STAGES

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

Volume 25, Number 3 | Lee A. Fuiman, Editor | October 2004

Inside this issue

ELHS Back Then

5 years ago: The Section committed funds to the parent society to reduce a publication backlog of Transactions of the American Fisheries Society.

10 years ago: ELHS members R.C. Chambers and E.A. Trippel published a book entitled "Early Life History and Recruitment in Fish Populations" based on papers from the ALFC held in St. Andrews, Canada.

15 years ago: The ALFC really goes international, holding the 13th meeting in Merida, Mexico.

20 years ago: The 8th ALFC is held in conjunction with the 3rd International Symposium on the Early Life History of Fishes in Vancouver.

25 years ago: The Early Life History Section was approved by AFS at their annual meeting in West Yellowstone, September 1979.

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

January 7, 2005

Happy Silver Anniversary!

ELHS Approved 25 Years Ago

It was during the 3rd Annual Larval Fish Conference (then called the "Third Symposium on Larval Fish"), which was organized by Bob Hoyt and held at Western Kentucky University in February 1979, that Darrel Snyder circulated a petition for the establishment of an Early Life History Section within the American Fisheries Society. Those petitions were accepted and formation of the Section was unanimously authorized by the general membership during the 1979 AFS annual meeting in West Yellowstone, Montana. A Provisional Executive Committee was appointed as follows: Interim President: Darrel E. Snyder; Interim Secretary-Treasurer: Ronald Kernehan; Newsletter Editor: Fred P. Binkowski; Members: John A.Dorr III, Daniel J. Faber, Lee A. Fuiman, and Robert G. Werner. §

President's Message

In this, my inaugural message as President of the AFS-ELHS, it is a pleasure to inform you of the full slate of initiatives currently being undertaken by your Section officers. You will read about most of these in detail elsewhere in this issue of *Stages*. Therefore, I will only summarize them for you here, and at the same time make you aware of the goals that I have set for my two-year term as your President. But first, I'd like to introduce myself to those of you who don't know me.

I have been a member of the ELHS since 1986, and the first ALFC in which I participated was the memorable 10th, held in Miami that same year. Since then, I have been an active participant in the Section, acting as Northeast Regional Representative, Western Regional Representative (yes, I've moved around!) and, as most of you probably know, I hosted LFC2002 here in Norway. So, suffice it to say that I am familiar with the Section's activities and objectives and I will do my best to live up to the high standards set by our past presidents.

I won't bore you with a lengthy description of my research interests and activities: I work on many aspects of the early life history of fishes, from physiological through ecological. Those of you who are not familiar with my work are invited to look me over: www.fishlarvae.com/scientists/theguys.asp?SID=2

Having blown my own horn, I can now move on to tell you about the full slate of activity going on behind the Section's scenes.

My objectives. Besides general stewardship of the Section, I have set several goals for my Presidency: 1) repopulate and renew membership on our standing, sessional and ad-hoc committees; 2) bring the election of officers back into synchrony with the schedule mandated by Section bylaws; 3) explore ways to facilitate future elections; 4) develop a website for the Annual Larval Fish Conferences (ALFCs); 5) in coordination with Jeff Govoni (Chair of the Section's Time and Place Committee), secure venues for future ALFCs; 6) produce an updated promotional pamphlet for the Section, along with a new logo; 7) recruit new members; 8) implement new section awards (the Blaxter and Ahlstrom Awards).

Further details on each of these goals, along with a status report, follow.

Election of officers. Joe Brown and Denice Drass have generously agreed to have their names placed in nomination for President-Elect and Secretary-Elect, respectively (p. 10). Kathy Lang once again stepped forward to serve her colleagues for another four-year term as Treasurer. She was re-elected at the Section's annual business meeting in Clemson. I urge all of you to email Kathy (kathy.lang@noaa.gov) with a few words of thanks.

New web site for the ALFCs. www.larvalfishcon.org is the new home for the ALFCs. The site is intended to provide as much information as possible on past (as archival pages), current, and future ALFCs (p. 11).

Venues for future ALFCs. Jeff Govoni and I are extremely grateful for, and gratified by, the interest that those whom we have approached to host future ALFCs have shown. As a result, we have offers for ALFC venues through 2011 (p. 5), and the locations reflect a wonderful international expansion of The Section's showcase event into Europe. I, for one, am extremely enthusiastic about this.

