STAGES

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

Volume 27, Number 1 | Lee A. Fuiman, Editor | February 2006

Hurricane Rita Changes Larval Fish Conference Venue

We were all counting on enjoying the serenity of the Gulf Coast of Mississippi during the 30th annual Larval Fish Conference in 2006...and then came Hurricane Katrina. Soon after the humanitarian needs were attended to, ELHS President Howard Browman began looking for an alternative venue. Thankfully, the organizers of this year's annual meeting of the American Fisheries Society agreed to fit our conference into their program, which will be held in Lake Placid, New York, 10-14 September 2006.

The LFC will be held at the Lake Placid Hilton, which is about a 10-minute walk from the hotel at which the main AFS meeting is being held. The goal of the LFC organizers is to accommodate all papers. Owing to the circumstances, there will be no special theme sessions, but they will try to group presentations by subject content. They are encouraging any contribution that focuses on the early life history stages of fishes.

The LFC will be organized within the AFS conference as a Symposium, which requires that abstracts be submitted to the AFS Symposium call (open from mid-February until early March 2006) and NOT the Contributed Session call.

Deadlines are approaching fast. Abstracts are due 3 March 2006. More details can be found at www.larvalfishcon.org. §

Inside this issue

ELHS Back Then

5 years ago: Art Kendall retires from National Marine Fisheries Service after 30 years, but becomes President of ELHS.

10 years ago: Section authorizes funds to support student travel to 20th LFC in New Orleans and subsequent meetings.

20 years ago: Lee Fuiman and Dave Jude transfer Bob Hoyt's 13,717-record bibliography from an Apple IIe computer to a mainframe computer for online searches.

25 years ago: Membership reaches 242 (plus 14 newsletter subscribers), sufficient to be granted a voting position on AFS Executive Committee.

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

May 5, 2006

President's Message

Here is my usual status report on the various initiatives that I have been bringing to your attention in the last issues of *STAGES*.

LFCs. As the lead story in this issue of STAGES announces, the 30th annual LFC is set for Lake Placid, New York. The 31st annual LFC will be in St. John's, Newfoundland. Visit www.larvalfishcon.org for details!

Additions to the Larval Fish Conference website. Following from member feedback, several initiatives are being considered. 1) a "photo album" page for each LFC to which participants can post their photos; 2) secure access to membership profiles so that changes and additions can be made by Section members online; 3) online balloting for the election of ELHS officers (see the next item). Please let me know if you have any other suggestions.

Online balloting for the election of Section officers. We are now implementing an addition to the LFC website that will permit secure anonymous online balloting for the election of ELHS officers. This should be available by Spring 2006.

If you are interested in serving as an ELHS officer, or would like to nominate someone, please contact Chris Chambers (Chair, AFS-ELHS Nominations and Mail-Ballot Committee) at: chris.chambers@noaa.gov. Specifically, within the next 12-18 months, the Section will need a Secretary-Elect, Treasurer-Elect, and President-Elect. Please consider serving!

Standing, Sessional, and Ad-Hoc Committees. We still need volunteers for

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News from the Regions

Northeast Region

Motz Grothues

from: Rutgers University Marine Field Station

With the Summer and Fall field seasons coming to a close, researchers at the Rutgers University Marine Field Station (RUMFS) took stock of some of the early life history efforts going on at and around the Station…

Long-term ichthyoplankton sampling

Larval fishes have been sampled by RUMFS at Little Egg Inlet, New Jersey, weekly and year-round from 1989 to the present and by the NOAA Center for Coastal Fisheries and Habitat Research at Beaufort Inlet (North Carolina) from November to April since 1985 in order to address a number of recruitment-related issues. Together, these two time series form one of the longest running data sets available for estuarine-dependent fish larvae along the East Coast of the United States and have provided the basis for a collaborative effort (Ken Able, Mark Sullivan, Roland Hagan – NJ; Gretchen Bath-Martin, Jeff Buckel, Jon Hare, Harvey Walsh – NC) investigating mechanisms of larval ingress for a variety of species.

Ingressing fishes are collected by replicated plankton net sets deployed from bridges at each location (Little Sheepshead Creek, NJ; Pivers Island, NC). Although initially implemented independently, a number of characteristics shared by the two sites and gears imply that the programs are comparable: environmental setting (salinity ranges, proximity to respective inlets, well-mixed water column), mesh size (1 mm), as well as sampling period (nighttime, flood tide).

Recently, researchers have examined hypotheses using combinations of the respective series. Jon Hare and Ken Able revealed that Atlantic croaker (*Micropogonias undulatus*) larvae were rare in East Coast collections during the late 1980s through 1994 but became an abundant component of the samples by the late 1990s, due to a coast-wide warming trend (Hare and Able, in press). Similarly, analysis of American eel (*Anguilla rostata*) ingress has shown a tight coherence between annual glass eel abundance and precipitation (Sullivan et al., in review). This finding, although correlative in nature, agrees quite well with what is already known about eel early life history (i.e., reliance on chemical freshwater odorants for navigation and orientation) and presents a testable mechanism for future study. Ongoing applications using individual or combinations of these datasets include the relationship between summer flounder (*Paralichthys dentatus*) larval ingress and adult abundance, and climate-induced shifts in the abundance of tropical/subtropical strays.

The longer-term vision of this work is to establish an integrated network of coordinated ingress sampling sites (CCOR: Coastal Collaboration On Recruitment), with additional locations coming online in subsequent years (Maryland, Delaware, South Carolina). As an encouraging sign of things to come, the University of Maryland

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Pacific Rim Region

Iain Suthers

The Sydney Harbour Institute of Marine Science (SHIMS) was launched on 22 November 2005 by the Federal Minister for Environment & Heritage, Senator Campbell. Four Sydney universities have teamed together (University of Technology Sydney, University of New South Wales, Macquarie University, and University of Sydney) to lease four buildings including 300 m^2 for a prospective seawater lab, a prospective laboratory (400 m^2), offices (377 m^2), and a 30-seat lecture theatre. The facility is based at a former Royal Australian Navy site at Chowder Bay on the foreshore of Sydney Harbour. Most of the buildings are heritage listed, showing 150 years of naval activities, especially of course during both world wars.

