered daily using the Hydrotec filter system.

used. Point sampling was later implemented when it became harder to catch the larvae. Each larva was photographed, kept in individual eppendorf vials at -80ºC. Extra samples were also collected for other colleagues, including Dr. Thorsten Reusch's group studying gene expression at IFM GEOMAR (BIOACID project), , BIOACID/ AWI Dr. Magnus Lucassen's group studying acid-base regulation at AWI (BIOACID project), and Dr. Eniko Kadar and Dr. Steve Widdicomb's group working with histology in the EPOCA project.

The swimming behaviour of cod and herring larvae was observed using silhouette video-based photography, which uses a three-dimensional motion tracking and move path analysis. These behavioural studies were made possible through cooperation with Dr Howard Browman, at the Sensory Biology and Behaviour Group laboratory in the Institute of Marine Research Austevoll Research station. Cod larvae were observed at 12 and 27 days post hatch (dph) while herring larvae were observed at 34 and 40 dph.

Silhouette video photography setup at IMR Austevoll Research Station.

The experiment was a large scale operation, and relied on help from many people. We are all grateful to the following people for making the experiment a success:

At UiB Bio: Audrey Geffen, Arild Folkvord, Arne Johannessen, Frank Midtøy, Vibeke Lokøy, Mei-Yu Chang, Knut Wiik Vollset, Oddbjørn Seljeset, Tina Oen, Rommel Maneja.

At UiB Bjerkenes Centre: Richard Bellerby, Solveig Kringstad.

At Espegrend Marine Station: Agnes Aadnesen, Tomas Sørlie, Halvdan Gjertsen.

At IFM-GEOMAR: Catriona Clemmesen, Andrea Frommel , Helgi Mempel.

At IMR Austevoll: Howard Browman, Yuichi Fukunishi, Anne Berit Skiftesvik, Caroline Durif, Reidun Bjelland.

At IMR Parisvatnet: Haakon Ottera.

At IMR Bergen: Jane Møgster Strømstad §

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

also a 3rd generation Hudson River shad fisherman. In particular, his grandfather was an iconic commercial fisherman, irascible but passionate, whom everyone knew. Karin is excited to have Chris as a student, working on shad.

Ken Able and Mike Fahay report that they have finished proofing the galleys for their book (*Ecology of Estuarine Fishes, Temperate Waters of the Western North Atlantic*) and it is due to be published this summer or early fall (see Publications, p. 6). §

Pacific Rim Region...cont'd from p. 3

to examine the optical properties of the water in the region in order to ground truth remote sensing products. With the dramatic expansion of offshore oil and gas developments in the region, it is imperative that we understand the pelagic ecosystem in one of the most understudied parts of the Australian EEZ.

The Kimberley cruise was followed immediately by one off the Ningaloo region, northwestern Australia, which was largely focussed on the headwaters of the Leeuwin Current. A good set of larval fish samples was collected to supplement our earlier Leeuwin Current work.

In July, we go to sea again to work on rock lobster phyllosoma larvae. There has been a dramatic decline in recruitment in this major fishery (see www.fish.wa.gov.au/docs/pub/PuerulusSettlement/index.php?0405) and our study is to try and understand the biological oceanography of these larvae just prior to the period when

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People

New Northeast Region Representative

Mark Wuenschel writes: I am handing over duties as Northeast Region Representative for *STAGES* to Dave Richardson of the Northeast Fisheries Science Center Narragansett Laboratory. I have enjoyed communicating the activities of Northeast Region ELHS members for the past few years. Thanks to all those that have provided items during my term. I am sure Dave will do a fine job wrangling items for the newsletter.

For those that do not know Dave, he first started working on larval fishes in 2001 as a Ph.D. student in the laboratory of Dr. Robert Cowen at the University of Miami's Rosenstiel School of Marine and Atmospheric Sciences. Dave's initial project involved identifying leptocephalus larvae that he had collected around the island of Barbados. He then transitioned to working on an ichthyoplankton sampling project in the Straits of Florida. His specific research addressed the spawning habitat of large pelagic species, including billfish and tunas. At the end of 2007 Dave finished his dissertation and moved to Rhode Island to begin a post-doc with Jon Hare at the Northeast Fisheries Science Center. The initial objective of this post-doc was to develop a methodology to generate indices of larval abundance that could then be incorporated into the stock assessments. He subsequently began to address the mechanisms underlying the out-of-phase multi-decadal population cycles in Atlantic herring and sand lance. In the past year Dave was hired on as a Research Fisheries Biologist in the Northeast Fisheries Science Center Oceanography Branch. This branch is responsible for the long-term monitoring of ichthyoplankton and zooplankton on the northeast United States continental shelf, monitoring that has been ongoing since 1971.

Dave's contact info:

David Richardson
NEFSC/NMFS/NOAA,
28 Tarzwell Drive
Narragansett, RI 02882
Telephone: 401-782-3222
Email: David.Richardson@noaa.gov §

ELHS Recognizes Holts' Careers

Congratulations to Joan and Scott Holt on their retirement! At the annual business meeting held in Santa Fe, New Mexico this year, the Section marked the occasion with the following resolution.