New logo, promotional poster and pamphlet. Following from an exciting concept drawing, artist-illustrator Glynn Gorick has been commissioned to produce a new logo and promotional poster for The Section. The logo will be used as the background image for an updated promotional pamphlet. These will be ready for distribution (in hard and electronic copy) no later than July 2005. To view a selection of Glynn's work, go

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News from the Regions

North Central Region

Jim Garvey

from: Illinois Natural History Survey, Champaign, Illinois

Comparison of push and tow nets for sampling larval fish with implications for assessing littoral habitat utilization

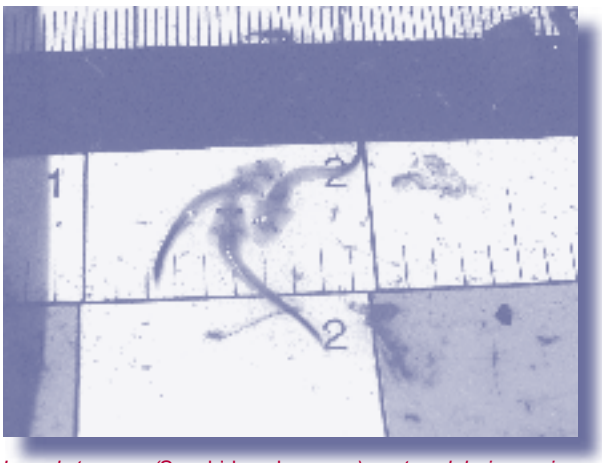
Randall M. Claramunt, Daniel E. Shoup, and David H. Wahl

We evaluated bow-mounted push nets for collecting larval fish across reservoirs and habitats and compared them with traditional tow nets. Ichthyoplankton samples were taken on 21 reservoirs that varied in morphological and environmental characteristics using a pushed 0.5-m-diameter conical net and towed 0.5-m-diameter and 0.75-m-diameter conical nets. The push net had higher catches than the same diameter tow net. However, the push net was not as efficient as the larger sized tow net later in the year when larvae are larger. For pelagic habitats, bow-mounted push nets or large tow nets will sample the larval fish community better than traditional pulled 0.5-m-diameter conical nets. We also assessed push nets for sampling near-shore littoral habitats (<1.0 m in depth). The littoral areas had much higher catch rates than the offshore pelagic zone across reservoirs as estimates of peak larval fish densities were four times higher in the littoral zone. Bow-mounted push nets can be used to effectively sample both pelagic and littoral larval fish communities, whereas traditional towed nets are only suited for pelagic habitats. Estimates of larval fish abundance from only pelagic habitats will likely underestimate total larval fish densities. The versatility of the push net to sample littoral habitats is an important consideration when designing surveys to estimate larval fish communities.

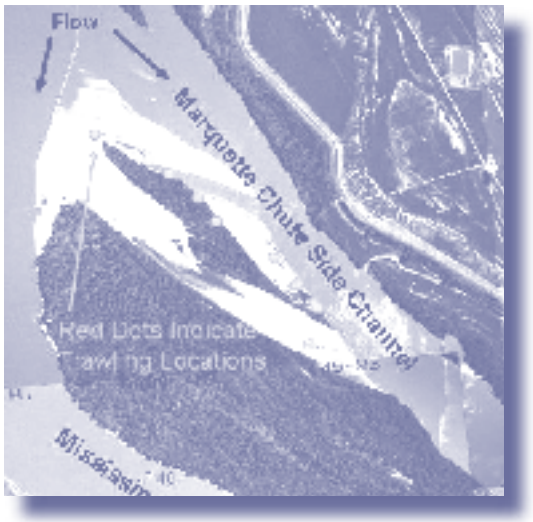
from: David P. Herzog, Missouri Department of Conservation, Jackson, Missouri

Large catch of larval sturgeon in Middle Mississippi River provides new information on habitat use in high water conditions

The Missouri Department of Conservation - Big Rivers/Wetlands field station has used a small mesh trawl (known as the Missouri trawl) to capture larval shovelnose and pallid sturgeon in the Middle Mississippi River since 1998. During each consecutive year of sampling we learn a little more about the habits and habitats of these small fish. Larval sturgeons begin to appear in trawl catches in mid to late May when water temperatures range from 65-70 ºF. In previous years we have noted that small sturgeons are captured with high frequency at downstream island tips or at velocity shelter areas (e.g. inside bends). We have previously captured as many as 26 larval sturgeons in a single 300-m trawl haul.



*Larval sturgeon (*Scaphirhynchus *spp.) captured during spring 2004 at Marquette Chute Side Channel, Upper Mississippi River (RM 49).*



Trawling locations on Marquette Island (RM 49, Upper Mississippi River) where larval sturgeon were sampled during spring 2004. The island was submerged at the time of sampling and may be the location of sturgeon spawning and nursery habitat in the river.

During June 2004, Joe Ridings, a field research biologist, and field crew were conducting sampling for larval sturgeon and captured over 150 larval sturgeons in a single trawl haul. Several trawl hauls were completed during that trip. Many of the trawl hauls were taken near and at times through flooded terrestrial vegetation. Trawl hauls that were completed proximate to the flooded vegetation captured more larval sturgeon than those that were taken in deep open water. Lengths of the sturgeon ranged from 12 mm with yolk sac to over 60 mm TL indicating a prolonged spawning period. It is also important to note that the larval fish were captured in one of the most diverse side channels in the Middle

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Section Officers

President

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President-Elect

vacant until next election

Secretary-Elect

vacant until next election

REMINDER

Check the mailing label for your membership expiration date and renew if necessary.