Section Officers

The site offers safe and convenient access to marine habitats in one of the most spectacular and intensively used ports in the world. On site are dormitories for about 200 students, but the accommodation provider has yet to be appointed. Key research areas will be the ecology of ports and harbours, coastal oceanography and geomorphology, biotechnology and bio-prospecting, and urban fisheries science. We currently have a shoe-string budget, at present paying for the lease and a chief operating officer. Some funds have been secured for the seawater system from the Australian Research Council. The Scientific Advisory Committee consists of Peter Steinberg (chair), Iain Suthers, David Booth, Peter Ralph, Rob Harcourt, Jane Williamson, Ross Coleman, and Gavin Birch. We hope to have many overseas visitors here in the future! §

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

Eastern Shore (Joey Love, Branson Williams) recently received funding to continue their pilot Ocean City inlet ichthyoplankton sampling effort. Bringing these and additional sites together in formal analysis will provide a unique opportunity to examine mechanisms of recruitment across connected, large marine ecosystems.

Coastwide recruitment dynamics of bluefish

Bluefish (*Pomatomus saltatrix*) is an ecologically and commercially important fish distributed along the East Coast of the United States, but it has declined in abundance in recent decades. Bluefish undergo oceanic spawning in the South Atlantic and Middle Atlantic Bight, with young-of-the-year using nearshore habitats. In an effort to determine patterns of habitat use in the ocean/estuaries and their influence on population dynamics, this current collaborative effort includes standardized sampling over a broad geographic scale with multiple PIs, post-docs, and students: New York (David Conover), New Jersey (Ken Able, Mark Wuenschel), Delmarva (David Secor), North Carolina (Thomas Lankford, Jeff Buckel), and Florida (Francis Juanes). Coastwide objectives of the project include comparing densities of Spring, Summer, and other YOY bluefish cohorts between these different regions. Specific objectives are to determine the seasonal, ontogenetic, and depth patterns of occurrence of all cohorts of YOY bluefish in estuarine, surf-zone, and inner continental shelf habitats.

The program includes sampling with three different gears each month, targeting different early life stages. A fixed frame Methot net is used to sample pelagic juveniles and larvae in surface waters of the inner continental shelf. A 30-m otter trawl

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Southern Region

Tom Lankford

from: NOAA Southeast Fisheries Science Center

NOAA-Fisheries' Southeast Fisheries Science Center on Virginia Key, Miami, employs a small group of scientists investigating several aspects of the early life history of fishes – the Early Life History (ELH) Team. The group is led by Dr. John Lamkin, together with Dr. Bill Richards, Dr. Monica Lara; Dave Jones, Trika Gerard, and Samantha Whitcraft. In addition Jack Javech serves as the group's scientific illustrator, NOAA Corps LTJG Natasha Davis serves as boat operations coordinator, and several University of Miami undergraduates serve as interns.

NOAA-SEFSC personnel (left to right): Laura Carrillo (visiting scientist from Chetumal, Mexico); Annie Morgan (UM intern), Yesdim Donali (UM intern), John Lamkin (NOAA Fisheries), Samantha Whitcraft (UM-CIMAS/MS candidate UM), Luke Logan (UM intern), Trika Gerard (NOAA/PhD candidate Florida A & M), Monica Lara (UM-CIMAS), Dave Jones (PhD candidate UM), Estrella Malaca (UM intern), Bill Richards (NOAA Fisheries), Jennifer Hodges (UM intern).

The chief goal of our research is directed towards an improved understanding of the recruitment processes of the young stages of fishes, principally reef fishes. We also have an interest in large pelagics, especially bluefin tuna. Recruitment is complicated and requires interdisciplinary research as multiple factors play important roles. In southern Florida, the inshore bays serve as nursery areas for many of the species that later inhabit offshore coral reefs. Additionally, spawning takes place in the reef environment and the ELH stages are greatly influenced by offshore and inshore currents. Interestingly, it is apparent that climatic changes like the El Niño Southern Oscillation cycles also affect ELH recruitment together with events controlling the instability of the Loop Current in the Gulf of Mexico. Upstream events in the Caribbean Sea also greatly influence recruitment, as does local fishing, in that some fishing pressures have led to adult population declines. In recent years, the development of marine protected areas (MPAs) allowed some recovery of populations and this dynamic may also influence ELH recruitment. All of our research is geared to understand this complicated situation with a future goal of developing a working model that would allow eventual estimation of population sizes.

Understanding how to identify larval fishes is critical to investigating ELH stages, and for the past few years the group has focused much attention to helping Bill Richards complete his guide on the identification of ELH stages of fishes entitled *Early Stages of Atlantic Fishes: An Identification Guide for the Western Central North Atlantic* (see p. 8 of this issue of *STAGES*). This two volume work covers all species with pelagic ELH stages from this vast area. Chapters are devoted to each family and include lists of species, accounts/identification characteristics, distributions, illustrations of known ELH stages, and an extensive bibliography. Seventy-one scientists from the U.S. and other countries contributed as authors or co-authors of the many chapters and many more peer reviewed chapters and helped in many additional ways.

Since the group's inception, a major field collection program has been carried out to understand recruitment of ELH stages into Florida Bay

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Potential ELH recruitment and transport from the Meso-American reef track and influences of the Loop.

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

and the processes influencing the coral reef ecosystem in the Florida Keys. Recently, the program expanded internationally through a cooperative project with researchers in Mexico to measure upstream influences.

One of our current projects utilizes rare earth elements in otoliths. Commercially, recreationally, and ecologically important snapper species are believed to migrate to reefs from juvenile nursery areas such as seagrass and mangrove habitats including those in Florida Bay and the lower Florida Keys. Little is known about the nature of these nursery areas (physical characteristics, seasonality, quality, persistence), the migration corridors that exist between nursery and reef, and the timing of these migrations. Using an analysis of trace elements in the otoliths of gray snapper, we are able to identify the nursery areas in which each individually-collected juvenile resided. Because of the existence of a unique chemical signature in the otoliths of these fishes, corresponding to each of five nursery regions, we are able to correctly identify the region from which a fish was collected with a success rate of greater than 80%. In 2005, we added stable isotope analysis to this process, and thereby, brought our success rate to nearly 100%.

We are currently analyzing the otoliths of adult gray snapper collected on the reef in order to match them to one of the five nursery regions. In this way, we will be able to define the regions and habitats of particular importance to fishes successfully recruiting to the Florida reef tract. Also in 2005, we began analysis of otoliths of other snapper species including yellowtail and schoolmaster. We have been collecting juvenile snapper and will collect adults from many of the same sites each year. We will look for temporal variation in the chemical signatures to investigate shifts in habitat use, migration patterns, or chemistry at a single site indicating a change in conditions at any of these locations. Year-to-year changes in the proportion of adults using different habitats and/or regions as nurseries can also be investigated. These investigations are undertaken so that our understanding of the life-history cycle including habitat use and migrations is not based on a merely static and limited data set, but instead considers natural variability as intrinsic in such a system. The resulting information may be useful in long- and short-term policy and decision-making in the design, establishment, and maintenance of protected areas networks.