Resolution

Whereas G. Joan Holt and Scott A. Holt have been regular attendees of the Larval fish Conferences for 30 years, and

Whereas they have made numerous scholarly presentations that have advanced our understanding of the early life history of fishes, and

Whereas they have served the Early Life History Section of the American Fisheries Society with hard work in elected and appointed offices for many years, and

Whereas Scott retired from the University of Texas Marine Science Institute in 2009 and Joan will retire from the same institution in 2010, therefore

Be it resolved that the members and affiliates of the Early Life History Section of the American Fisheries Society recognize and thank Joan and Scott Holt for their long-standing contributions that have advanced our field of research and our organization, and the Section wishes them happy trails in their retirement. §

Student awards...cont'd from p. 1

Congratulations, also, to José Fernando Méndez-Sánchez, winner of the 2010 John H.S. Blaxter Award for the best student poster presented at the 34th annual Larval Fish Conference. Fernando's poster, entitled "High larval vulnerability of the Toluca silverside, *Menidia riojai* (Antheriniformes: Atherinopsidae): A semelparous, threathened, and endemic species" was co-authored by M.V. Garduño-Paz and G. Enríquez-Marín. Fernando is a Ph.D. student at the University of North Texas in the Department of Biological Sciences.

Congratulations to Jerome, Fernando, and Trebvor, their co-authors, and all the students who competed for these prestigious awards. Special thanks to Grace Klein-MacPhee, Elaine Calderone, and Jon Hare for chairing the awards committees. §

Winners of the auction for the honor to have the LFC flag for the next year are joyous over their prize. Photo: H. Browman

Jon Hare awards the 2010 John H.S. Blaxter Award for best student poster to Fernando Méndez-Sánchez. Photo: H. Browman

Publications

Available soon: *Ecology of Estuarine Fishes, Temperate Waters of the Western North Atlantic*

By Kenneth W. Able and Michael P. Fahay

To be published by Johns Hopkins University Press

This comprehensive reference details the life history and ecology of the fish species that occupy the estuarine and coastal habitats along the eastern United States and Canada.

Kenneth W. Able and Michael P. Fahay draw on their own studies and previously published research to summarize and synthesize all the known facts about the ecology of 93 species of fish that inhabit the temperate waters of the Western Atlantic. Presented in individual chapters, the species accounts include complete information about each fish's distribution, habitat use, reproduction, development, migratory patterns, prey, and predators and other natural enemies. The species accounts are illustrated and include life-cycle calendars, tables, and charts highlighting key information. Introductory chapters provide the general characteristics of the temperate ichthyofuana and explain the authors' methodology.

Featuring new information based on more than 76,000 samples, novel long-term data, and an exhaustive analysis of more than 1,800 references, this invaluable resource is the most complete compendium on estuarine fishes of the Western North Atlantic.

"No one else could have written this book. I am amazed by the depth and range of knowledge demonstrated. This synthesis is a major contribution to estuarine fish studies." -- David H. Secor, University of Maryland Center for Environmental Science

Kenneth W. Able is the Distinguished Professor of Marine and Coastal Sciences at Rutgers, the State University of New Jersey, and the author of numerous journal articles. Michael P. Fahay is a biologist with the National Marine Fisheries Service. Fahay and Able coauthored The First Year in the Life of Estuarine Fishes in the Middle Atlantic Bight. §

Other Recent Publications

Ecology of Anguilliform Leptocephali: Remarkable Transparent Fish Larvae of the Ocean Surface Layer. M.J. Miller. Published by Aqua-BioScience Monographs. TERRAPUB. 2009.

Advances in Early Life History Study of Fish. C. Clemmesen, A.M. Malzahn, M.A. Peck, and D. Schnack, eds. *Scientia Marina*, volume 73S1, Supplement 1. Consejo Superior de Investigaciones Cientificas. 2009.

Reproductive Biology and Early Life History of Fishes in the Ohio River Drainage

– Volume III, Ictaluridae – Catfish and Madtoms. T.P. Simon and R. Wallus. Published by CRC Press. ISBN 0849319196. 2003; 232 p.

– Volume IV, Percidae – Perch, Pikeperch, and Darters. T.P. Simon and R. Wallus. Published by CRC Press. ISBN 978-0-8493-1920-4. 2006; 648 p.

– Volume V, Aphredoderidae through Cottidae, Moronidae, and Sciaenidae. Edited by R. Wallus and T.P. Simon. Published by CRC Press. ISBN 978-0-8493-1921-1. 2006; 360 p.

– Volume VI, Elassomidae and Centrarchidae. Edited by R. Wallus and T.P. Simon. Published by CRC Press. ISBN 978-0-8493-1923-8. 2008; 472 p.

Plankton. A Guide to Their Ecology and Monitoring for Water Quality. I.M. Suthers & D. Rissik. Published by CSIRO Publishing, 272 pp. 2009. ISBN: 9780643090583.