You won't want to miss the next issue!

Pacific Rim Region

Iain Suthers

from: the Australian Maritime College, Tasmania via Francisco J. Neira

Ecology and dynamics of larval fishes in the Tamar Estuary, northern Tasmania.

PhD student Ana L. Lara, from Mexico, is researching the ecology of larval fishes in the Tamar Estuary primarily to determine the role that the estuary plays in the life cycle of fishes. Tamar Estuary constitutes a major environmental, economic, and social asset of Tasmania's northern region, and is regarded as of critical conservation significance due to the increasing level of environmental degradation in several areas. Objectives of Ana's PhD include describing the species composition, and seasonal and spatial distribution of larval fishes throughout the estuary, and assessing its importance as breeding and nursery area. Ana is being supervised by Dr. F. J. Neira.

Recruitment and age at entry of larvae/early juveniles of commercial and recreational fishes into the Tamar Estuary, northern Tasmania.

MSc student Erik E. Raudzens is conducting research on species composition, spatial distribution and abundance of larval fishes in coastal waters outside the entrance to the Tamar Estuary, and attempting to locate spawning location(s) in marine waters using hydrological current models coupled with back-calculated ageing of larvae. Erik is under the supervision of Dr F.J. Neira.

Spring-summer ichthyoplankton assemblages in subtropical and temperate south-eastern Australia: dynamics and characterisation of spawning areas of key fish species.

PhD student John P. Keane is researching spring-summer ichthyoplankton assemblages along shelf waters of south-eastern Australia (southern Queensland to Tasmania, and South Australia), primarily to describe spatial distribution and abundance of eggs and larvae of key species, and to characterise spawning habitats and requirements of these species. An additional objective of John's thesis is to determine inter-annual variability of the assemblages in relation to environmental conditions. Ichthyoplankton samples for this study are being collected as part of the current collaborative project "Development and evaluation of egg-based stock assessment methods for blue mackerel, *Scomber australasicus*, in southern Australia" (FRDC 2002/61). John is under the supervision of Dr. F. J. Neira.

Searching for blue mackerel spawning grounds.

AMC staff and students have been surveying shelf waters along southeastern Australia on board the Fisheries Training Vessel *Bluefin*, collecting plankton samples for a 3-year collaborative project to develop and evaluate egg-based stock assessment methods for blue mackerel in southern Australia (FRDC 2002/61). Surveys are being conducted under the leadership of Dr. F.J. Neira, and the project managed by the South Australian Research and Development Institute, in collaboration with AMC, the Tasmanian Aquaculture and Fisheries Institute and NSW Fisheries. Surveys to date have successfully been completed between southern Queensland and southern New South Wales (NSW) in October 2002 and 2003, between southern NSW and mid-eastern Tasmania Howe in February 2003, and along NSW in February 2004. Samples have been collected during day and night using a bongo sampler equipped with 300-500 µm mesh plankton nets, enclosed within a purpose-built, weighted stainless steel frame for vertical tows (≤200 m). The frame has been fitted with a Seabird Electronics SBE19 CTD data logger, and a Scanmar unit to control sampling depth. Surveys will continue in 2004/05, and are expected to provide very detailed information on the distribution and abundance of eggs and larvae of blue mackerel, as well as of other key mackerel species.

Latest reports/publications

several publications were listed in the previous issue of *Stages*.

Landaeta, M, F., Neira, F.J. & Castro, L. R. (2003). Larvae of *Dactylopsaron dimorphicum* (Perciformes: Percophidae) from oceanic islands in the southeast Pacific. *Fishery Bulletin* 101: 693–697.

Bruce, B.D., Bradford, R.W., Neira, F.J., Miskiewicz, A.G. & Jordan, A.R. (2003). Larval Fish Database Interactive CD. FRDC Project 98/103. CSIRO Marine Research Hobart. §

President's Message...continued from p. 1

here: http://www.fishlarvae.com/photos.asp?AID=6&GID=104

Membership recruitment. These new tools – the ALFC website, mass emailings, promotional materials – will be used to generate renewed interest in full and affiliate membership in the Section. All current members are urged to assist with this. Make our websites known to your students and colleagues and circulate the new pamphlets and posters when you go to other conferences.

The John H. S. Blaxter Best Student Poster Award. This award became official at the Section's annual business meeting in Clemson. Don Hoss and Lee Fuiman are charged with getting this one going - read their report on p. 10.