Ecosystem research on the links between habitats, and particularly their function as sources and destinations of recruits, is a key to the long-term monitoring and effective management of these areas. This is of particular importance given the recent efforts to restore Florida Bay and the establishment of fully protected marine ecological reserves within the Florida Keys National Marine Sanctuary (FKNMS) and the Tortugas Ecological Reserve. The South Florida Coral Reef Initiative calls for the establishment of additional no-take reserves within these MPAs, and we believe that only with effective identification and protection of sources of recruits can we ensure the effective function of MPAs as reef fish sanctuaries. One of the greatest infractions occurring in the parks and sanctuaries in this region is the taking of undersized snapper from the bays and reef and, in general, snapper species throughout South Florida are considered to be under-managed and over-fished. Our work speaks directly to this situation as information on key nursery areas can help guide decisions, such as where to establish no-take and other protected areas that may link the habitat requirements of the life-history stages of such species.

A new project we have initiated uses micro-acoustic tags developed for juvenile salmon survivorship studies to examine the habitat-use patterns of juvenile reef-associated gray snappers in the FKNMS. The current availability of customized acoustic arrays that function in shallow, near-shore waters and micro-acoustic tags for small juvenile fish may provide useful tools for determining the early life habitat requirements of commercially valuable, coral reef-associated snapper species.

Micro-acoustic tag at 0.65 g. dry wt.; 0.39 g wet wt.; 5.5 mm x 19 mm.

The overall objective is to gain a clearer understanding of the early life-history habitat protection requirements for gray snappers, focusing on juveniles. The specific objective is to begin a micro-acoustic tagging study that will use cutting-edge, customized acoustic arrays and micro-acoustic tagging technology to focus on tracking small, <80 mm, juvenile snapper movements and home-ranges associated with small-scale habitat areas in the Western Sambo Ecological Reserve, FKNMS. In Western Sambo Ecological Reserve's patch reefs and adjacent hard-bottom and mangrove habitats, we will set up acoustic arrays to track site fidelity of these young fish within and between habitats via surgically implanted micro-acoustic tags. Understanding site fidelity, home ranges, and habitat-use patterns of juvenile reef fishes, both within and between fully protected areas and non-protected areas, is essential to understanding the effectiveness of marine reserves.

Several other research projects are underway by our research team. Bill Richards continues research on larval bluefin tuna distribution and abundance in the Gulf of Mexico where these data are used by the International Commission for the Conservation of Atlantic Tunas (ICCAT) to index population trends of this valuable resource. Bill and John Lamkin are compiling bluefin larval data sets to examine the past 30 years of changes and trends from sampling in the Gulf of Mexico – the primary spawning area for bluefin in the western North Atlantic. Bill's Ph.D. students, Dave Jones and Elizabeth Maddox, are nearing completion of their dissertations. Dave's dissertation focuses on recruitment mechanisms of labroid larvae based on plankton collections made in the Straits of Florida as part of the Southeast Florida and Caribbean Recruitment Program (SEFCAR). He successfully defended his dissertation and is now completing the final version of the manuscript. Elizabeth's dissertation details results of her work with channel nets in South Florida and the Turks and Caicos Islands. She successfully defended in December 2005. Monica Lara is heading up our research using rare earths from otoliths as well as field work in Mexico with Dave Jones. Monica is advising a Ph.D. student from Florida A & M University, Trika Gerard. Trika's dissertation also focuses on rare earth elements of otoliths. Samantha Whitcraft recently joined the team to coordinate our micro-acoustic tagging project. She is currently completing her master's degree at the UM Rosenstiel School of Marine and Atmospheric Sciences and has begun her Ph.D. studies at Florida International University under the advisement of John Lamkin.

The team's website, www.sefsc.noaa.gov, has additional details of our projects. In addition, we have digitized all the illustrations from the book *Ontogeny and Systematics of Fishes* that were deposited at the Southeast Fisheries Science Center since the book's publication in 1984. They can be accessed and downloaded at: www.sefsc.noaa.gov/ich/ich_home_sh.jsp. Many of Javech's original drawings are also available on this site.

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Methods Workshop

Collection, Processing, and Identification of Freshwater Fish Larvae

A 2-day workshop focused on procedures used in the collection, processing, and identification of freshwater ichthyoplankton will be held on Saturday and Sunday, 9-10 September 2006 in conjunction with the 136th Annual Meeting of the American Fisheries Society and the 30th Annual Larval Fish Conference being held in Lake Placid, New York. The workshop will be held on the campus of Paul Smith's College situated on Lower St. Regis Lake, about a 30-minute car ride from Lake Placid through the beautiful Adirondack Mountains.

This workshop is targeted towards students, agency professionals, consulting biologists, and academicians desiring familiarity with sampling methods, gear types, sample processing, and tools useful for the identification of freshwater ichthyoplankton. The workshop will provide participants with hands-on experience using different ichthyoplankton sampling gear, sorting and processing samples, and using dichotomous keys and other tools to identify larvae. The workshop will consist of a series of short lectures, field demonstrations, and laboratory exercises to introduce and provide participants with practical experience working with fish larvae.

Workshop instructors include:

Dr. Nancy A. Auer, Associate Professor, Department of Biological Sciences, Michigan Technological University, 1400 Townsend Drive, Dow 732, Houghton, MI 49931; Phone: 906-487-2353; e-mail: naauer@mtu.edu.

Dr. David J. Jude, Research Scientist, School of Natural Resources and the Environment, The University of Michigan, 440 Church St., G454 Dana Bldg., Ann Arbor, MI 48109-1040; Phone: 734-763-3183; e-mail: djude@umich.edu.

Dr. Edward F. Roseman, Research Fishery Biologist, USGS Great Lakes Science Center, 1451 Green Road, Ann Arbor, Michigan 48105; Phone: 734-214-7237; e-mail: eroseman@usgs.gov.

Dr. Darrel E. Snyder, Research Associate and Collection Curator, Larval Fish Laboratory, Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, CO 80523; Phone: 970-491-5295; e-mail: DESnyder@CNR.ColoState.edu.

Workshop materials, a barbeque social Saturday night, and transportation to and from Paul Smith's College from the Lake Placid Conference Center will be provided as part of the workshop registration fee. Participants will be responsible for purchasing their lunches at the college cafeteria on Saturday and Sunday.

Cost of the workshop is $150 ($125 for students), with an additional $7 ($10 for non-members) for continuing education credits (course is 1.425 CE units). Pre-registration is mandatory through the American Fisheries Society. Class size is limited to 30.