Manual of recommended practices for modelling physical – biological interactions during fish early life. E.W. North, A. Gallego, and P. Petitgas, Jr., eds. ICES Cooperative Research Report No. 295. 111 pp. 2009. ISBN: 978–87–7482–060–4.

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.

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.

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.

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. §

Thanks to Section Webmaster Jeff Buckel, the ELHS website has a fresh, new look. Visit www.elhs.cmast.ncsu.edu and see for yourself!

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

The keynotes were wonderful and really accentuated the theme sessions. The talks covered a broad range of disciplines, which I find one of the most compelling aspects of the Larval Fish Conference: ecology, fresh water, physiology, marine, genetics, oceanography, and more. The banquet was at a beautiful restaurant on Canyon Road with tapas and live music. The Local Committee also raised a lot of money and most, if not all, students received travel support. I also got a bowl of menudo one morning for breakfast – a good way to start any day, particularly one at an LFC. So a huge thank you to Ione Hunt von Herbing, Joan Holt, Mallory Burdick, and the rest of the Local Organizers for a job well done.

One issue which overshadowed the LFC was the oil spill in the Gulf of Mexico. Unfortunately, as I write, millions of gallons of oil continue to leak into the Gulf of Mexico. I have talked with a handful of Section members in the Gulf and it sounds hectic, to say the least. However, the spill points out that there is a long-term need for information on the effect of oil and dispersants on the early life history stages of fishes and shellfish. A lot of work was done after the Exxon Valdez spill, but there remain a lot of questions specific to the Gulf of Mexico. Bluefin tuna spawn in the Gulf during the spring. A wide range of species use the region's estuaries and wetlands as juvenile nurseries. There are two Threatened/Endangered fish species in the Gulf (gulf sturgeon and smalltooth sawfish) and several Species of Concern (dusky sharks, night sharks, tiger sharks, Warsaw grouper, Nassau grouper, and speckled hind). A rich mesopelagic community occurs in the northern Gulf, perhaps with endemic and new species[1]. I could go on, but the point is there are a wide array of species and communities that are being affected by the oil spill. We need to understand the effect of oil and dispersants in general on early life stages from reproduction to spawning. This information is critical from the perspective of seafood safety, population dynamics, community composition, and ecosystem structure and function. I have written similar words in earlier messages about climate change. A challenge for our discipline is to get out in front of these "pressing issues"; to conduct the research today that will address important questions tomorrow. Of course some of our science must be reactive, but we must also devote ourselves to proactive science. Clearly, climate and oil are issues that will be with us for a long while, but what are other issues that we will be responding to in the future?

Speaking of the future, the Section faces some challenges in the coming years. 1) Our finances are uncertain. 2) We have needed to cut back on student travel awards and sponsorship of books, meetings, and workshops. 3) Our membership is decreasing and we still have problems tracking membership. 4) We are struggling with our newsletter – mostly as a result of lack of content. The Executive Committee will need to deal with the first three issues; if you have any ideas please contact Sue Sogard. The fourth issue is something that you can help with. So as you read this make a note – "send update of activities to my Regional Representative" – the reps are listed in *STAGES* and on the website. Also, the Section is conducting a survey and if you haven't responded, please put *STAGES* down and fill out the survey: www.surveymonkey.com/s/SGMBLZC. Your responses will help guide the Section over the next several years. Although the Section faces challenges, we are in good hands under the leadership of Sue and Catriona, the Section still serves an important role, and your involvement is still critical.

For my last closing, thanks to everyone for your Section-related efforts over the past two years, the Santa Fe LFC was great, the oil spill in the Gulf is a tragedy and points out a huge array of early life history research needs, and stay involved - the Section needs you. §

– Jon Hare, President

[1] www.gomr.mms.gov/PDFs/2009/2009-051/25th_ITM_Source_Slide_Shows/1E_06_Ross_slide_show.pdf

Upcoming Events

Flatfish Biology Conference

The 12th Flatfish Biology Conference will be held at the Water's Edge Resort in Westbrook, CT on December 1-2, 2010. This series of conferences has provided opportunities for scientists throughout North America and beyond to present their research and findings in flatfish biology. Conference sponsors include the Dominion Foundation, Southern New England Chapter of the American Fisheries Society, and NOAA Fisheries Northeast Fisheries Science Center. Please refer to www.mi.nmfs.gov/flatfishbiologyworkshop.html for conference information and registration materials. A call for papers has been issued with titles to be submitted by July 23 and abstracts by August 27. Contact Renee Mercaldo-Allen, Conference Chair, at rmercald@clam.mi.nmfs.gov for further details. §

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they metamorphose into puerulus larvae and return to inshore nursery areas along the Western Australian coast. In addition to surveying the horizontal and vertical distribution patterns to validate modelling work, we intend to carefully examine feeding of the larvae and relate this to potential prey in the water column through feeding experiments carried out on board.

So, it is all aboard for the larval fish lab in Fremantle! §

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.

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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.

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