The Ahlstrom Lifetime Achievement Award. Although this award became official at the Section's 2003 annual business meeting, it has yet to be inaugurated. Art Kendall has kindly agreed to get this award going. Read all about it on p. 11.

If you like what you're hearing, and value the ELHS and its activities, then I say to you: get involved! Get active! Come to the ALFCs! Volunteer for service on one (or more!) of the Section's committees! Send a contribution in to STAGES! Organize a theme session for one of the next ALFCs! Think of something new and exciting! Clearly, there's a lot that *you* **can** do. §

--- Howard I. Browman
President, AFS-ELHS
Austevoll, Norway, 6 September 2004

European Region

Audrey Geffen

This year has provided a lot of opportunities to hear about European research activities on fish larvae, especially at international meetings. There were ICES conferences on *The Influence of Climate Change on North Atlantic Fish Stocks* (May), with both digital and analog fish larvae, and *Gadoid Mariculture: Development and Future Challenges* (June), where it was apparent the increasing sophistication of research into larval physiology, especially with respect to feeding and nutrition. The time is really overdue for a discussion between the ecologists/recruitment biologists and the aquaculture physiologists. It seems to many of us that these groups have puzzle pieces which are ready to be assembled, and only lack the opportunity for communication. The Fisheries Society of the British Isles annual meeting in July was on the *Comparative Biology and Interactions of Wild and Farmed Fish* (July) and this could have provided a good forum, but very few early life history papers were presented. More larval fish work from European researchers was presented at the Third International Symposium on Fish Otolith Research and Application (July) in Australia.

This summer a decision taken by the University of Liverpool (UK) to close one of the oldest sites of larval fish research in the world. All university research and teaching at the Port Erin Marine Laboratory in the Isle of Man will end in June 2006, and although the future status of the site hasn't been decided, it isn't likely to support any continuing studies. What is the significance of this laboratory? In terms of larval rearing and the basis of mariculture, the laboratory can trace it's activities back to 1892 when the first Marine Biological Station was built under the direction of William Herdman who promoted the idea of stock enhancement to offset declines in exploited fish populations. The core of the existing laboratory was built in 1902 and contained a fish hatchery for this purpose. The fashion for releasing eggs and larvae died away in this and other European laboratories, but studies of plankton and fish larvae were published regularly in the Annual report of the Liverpool Marine Biology Committee.

In the 1960's the Ministry of Agriculture Fisheries and Food built a large annex to the Port Erin Marine Biological Station. Over the next decades researchers such as Bari Howell, Jim Shelbourne, Alan Bowers and others conducted well-known studies on flatfish aquaculture. Their work formed the basis for the eventual development of turbot and sole culture techniques, and also stimulated more interest in laboratory-based early life history research.

Over the past 20 years there have been active research programmes on larval fish ecology and juvenile recruitment, based both on field and laboratory work. In addition, the establishment of the Port Erin Larval Rearing Centre in 1997

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North Central...continued from p. 2
Mississippi River reach, Marquette Chute. Biologists from Southern Illinois University have found larval and juvenile sturgeon in other portions of the river with similar characteristics.

The Big Rivers/Wetlands field station is completing a manuscript entitled "Larvae Provide First Evidence of Successful Reproduction in the Mississippi River." Conducting field sampling during high water periods provided researchers with information that was previously unknown.

from: Illinois Natural History Survey and Ohio State University

Effects of exotic species and human impacts on essential fatty acid availability in the Lake Michigan food web

Sergiusz Czesny, Jacques Rinchard, John M. Dettmers, and Konrad Dabrowski

Substantial decreases in nutrient loading that began in the late 1970s and the appearance of zebra mussel (*Dreissena polymorpha*) in the late 1980s markedly changed water transparency in Lake Michigan. Under these conditions there is a profound effect of UV-B on nutrient flow, biochemical cycles and food web structure. Intracellular structures and biochemical pathways are affected when algae are exposed to UV rays. Polyunsaturated fatty acids (PUFA), especially eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), essential to many heterotrophs, are particularly sensitive to UV radiation. Oxidative properties of UV light cause a reduction of PUFA in algal cells. The decrease of essential fatty acid levels in algae has a negative effect on zooplankton. EPA and DHA are limiting factors for zooplankton growth. The herbivorous zooplankton is a functionally important component of aquatic food webs because it constitutes the link between primary producers and higher trophic levels. Changes in the nutritional status of algae will affect zooplankton as well as organisms that rely on it for food. Since zooplankton may be deficient in essential fatty acids due to UV-induced changes at lower trophic levels, the amount of PUFA transferred to both adult and juvenile yellow perch will decrease. Because fish require EPA and DHA for optimal growth, normal development, and reproduction, both adult and larval stages of yellow perch can be negatively affected by the reduced amount of available PUFA in their diet. Nutrient composition of food consumed by females during gonad development strongly affects the quantity and quality of eggs and offspring viability. Furthermore, PUFA are essential for normal development and larval metamorphosis of fish.