This workshop is sponsored by the Early Life History Section, the Division of Forestry, Natural Resources, and Recreation at Paul Smith's College, and the U.S. Geological Survey Great Lakes Science Center. Additional information can be obtained from Ed Roseman (eroseman@usgs.gov). §

31st Annual Larval Fish Conference

"Larvae on the Rock"

This conference will be held 9-12 July 2007 at the Inco Innovation Centre, located on the campus of Memorial University in St. John's, Newfoundland, Canada.

In addition to contributed paper sessions, four major theme session will cover:

- Physiological ecology
- Dispersal and connectivity
- Maternal effects and phenotypic plasticity
- Linking research with industry and application of knowledge

Organizing committee:

Pierre Pepin, Northwest Atlantic Fisheries Centre, Fisheries and Oceans Canada.

Ian Fleming, Ocean Sciences Centre, Memorial University.

Bob Gregory, Northwest Atlantic Fisheries Centre, Fisheries and Oceans Canada.

Paul Snelgrove, Ocean Sciences Centre, Memorial University.

For further information, contact Pierre Pepin (pepinp@dfo-mpo.gc.ca).

St. John's can be reached via direct flights from London's Heathrow Airport, Newark's Liberty International Airport, and Toronto's Pearson International Airport.

Watch the conference website (www.larvalfishcon.org) for updates soon. §

Southern Region...cont'd from p. 4

from: NOAA Center for Coastal Fisheries and Habitat Research

The recent introduction of the Indo-Pacific lionfish (*Pterois volitans*) into the western Atlantic has raised many concerns regarding ecological effects of invasive marine finfishes. Lionfish, a reef fish with venomous spines, has few known predators in its native habitat and is considered to be established in the western Atlantic. The extent of ecological change that will occur as a result of this introduction continues to be highly speculative. While previous reproductive biology studies have described the biology of other scorpaenids, no reproductive data exist on the lionfish other than field observations of courtship behavior.

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Course Offering

Early Life History of Marine Fishes

A Graduate Course in Larval Fish Identification and Ecology

- Date: 31 July - 15 August 2006
- 3 credits (graduate level)
- Application deadline 1 May 2006
- Costs: $1,425 tuition, plus room/board for course duration ($799)
- Professors John E. Olney (College of William & Mary) & Edward D. Houde (University of Maryland Center for Environmental Science)

This lecture and laboratory course offers a comprehensive view of the biology and taxonomy of early life stages of fishes. These stages, including pelagic eggs, larvae, and newly-transformed juveniles, are abundant and diverse components of aquatic ecosystems. Their small size, dynamic growth and mortality rates, and dependence on ambient environmental factors, including ocean physics, make these stages vulnerable to variability in climate and to stresses of anthropogenic origin. Level of reproductive success in teleosts, termed recruitment, is highly variable and largely dependent on variability in survival of these early life stages. Knowledge of their morphological development contributes to studies of phylogenetic relationships. Ontogenetic data serve to clarify the complex systematics of teleost fishes, the most diverse and largest class of vertebrates. Early life stages often have specialized adaptations to insure survival in stressful habitats. In the laboratory, larvae of 130 families of teleostean fishes are examined and characters useful in identification are presented.

This is a graduate-level course for students with an interest in fish ecology, fisheries science, ichthyology and biological oceanography. It is presumed that students will have some experience and background in those disciplines. Prerequisites include an undergraduate degree in a biological discipline; permission of the instructors is required to be admitted to the course. No more than 15 students will be accepted. The lectures and laboratories will be held at the Marine Science Center of the University of New England. For further information, contact Dr. Olney (olney@vims.edu) or Dr. Houde (ehoude@cbl.umces.edu) or see our website: www.vims.edu/adv/657.

Modelling Workshop

A international workshop on "*Advancements in Modelling Physical-Biological Interactions in Fish Early-Life History: Recommended Practices and Future Directions"* will be held 3-5 April 2006 in Nantes, France. It will evaluate the present state and next steps in the developing field of modeling physical-biological interactions in the early life of fishes. The workshop will focus on recent advances in coupled biological-physical models that incorporate predictions from three-dimensional circulation models to determine the transit of fish eggs and larvae from spawning to nursery areas. These coupled bio-physical models have been applied to gain new insight on how planktonic dispersal, growth, and survival are mediated by physical and biological conditions and have contributed to enhanced understanding of fish population variability and stock structure. For more information go to northweb.hpl.umces.edu/wkamf/home.htm. §

Diadromous Fishes Symposium

A symposium on "*Challenges for Diadromous Fishes in a Dynamic Global Environment*" will be held in Halifax, Nova Scotia, Canada from 17 to 24 June 2007. This symposium will build upon the successful "*Common Strategies of Anadromous and Catadromous Fishes*" symposium of 1986 (AFS Symposium 1) but will have more emphasis on recent alterations to the aquatic environment and the effects that human activities have had on aquatic resources. Meeting information and contacts can be seen at www.anacat.ca or by contacting Alex Haro, S.O. Conte Anadromous Fish Research Center, USGS, 1 Migratory Way, Turners Falls, MA 01376 or call (413)-863-3806. §

THIS WILL BE YOUR LAST ISSUE OF STAGES...

unless you've paid your 2006 dues. Check the expiration date on the mailing label of this issue.

32nd Annual Larval Fish Conference

Catriona Clemmesen has confirmed that the University of Kiel (Germany) will present an offer to host 2008 Larval Fish Conference. Catriona will participate in the 2006 meeting and make her formal offer at the annual meeting of the ELHS Executive Committee. §

World Fisheries Congress

Doug Beard, John Casselman, and Howard Browman have been appointed as The American Fisheries Society's representatives to the 2008 WFC Program Committee. WFC2008 will be held 20-24 October 2008 in Yokohama, Japan (see www.5thwfc2008.com). All ELHS members have an interest in seeing to it that our subject area is well represented and visible at this important meeting. Please let Doug, John, Howard, or any other member of the WFC Program Committee know if you have any suggestions for the program. Be proactive! §

John V. Merriner Retires

John V. Merriner retired 3 January 2006 after 23 years of service to the National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), and 12 years of service to the Commonwealth of Virginia, Virginia Institute of Marine Science (VIMS). John began his career in fisheries science and management in 1970 at the VIMS and the School of Marine Science of the College of William and Mary. John moved on to the Beaufort Laboratory of NOAA Fisheries in 1982.