We are currently conducting field and laboratory studies to quantify the food chain dependence among algae, zooplankton, benthic organisms, fish prey and adult yellow perch and determine the transfer of PUFA through the food chain. Samples from all trophic levels are being collected to understand the dynamics of the flow of PUFA through the food chain.

In the laboratory, we are evaluating variation in the levels of PUFA in the eggs of yellow perch collected in Lake Michigan and correlate those values with the hatching rate and survival of offspring. We also examine the effects of dietary levels of PUFA on the fatty acid composition of the eggs and the hatching rate and survival of newly hatched yellow perch. To simulate transfer of PUFA through the food chain, yellow perch were fed live prey previously conditioned to contain three levels of PUFA. Then, we examined the effects of dietary levels of PUFA on the fatty acid composition of the eggs, the hatching rate and the survival of yellow perch offspring.

Our laboratory experiments will provide detailed mechanistic insight into (1) the dose-response relationship between graded levels of PUFA and viability of embryos and larval yellow perch and (2) the long-term influence of PUFA content in adult yellow perch food on hatching rate and subsequent larval yellow perch survival. These results, coupled with our insights regarding nutrient availability, transfer of PUFA through the food web and current PUFA levels in major yellow perch prey items, will permit us to determine whether nutritional shifts associated with quantitative and species changes through the food web act in concert with other mechanisms (reduced zooplankton density, predation on larval yellow perch) to reduce recruitment of yellow perch in Lake Michigan. Although we address specifically the Lake Michigan "case", we expect that our results will be generally useful to researchers and managers working in the Great Lakes. These results will benefit managers in Lake Michigan and the other Great Lakes.

Frequency of early mortality syndrome in a southwestern Lake Michigan lake trout population

Sergiusz Czesny, Jacques Rinchard, John M. Dettmers and Konrad Dabrowski

Self sustainable lake trout (*Salvelinus namaycush*) populations in Lake Michigan are a primary but unmet goal of the fisheries managers in the region. Large numbers of hatchery-origin lake trout are stocked into Lake Michigan every year. Although these fish survive well to adulthood and produce viable eggs, no significant natural recruitment has been recorded. Poor lake trout recruitment in various systems has been linked with insufficient broodstock, diminished spawning habitat, contaminants, predation on eggs and alevins, and nutritional deficiencies. However, no clear cause for lack of natural recruitment has been identified for Lake Michigan lake trout. Nutritional deficiencies associated with inadequate levels of thiamine (vitamin B_1) in the eggs result in high mortalities of yolk sac stages of several salmonid species in the Great Lakes and in the Baltic Sea. Mortality caused by thiamine deficiency, commonly referred to as early mortality syndrome (EMS), is a consequence of high levels of thiaminase, an enzyme that degrades thiamine, found in prey fishes such as alewife (*Alosa pseudoharengus*) and rainbow smelt (*Osmerus mordax*). Because alewife is a major component of the lake trout diet in Lake Michigan, we hypothesize that EMS may be a significant bottleneck in the survival of early life stages of this species.

Together with collaborators at the Ohio State University, we are investigating individual variation in thiamine levels in the eggs of Lake Michigan lake trout at the time of spawning. Eggs are fertilized, incubated, and hatched under controlled laboratory conditions. High performance liquid chromatography (HPLC) is used to determine concentrations of vitamin B_1 in the eggs. Finally, we quantify mortality caused by EMS in young lake trout and correlate it with levels of thiamine found in eggs from individual females.

Dr. Sergiusz Czesny (Illinois Natural History Survey) is collecting lake trout eggs for thiamine analysis and Early Mortality Syndrome study (November 2003).

Results to date indicate that egg thiamine concentration varies by an order of magnitude among investigated females. More than 50% of all females sampled produced eggs with free thiamine levels below 0.8 nmol/g. Once free thiamine levels fall below 0.8 nmol/g, EMS incidence soar dramatically among lake trout offspring in Lake Ontario. Post-hatch mortality attributed to EMS occurred between 700 and 900 degree days, an age at which lake trout offspring are swimming and actively looking for food.