Hailing from Winchester, VA, John began his higher education at Rutgers, the State University of New Jersey (New Brunswick) from where he took a B.S. in psychology in 1964. He entered North Carolina State University in 1964 and took M.S. and Ph.D. degrees in Zoology in 1967 and 1973. John's master's thesis dealt with the hatching success of induced centrarchid hybrids as a tool for assessing alpha-level systematic relations. John's Ph.D. dissertation was an exhaustive study of weakfish (*Cynoscion regalis*) life history with a management plan for the fisheries prosecuted upon this species in North Carolina. This pioneering management plan appeared well in advance of this now common, typically mandated, practice.

At VIMS, John's work began in the Institute's Advisory Services function, where he worked the anadromous fish program. At the time of a deep depression in striped bass standing stocks, anadromous fish work in Chesapeake Bay meant mainly the management of river herrings, the alosines. Concurrently, John worked in the Environmental Data Base Directory Project that sought to organize and make available environmental data, including data on striped bass abundance and habitat attributes. John became a Senior Marine Scientist and moved into administration at VIMS; he served as Department Head of Ichthyology from 1975 to 1982, and eventually served as Acting Division Chief of the Fisheries Division until his departure in 1982. While at VIMS, John headed active research projects that dealt with early life histories, specifically: entrainment of ichthyoplankton into power plant cooling systems, utilization of submerged aquatic vegetation as habitat for juvenile fishes, and the distribution of larval fishes in the waters in the offing of Chesapeake Bay.

While at VIMS, John served as an Assistant and then Associate Professor in the School of Marine Science at the College of William and Mary. John's voracious reading appetite for all things fishy, along with an encyclopedic knowledge of fishes and fisheries is reflected in the diversity of research problems attacked by his graduate students. John guided nine M.S. students and five Ph.D. students through to degrees in his 12 years in the School of Marine Science. Never domineering, John was a quiet mentor who led by example, using his own workhorse ethic as a standard for his students. Thesis and dissertation topics included, physiological energetics, functional morphology, tropho-dynamics, reproductive biology, toxicant effects at the population level, and comprehensive life-history studies with fishery management implications. Three of his Ph.D. students worked in the early life history of fishes, including juvenile fishes.

In Federal service, John began as Acting Chief of the Fisheries Branch of the NOAA-Fisheries, Southeast Fisheries Science Center's (SEFSC) Beaufort Laboratory; later John moved into the Branch Chief position. In this position, John had oversight of fisheries research programs in Atlantic and gulf menhaden, coastal pelagics, and reef fishes. John served this position until the transition period that cross-walked the then 100-year-old Beaufort Laboratory from NMFS or its predecessor organizations, to NOAA's National Ocean Service. With the transfer complete, John served as advisor to the NOS Center Director for fisheries.

John Merriner is a 41-year member of the American Society of Ichthyologists and Herpetologists, a 38-year member of the American Fisheries Society (Marine Fisheries Section and Early Life History Section), and a 32-year member of the American Institute of Fisheries Research Biologists (AIFRB). John was a former member of the Southeast Estuarine Research Society and Sigma Xi Society.

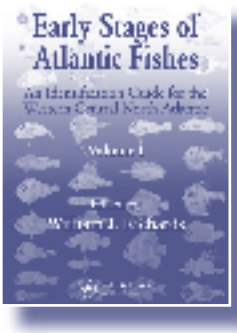
A steadfast advocate of diversity in the workplace, John Merriner promoted education and advancement of women and minorities in fisheries professions. He received the NOAA Equal Employment Opportunity Person of the Year Award in 1999.

Fisheries scientists find their motivation and gratification in many places — a passion for angling, an association with the commercial fishing enterprise, or simply a fascination with chondrichthyans and osteichthyans as evolutionarily successful aquatic vertebrates. John indulged in each of these. John Merriner's true calling, his vocation really, was in the translation and communication of the work of fisheries scientists to fisheries management. John heard the call in high school. His vocation was fulfilled. John published 23 senior authored, and 30 junior authored papers in peer-review journals, and one book chapter. He also was the author of numerous reports to management councils, commissions, and ad hoc committees. John served as the liaison for the Southeast Fisheries Science Center to the South Atlantic Marine Fisheries Council, Gulf of Mexico Marine Fisheries Council, the Caribbean Fisheries Management Council, and the Atlantic States Marine Fisheries Commission. He contributed heavily to several management plans, most recently for red porgy. John received the NOAA Group Adminitrator's Award in 2003 for significantly increasing public confidence in NOAA's assessments of population status for specific marine fisheries in the southeastern United States with the development and application of the Southeast Data Assessment Review process. Pursuant with the communication of fisheries science, John served as Scientific Editor of *Fishery Bulletin* from 1998 to 2002 and as Production Editor of *Briefs*, the newsletter of AIFRB from 1999 to 2005.

Fisheries scientists and fisheries managers, as well as students, colleagues, and friends, will sorely miss John Merriner and his tireless efforts. §

— Jeff Govoni, ELHS Historian

Publications



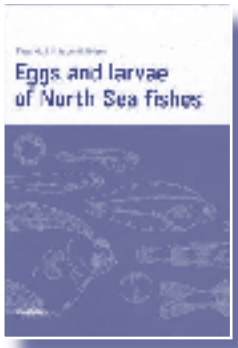
Available now: Early Stages of Atlantic Fishes: An Identification Guide for the Western Central North Atlantic.

Edited by W.J. Richards

This two-volume set is the definitive reference covering the ELH of those fishes found in the part of the Atlantic that stretches from North Carolina to the Equator, across the territorial waters of at least 40 countries. With contributions from more than 70 international experts, the book should be of great interest to fishery scientists, marine biologists, oceanographers, and ecologists.

Over 2600 pages, this two-volume masterwork covers the eggs, larvae, and juveniles of all families known to inhabit this area. It brings together all of the published information of merit plus original research results, providing information designed to identify these ELH stages generally collected by plankton nets. Chapters in the volume are devoted to each of the 214 families. All of them include a brief synopsis of the family, early life stage identification, meristic data tables, and significant accounts of lower taxa, with one page giving detailed information and the facing page devoted to illustrations.

- ISBN: 0849319161
- Publication date: 2005.
- Number of pages: 1824 (2 volumes)
- Publisher: CRC Press. §



Available now: Eggs and Larvae of North Sea Fishes.

Peter Munk and Jørgen G. Nielsen

This book presents the early stages of about hundred common fishes in a standardized, illustrative layout, affording effective guidance to the investigation and identification of these stages.

Emphasis is put on the illustration by clear figures and on the precision of main diagnostic characters. Each species is presented in a standard two-paged format with description of development and corresponding figures of five characteristic stages; and with additional paragraphs which describe the adult characters and biology and specify the distinct characters of the larva. The series of identification sheets is introduced by a set of short, reviewing chapters, emphasizing the research history and methods, and the early stage morphology and ecology.

Due to their great importance in the plankton ecosystem and in fish stock replenishment, the fish eggs and larvae attract interest from a wide range of researchers. This book will be a valuable tool to the scientist and technician who need to make correct identification of collected fish larvae, and want additional information on the early development of the species.

- ISBN: 87-913-1924-2.
- Publication date: 2005.
- Number of pages: 224.
- Publisher: Biofolia Press. §

Proceedings of the 29th Annual Larval Fish Conference

The conference proceedings will be published in a special volume of the journal *Scientia Marina*. *Scientia Marina* is a journal of marine sciences published since 1955 by the Institut de Ciències del Mar de Barcelona (CSIC). This journal has been included in the Science Citation Index since 1998 (www.icm.csic.es/scimar/scimar1.html). This special volume will be edited by Jeff Govoni and M. Pilar Olivar. It will include about 20 papers from the conference. All manuscripts will be peer-reviewed by at least two readers, in addition to the editors. Publication is expected to be at the end of 2006 or the beginning of 2007. Copies of the book will be distributed free of charge to all conference registrants. §

Other Recent Publications of Interest

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.

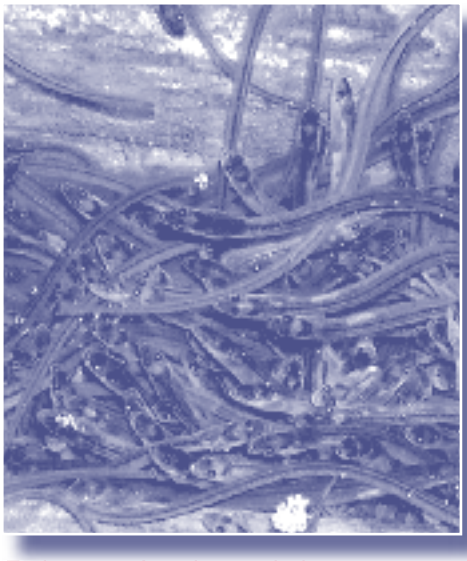
Northeast Region...cont'd from p. 3

is used to sample larger juvenile bluefish on the inner continental shelf. Additionally, juvenile bluefish in both ocean beach and estuarine habitats are sampled with a beach seine. The standardized gear and sampling protocols among the five integrated projects over time will provide comparable data on an East Coast-wide scale. The results of this sampling program will also provide the data needed to analyze the factors affecting recruitment success for this species, which has been in decline since the early 1980s.

American eel early life history

The reported decline of the American eel in the northeastern United States has prompted concern over the status of the species. During the Winter/Spring of 2005, RUMFS (Mark Sullivan, Ken Able) initiated a pilot study in the Mullica River–Great Bay estuary (New Jersey) to determine the feasibility of using artificial resettlement collectors (originally designed for Australian glass eels) to study ingress patterns of early stage American eel as a complement to ongoing long-term ichthyoplankton sampling for glass eels (https://marine.rutgers.edu/anguilla/eel).

Eel resettlement collectors were constructed out of dense tufts of unraveled polypropylene rope fiber attached to a PVC/terra-cotta base. Arrays of seasoned collectors were deployed at 7 sites weekly (March - May) from sundown to sunrise in order to sample glass eels using the nighttime flood tide. At sunrise, collectors were retrieved, shaken out into a plastic tub and a sub-sample of eels measured and staged. Remaining eels were then counted and released at the site of capture the next day.



Early stage American eel elvers aggregating at a dam near the Rutgers University Marine Field Station.

Although man-made structures are thought to play an important role in the reported decline of the American eel, this dam near the Rutgers University Marine Field Station appears to be only a temporary nuisance for migrating elvers.

Catches in individual resettlement habitats ranged from 0 – 2,585 eels per collector. Pigmentation stages varied from unpigmented, newly arrived eels (stage 1) to fully pigmented (stage 7) elvers. The proportion of pigmented/unpigmented individuals increased gradually, and then rapidly, with time until no stage 1 individuals remained by late April.

These traps have several notable advantages over more traditional glass eel/elver sampling devices in that they are highly portable, can be fished simultaneously over wide spatial scales, and require minimal monitoring. They also have the ability to collect glass eels in complex habitats or situations of increased flow. Preliminary field work indicates these units are useful for quantifying early life stages (leptocephalus and glass eels) of conger eel (*Conger oceanicus*) as well as a number of other structure-oriented, estuarine-dependent species.

This research has formed the basis for a New Jersey Sea Grant-funded project on American eel early life history beginning in winter-spring 2006. In the meantime, RUMFS has initiated collaborative glass eel research efforts with the Atlantic States Marine Fisheries Commission, New Jersey Department of Environmental Protection, and NOAA Beaufort Laboratory.

Scale formation of estuarine-dependent fishes

Patterns of scale formation are being examined (onset, completion, spatial pattern) for selected teleost fishes in several families to determine if the patterns are a useful indicator for the transition from the larval to the juvenile stage (Ken Able, Jen Lamonaca). In many species, the ontogenetic pattern is very similar, with onset of scale formation occurring on the lateral surface of the caudal peduncle, then spreading anteriorly along the presumptive lateral line, then laterally over the body, onto the head, and eventually onto the median fins. However, in some species the scales originate in other single or multiple loci. The timing of scale onset and completion, relative to fish size, is late relative to other morphological and behavioral characters (i.e., fin ray formation, eye migration in flatfishes, settlement). The completion of scale formation in the fishes examined (e.g. flatfishes, Able et al., in press) is apparently the last external morphological change to occur during the larval to juvenile transition and, as a result, may have relevance to defining the end of the larval stage and the beginning of the juvenile stage.

Linkages between Delaware Bay marshes and adjacent habitats

Although the importance of salt marsh habitats for fishes and crabs has been accepted for close to half a century, the linkages between marshes and adjacent estuarine habitats have been ill-defined. In a synoptic study, Ken Able, John Balletto, Stacy Hagan, Paul Jivoff, and Ken Strait are providing new insights into the patterns of fish (13 species) and blue crab *Callinectes sapidus* habitat use for Delaware Bay and upstream (tidal fresh water) and downstream (ocean) habitats (Able et al., in review).