Understanding the potential importance of EMS as a regulator of lake trout reproductive success is critical for the effective management of this native Lake Michigan fish. These findings extend our ability to interpret the role of EMS in the lake trout recruitment dynamics. For instance, the actual number of spawning lake trout needed to generate natural reproduction in Lake Michigan may be underestimated by 50% or more once losses associated with EMS are taken into account. Because of the possible of our findings for managers, it will be essential to investigate lake-wide variability of thiamine deficiency as well as the importance of EMS as compared to other sources of early mortality among Lake Michigan lake trout.

from: Ohio State University

No free lunch: reciprocal predation between invasive round gobies and young-of-the-year smallmouth bass

Geoffrey B. Steinhart, Elizabeth A. Marshall, Roy A. Stein, and Nancy J. Leonard

Round gobies invaded Lake Erie in 1993 and have since reached extremely high densities in some areas of the lake. As a predator, competitor, and prey of native fishes, round gobies have the potential to alter the food web in Lake Erie and may affect native species like the small-

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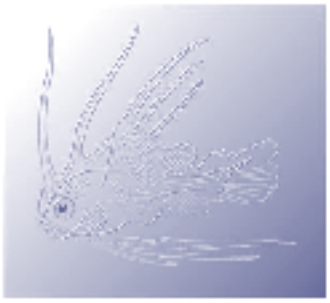
Upcoming Events



29th Annual Larval Fish Conference

Barcelona, Spain
11 - 14 July 2005

Host organization
Institut de Ciències del Mar, CSIC

THEME SESSIONS

- Effects of environmental variability on the life history strategies and recruitment: Global climate change.
- Fronts, eddies and early life histories. Invited speaker: A. Bakun.
- Larval condition, growth and survival in the field and aquaculture.
- Relationship between ecosystem features and the diversity of larval fish assemblages. Invited speaker: J.J. Govoni.
- Functional morphology, physiology and behavior. Invited speaker: H. Browman.
- Fish development and systematics: New genetic advances and classical views. Invited speaker: J. Olney.

LOCAL ORGANIZING COMMITTEE

M.P. Olivar, I. Palomera, P. Rubiés, A. Sabatés: Institut de Ciències del Mar (CSIC) (mpolivar@icm.csic.es)
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A. Estévez: Centre d'Aqüicultura (IRTA) (alicia.estevez@irta.es)
A. García: Instituto Español de Oceanografía (agarcia@ma.ieo.es)
L. Motos: Fundación AZTI (lmotos@pas.azti.es)

EARLY LIFE HISTORY SECTION COMMITTEE

H. Browman: Institute of Marine Research (Norway) (howard.browman@imr.no)
J.J. Govoni: NOAA (Beaufort, USA) (Jeff.Govoni@noaa.gov)

Future Larval Fish Conferences

The Annual Larval Fish Conference (ALFC) is a centerpiece activity of the Early Life History Section. A history of the 28 Annual Larval Fish Conferences can be found on the ELHS website. Through the years, as the ALFC has evolved, the ELHS Executive Committee, has opted for an unwritten policy for the location of the ALFC. This policy calls for ALFCs to rotate from East Coast to West Coast to the middle of the country. This rotation is intended to accommodate travelers and to serve members with marine as well as freshwater interests. Through the years, we have met jointly on occasion with other, larger organizations four times; to date exclusively with the American Society of Ichthyologists and Herpetologists. We have met abroad five times: Canada (twice), Mexico, Australia, and Norway. These joint meetings have served us well, as have meetings abroad; they draw more peopleto our ALFCs, people with a broader spectrum of interests. But, we cannot meet conjunctively, or abroad, too often, so we have adopted the policy of meeting occasionally with other organizations or abroad. We have accepted offers to host the ALFCs for 2005 and 2006 as follows:

2005: 10-15 July, Barcelona, SPAIN (hosted by Maria Pilar Olivar (Email: polivar@icm.csic.es)).

2006: 12-17 July, New Orleans, LA, USA in conjunction with the annual meeting of the American Society of Ichthyologists and Herpetologists (hosted by Bruce Comyns (Email:bruce.comyns@usm.edu)).

Proposals to host the following two meetings will be presented and put to a vote at the business meeting during the 29th ALFC in Barcelona:

2007: Memorial University of Newfoundland, St. John's, Newfoundland, CANADA (hosted by Joe Brown (Email: jabrown@morgan.ucs.mun.ca)).

2008: Leibniz Institut für Meereswissenschaften, IFM GEOMAR, Kiel, GERMANY (hosted by Catriona Clemmesen (Email: cclemmesen@ifm geomar.de)).

We also have the following expressions of interest in hosting the meeting after 2008:

2009: University of Victoria, Victoria, British Columbia, CANADA (hosted by John Dower (Email: dower@uvic.ca)).

2010: NOAA Southwest Fisheries Science Center and Scripps Institute of Oceanography, Jolla, CA, USA (hosted by Christian Reiss (Email:christian.reiss@noaa.gov)).

2011: University of Vienna, Vienna, AUSTRIA (hosted by Hubert Keckeis (Email: hubert.keckeis@univie.ac.at)).

We would be pleased to entertain competing offers for 2007 and beyond. We encourge our members in the United States to step forward and agree to host the ALFC. Guidance for hosting an ALFC can be obtained by contacting the Chair of the Time and Place Committee (Jeff.Govoni@noaa.gov). §

2004 Flatfish Biology Conference

Individuals with an interest in flatfishes are invited to present their research or attend the Flatfish Biology Conference to be held on December 1-2, 2004 at the Water's Edge Resort in Westbrook, Connecticut. This meeting will be the ninth of its kind since 1986 and each has attracted fisheries scientists throughout North America.

Among the suggested topics for discussion are physiology, biochemistry, pathology, immunology, growth and reproductive processes, aging, behavior, movements, culture methods, stock enhancement, environmental effects, and habitat requirements.

At this time, the conference is co-sponsored by the Southern New England Chapter of the American Fisheries Society and the National Marine Fisheries Service. For additional information or to be placed on the conference mailing list, please contact:

Renee Mercaldo-Allen, NMFS, 212 Rogers Avenue, Milford, CT 06460 (203-882-6549) or renee.mercaldo-allen@noaa.gov.

Conference information will also be available on the NMFS-Milford Laboratory website: www.mi.nmfs.gov. §

Recent Events

Fine Conference — Idyllic Location

The 28th Annual Larval Fish Conference was held in Clemson, South Carolina, at the Clemson University Outdoor Laboratory, which serves as a conference center, retreat center, and camp. Jeff Isely and his able staff and students from Clemson organized the meeting. Approximately 90 people attended the 3-day conference, which was preceded by a day of field trips with hiking, birding, and fishing in the mountains not far from the center. One of the highlights for me was seeing White Falls, the scene for much of the action in the moving picture *Deliverance*. On the afternoon of the last day, tours of the Clemson aquaculture center and on campus laboratory were conducted.

The conference was opened by Jeff Isley, president of ELHS and conference host, followed by a welcome from Dr. Pat Layton, Chair of the Department of Forestry and Natural Resources. Dr John Wourms of Clemson University gave the keynote address. Dr Worms is a renowned developmental biologist who specializes in fishes, particularly in development and reproduction in viviparous fishes. He discussed the evolution of viviparity and maternal–embryonic relationships in fishes. It was a fascinating presentation. Those of us who heard the talk will never be able to look at a fish anus in the same way again.

Kresge Hall, a lodge built on the shore of Lake Hartwell at the Clemson University Outdoor Laboratory, was the venue of the 28th Annual Larval Fish Conference.

Jeff Isely (right) is thanked by President Howard Browman for his service as Section President. The award was presented during the banquet of that conference.

There were no formal theme sessions, but studies on bluefish, red drum, and snapper were well represented. There were 16 student papers and a very nice poster presentation which was set up outdoors. During the business meeting we saw a beautiful presentation on the 29th Larval Fish Conference to be held in Barcelona, Spain. The full scientific program of this conference is given in this issue (p. 9).

Most of the meals were served outdoors on the shores of the lake. The socials were a lot of fun and provided much beer and wine and time for talking with old friends and meeting new ones. There were opportunities for impromptu outdoor activities like shooting hoops, tetherball, and horseshoes. The bluegrass band was outstanding, and the banquet was excellent. We also enjoyed a bonfire. I was particularly impressed by the cleanliness and comfort of the log cabin accommodations.

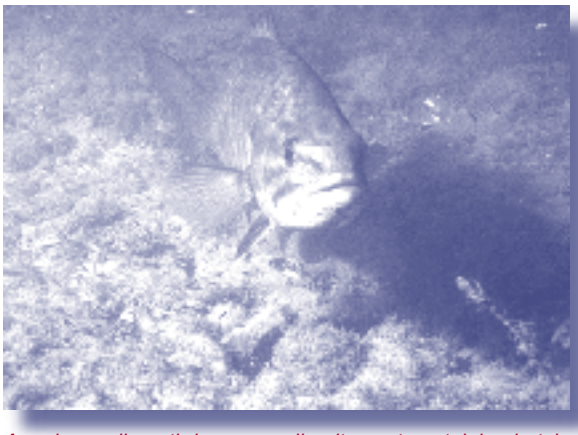
It was my impression, and several other people remarked, that this was very much like the earliest Larval Fish Conferences becuase of the smaller number of people and no concurrent sessions, which allowed everyone to hear all of the presentations. There was a very relaxed pace, which was enhanced by the venue. Thank you Jeff, Tim, and all your assistants for a great conference. §

Also at the banquet, Rich McBride (left) receives thanks (and a plaque) from Howard Browman for serving as ELHS Secretary.

North Central...continued from p. 4

mouth bass. Male smallmouth bass provide sole parental care for their developing offspring: protecting offspring from predators and keeping the nest oxygenated and free of debris (see photo). When anglers remove smallmouth bass from their nests, however, the unguarded offspring are left vulnerable to predators like the round goby.