This examination was based on seven years (1998 - 2004) of sampling across 12 habitat types along the bay–river salinity gradient with multiple gears. As a result of this extensive sampling, results are based on the collection of almost 10 million fishes and blue crabs over 211 km of aquatic habitat in over 19,000 samples. While this study reinforces the importance of salt marsh creeks as fish and blue crab habitat, it also makes it clear that there are few marsh-dependent species because almost all species simultaneously use a variety of other bay and river habitats. However, patterns of use vary over multiple temporal scales, especially seasons, but also with ontogeny during the early life history (eggs, larvae, juveniles, adults). This facultative use of marshes, due in large part to the extensive migrations for many of the species in Delaware Bay, makes an improved focus on the linkages across this ecoscape critical to understanding the functional significance of marshes (and estuaries) to estuarine fishes and their continental shelf metapopulations.

Recent papers from RUMFS:

Hare, J.A., and K.W. Able. (in press) Outbursts of Atlantic croaker (*Micropogonias undulatus*) along the east coast of the United States. Fisheries Oceanography.

Able, K.W., and J.C. Lamonaca. (In press). Scale formation in selected western North Atlantic flatfishes. Journal of Fish Biology.

...continued on p. 10

Northeast Region...cont'd from p. 9

Sullivan, M.C., K.W. Able, J.A. Hare, and H.J. Walsh. (in review) What can glass eel stages reveal about the status of the American eel (*Anguilla rostrata*)?: A comparison of time series between two, U.S. east coast estuaries. Journal of Fish Biology.

Able, K.W., J.H. Balletto, S.M. Hagan, P.R. Jivoff, and K. Strait. (In review) Linkages between salt marsh and other estuarine habitats (PSEG synthesis). Reviews in Fisheries Science.

Able, K.W., M.P. Fahay, D.A. Witting, and R.S. McBride. 2006. Fish settlement in the ocean vs. estuary: comparison of pelagic larval and settled juvenile composition and abundance from southern New Jersey, USA. Estuarine Coastal and Shelf Science 66: 280-290.

Able, K.W. 2005. A reexamination of fish estuarine dependence: evidence for connectivity between estuarine and ocean habitats. Estuarine Coastal Shelf Science 64: 5-17.

Nemerson, D.M., and K.W. Able. 2005. Juvenile sciaenid fishes respond favorably to marsh restoration in Delaware Bay. Ecological Engineering 25: 260-274.

Able, K.W., L.S. Hales Jr., and S.M. Hagan. 2005. Movement and growth of juvenile (age 0 and 1+) of tautog (*Tautoga onitis*) and cunner (*Tautogolabrus adspersus*) in a southern New Jersey estuary. Journal of Experimental Marine Biology and Ecology 327: 22-35.

Nemerson, D.M. and K.W. Able. 2004. Spatial patterns in diet and distribution of juveniles of four fish species in Delaware Bay marsh creeks: factors influencing fish abundance. Marine Ecology Progress Series 276: 249-262.

Correia, A.T., K.W. Able, C. Antunes, and J. Coimbra. 2004. Early life history of the American conger eel (*Conger oceanicus*) as revealed by otolith microstructure and microchemistry of metamophosing leptocephali. Marine Biology 145: 477-488.

from: Maurice Lamontagne Institute, Fisheries and Oceans Canada

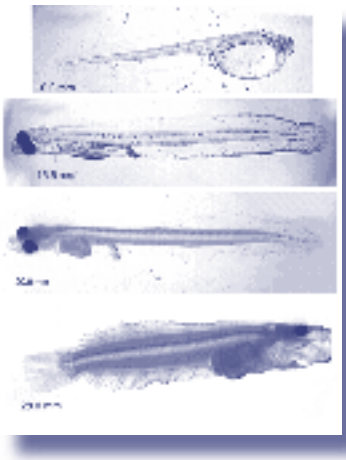
Patrick Ouellet and Martin Castonguay report a rare catch of Greenland halibut (turbot) *Reinhardtius hippoglossoides* larvae in the northern Gulf of St. Lawrence.

Historically, the northern regions of the Gulf of St. Lawrence have been infrequently surveyed for their zooplankton (including ichthyoplankton) communities. The most recent analysis of the ichthyopankton community of that region used data collected in spring and early summer from 1985 to 1987 (Ouellet et al. 1994). Back then, species like cod (*Gadus morhua*) and redfish (*Sebastes* spp.) were still relatively abundant and important resources to the local fisheries. Unsurprisingly, these species were also well represented in the ichthyoplankton community sampled in May and early June. In the late 1980s, the cod and redfish stocks collapsed and in the early 1990's the Gulf of St. Lawrence began to experience a 'cold period' marked by a larger volume and colder than normal cold intermediate layer (water mass with temperature ≤ 1°C, between ca. 30 and 150 m) that lasted for more than a decade (ca. 1988 to 1999). Although some warming of the cold intermediate layer is observed since 1999, there is still no sign of a significant recovery of the cod population.

In May and June 2005, some 20 years after the last large-scale zooplankton surveys were conducted in the areas, the opportunity arose to do Bongo sampling again in the northwestern and Anticosti regions of the Gulf (see map). The sampling was conducted within a research program launched by Fisheries and Oceans Canada in collaboration with the fishing industry. We submitted to carry out a short zooplankton survey at stations distributed in the northwestern Gulf and around Anticosti Island, using Bongos, on board fishing boats from our partner in the program, the "Association des Capitaines Propriétaires de la Gaspésie (ACPG)." Our objectives were to compare the current ichthyoplankton community to that observed some 20 years ago and specifically to identify cod spawning at various sites by the presence of cod eggs and larvae in order to obtain information on the potential recovery of the stock.

With regards to cod, the results were disappointing with only four larvae and few eggs identified as cod eggs that were caught in May. It appears that at the present time there is practically no cod spawning in Spring at those sites. However, overall, the larvae of 23 species of fishes were captured and among them it was a pleasant surprise to find 10 Greenland halibut larvae (6 in May and 4 in June) at stations east of Anticosti. Greenland halibut larvae have very rarely been observed; some were caught in an area southwest of Newfoundland in the early 1970s and only one specimen has been reported in the upper St. Lawrence Estuary in 1977 (De Lafontaine 1980). Therefore, the few larvae captured in 2005 represent a rare opportunity to learn a bit more about the early life stage of that species in the northern Gulf of St. Lawrence. The larvae were pelagic as inferred from their bilateral symmetry and their catch in the surface Bongo tows, between 0 and 50 m. The size of the larvae ranged from about 19 mm SL in May to a maximum of 31 mm SL in June. From the time interval between the two surveys a growth rate at ca. 0.3 mm d^{-1} was estimated. We are also able to compare our field larvae with newly hatched larvae from laboratory rearing. Thanks to our colleague Dr. Yvan Lambert, who in winter 2005 was able to successfully fertilized in vitro Greenland halibut eggs (a first for this species). Using 10 mm SL as the size at hatching and applying the growth rate estimated in the field, the birthdate of the larvae captured in field was estimated to be April 1, probably from eggs spawned in mid- or late February (assuming an incubation temperature of ca. 4°C).

Despite the limited range of the 2005 sampling, those results illustrate that ichthyoplankton surveys can provide valuable information on the time of spawning and the spatial distribution of the early life stages, on the identification of sensible areas for the larvae, and on nursery areas of the juvenile stages. §



Greenland halibut larvae: newly hatched (top); end of yolk resorption (from eggs reared at MLI in Winter 2005, courtesy of Dr. Yvan Lambert, MLI); larva caught in May 2005; and older larva caught in June 2005. Sizes shown are standard lengths.

Southern Region...cont'd from p. 5

To provide insight on lionfish reproduction in the Atlantic, we have conducted reproductive experiments and assessments using lionfish collected from the western Atlantic, Indonesia, and the Pacific. Histological examination of lionfish gonads from the western Atlantic indicate that females mature at approximately 140 mm standard length, corresponding to approximately 1 year of age. Ovarian tissue analysis indicates that lionfish females are asynchronous sequential spawners (capable of frequent, i.e., weekly, egg-ball releases). Lionfish egg balls are comprised of a crystalline mucus

...continued on p. 11

Lionfish adult with recently released egg ball (Photo: James A. Morris, Jr.).

President's Message...cont'd from p. 5

the following: Annual Conference Committee; Nominations and Mail-Ballot Committee; Sally Richardson Award Committee; J.H.S. Blaxter Award Committee; Student Travel Grants Committee. Please step forward!

ELHS promotional poster and pamphlet. Copies of the Section's poster (view it at: www2.ncsu.edu/elhs) are available from Section Secretary Bruce Comyns (bruce.comyns@usm.edu). An updated promotional pamphlet for the Section is being prepared. Please contact Bruce if you have any suggestions for the pamphlet's content.

Membership recruitment. All current full and affiliate members are urged to assist us in recruiting new members. Make our web sites known to your students and colleagues and circulate the new pamphlets and posters when you go to other conferences. If you are an AFS member with an interest in the early life stages of fishes, be sure to join the Section!

JOIN US!!!! JOIN US!!!! JOIN US!!!!

The secure payment area of the LFC website is now available. New and renewing affiliate members can pay their dues by credit card at: www.larvalfishcon.org/join_elhs.asp

JOIN US!!!! JOIN US!!!! JOIN US!!!!

Member contact information. Despite my request in the last issue of *STAGES*, the contact information (particularly e-mail addresses) in our database is still outdated for a large percentage of members. If you think that you are one of these, please write to ELHS Secretary Bruce Comyns (bruce.comyns@usm.edu) and provide him with your new coordinates.

Contributions to *STAGES*. All readers of *STAGES* know that its content does not reflect even a small fraction of our members' activity. You can help remedy this by contributing something! Doing that is simple. Just send text and/or images to your regional representative.

Suggestions for things to send:

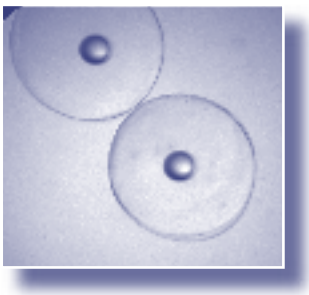
- a summary of what you and your team are involved in;
- a modified conference abstract;
- a brief description of your thesis project;
- a review of a new book or interesting article;
- anything that you think your colleagues might be interested in knowing about!

YOUR COLLEAGUES WANT TO KNOW WHAT YOU ARE DOING, SO TELL THEM!

Please reflect upon what YOU can do to help our Section, and contact me with your comments, suggestions, or concerns. §

— Howard I. Browman

Southern Region...cont'd from p. 10



Unfertilized lionfish egg (Photo: J. A. Morris, Jr.).

consisting of about 30,000 eggs per ball during each spawning event. Efforts to acquire fertilized lionfish eggs remain unproductive. Lionfish broodstock are being maintained at the Center for Coastal Fisheries and Habitat Research, NOAA, Beaufort, NC, and efforts are underway to produce lionfish larvae to be used in larval temperature tolerance experiments and larval descriptive work.

Additional efforts to model the lionfish population in the Atlantic have determined that juvenile lionfish may play an important role in controlling the Atlantic lionfish. Using the aforementioned reproductive biology, we have constructed a four-stage, density-dependent matrix model including egg, larval, juvenile, and adult life stages. Using survival and transition probabilities derived from the literature for marine reef fishes, we conducted 10-year model simulations and performed a sensitivity analysis on the matrix parameters. We found population size to be most sensitive to juvenile survival rates, which suggests that predation on juveniles may play a key role in determining population size. It is unknown if juvenile lionfish are venomous, or if they are vulnerable to predation by other Atlantic reef fishes. Experiments are underway to test juvenile lionfish vulnerability using adult native reef fishes in the laboratory and possibly some native elasmobranchs. In addition, histological analysis of juvenile lionfish spines will provide further insight into predation vulnerability.

These efforts represent one of the first attempts to understand marine reef fish invasions in the Atlantic. While no feasible eradication options exist for the lionfish, this work is providing an unprecedented opportunity to learn from a highly successful reef fish introduction. This knowledge can be used in the future to provide coastal managers with the framework for assessing the relative 'invasiveness' of a imported exotic reef fishes into the United States.

Contact: James A. Morris, Jr., Center for Coastal Fisheries and Habitat Research, National Centers for Coastal Ocean Science, NOS/NOAA, 101 Pivers Island Road, Beaufort, NC 28516; 252-728-8782; james.morris@noaa.gov §

Editor's Ramblings

Back Then Back

I hope you've noticed that the regular column "*ELHS Back Then*," which I initiated two years ago, has not been all that regular. If you did not notice it missing from the cover of *STAGES* for the last two issues, perhaps it's not worth running the column. Personally, I think it's fun to reflect upon the years, and I hope these little bullets of historical information help our newer members appreciate just how active and progressive our organization has been. I thank ELHS Historian Jeff Govoni for the return of "*ELHS Back Then.*" Jeff is keeper of the Section's records and during the week of Thanksgiving 2005 he graciously allowed me to spend hours in his office going through past ELHS newsletters. My own schedule did not allow enough time to go through other Section documents, but I did manage to glean enough information to ensure that many future covers of *STAGES* will feature this historical column. *ELHS Back Then* is back! §

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.

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 $10 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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