During the 1999-2001 spawning seasons, we assessed the potential impact of round goby predation on smallmouth bass offspring production and nest success in the Bass Islands, located in the western basin of Lake Erie. Our objectives were to measure the predation rate of round gobies on guarded and unguarded nests and to determine if round goby predation can lead to increased nest abandonment by nest-guarding smallmouth bass. In addition, because round goby provide a novel prey source for smallmouth bass, we also examined diets of nest-guarding and young-of-the-year (YOY) smallmouth bass. We used underwater cameras to record nest predation on guarded and unguarded nests (i.e., nests where the male was removed by an angler). Nest tracings and photographs were used to quantify the change in nest area and offspring abundance.



A male smallmouth bass guarding its nest containing hatched embryos and free-swimming fry.

Despite frequent attempts by round gobies to enter guarded nests, in over 10 h of video observations, we only once saw a round goby consume offspring from a guarded nest. When anglers removed nest-guarding smallmouth bass, however, round gobies quickly entered unguarded nests and consumed many offspring. In a catch-and-release situation, assuming 2 min for angling and handling plus 3 min for the male to return to its nest, round gobies consumed 400-1,000 offspring (see chart on right). Predation rate was higher on unhatched embryos (i.e., eggs) than on hatched embryos (commonly called wrigglers), possibly because wrigglers were more

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Students Capture Awards at the 27th Annual Larval Fish Conference

The winner of the Sally L. Richardson award for the best student presentation was **Tim Grabowski** for his presentation: "*Spatial and temporal habitat segregation by spawning fishes in the Savannah River, South Carolina and Georgia*," co-authored by **Jeff Isely.** Tim is a Ph.D. student in the Biological Sciences Department at Clemson University and Jeff is Co-acting Unit Leader of the South Carolina Cooperative Fish and Wildlife Research Unit. Jeff was also meeting host and Section president (so the fix was in?). Honorable mention went to **Ian Davenport** for his presentation "*A novel actin-based framework aids in the evolution of extreme egg size in chondrichthyan fishes*". John Wourms, who was keynote speaker, coauthored the paper. Both are also from the Biological Sciences Department at Clemson University.

The best poster award was presented to **Jacqueline Jenkins** for "*New trap design for settlement size fish larvae.*" Jacqueline and her co-authors: M. D. Greene, H. J. Walsh, and J. A. Hare are from the NOAA Laboratory, Beaufort, North Carolina. Congratulations to our award winners. The quality of all of the papers and posters was terrific. §

--- Jeff Isely

Tim Grabowski and his wife, Laura, display his Sally Richardson Award for his winning presentation.

Jacqueline Jenkins receives the Best Poster Award from incoming President Howard Browman.

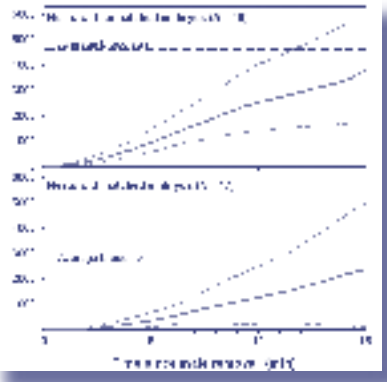
Audrey Geffen Becomes Section's First Regional Representative for Europe

It took only a brief look at the mailing list for *Stages* to realize that a growing number of our members are from western European countries, especially since the very successful meeting in Bergen, Norway. Our "international" regional representative position had evolved to serve the "Pacific Rim," and Iain Suthers has his hands full reporting on all the activity on the eastern side of the Pacific Ocean. It seemed a great loss not to hear what's going on in Europe, so I asked Section President Howard Browman to create a new position to report on early life history research activities in Europe. Within a matter of days Howard found his volunteer. Welcome aboard Audrey Geffen!

Audrey recently moved to Norway, where she is Professor of Biology at the University of Bergen. Her research activities usually fit into three main areas: aquaculture (larval and juvenile marine fish), larval fish ecology, and otolith research. Our european members should keep Audrey posted about their work so she can announce it in *Stages*. §

North Central...continued from p. 6

cryptic and in lower densities than eggs. We estimated that round gobies could consume an entire brood in just over 15 min, an important consideration because the time it takes an angled male to return to its nest is highly variable and dependent on angling time, exposure to air, and distance of release from its nest. Despite the high predation rate on non-mobile embryonic stages, round gobies were only successful at consuming embryos, not free-swimming fry or juveniles.



Number of smallmouth bass offspring consumed by round gobies vs time since nest-guarding male was removed by an angler. Figure adapted from Steinhart et al. *(2004; Trans. Am. Fish. Soc. 133:121-131).*

Surprisingly, nest predation did not cause males to abandon their brood more frequently than males that were not caught, but angling alone reduced the probability that a nest was successful by 5%. In a limited brood reduction experiment, we removed as much as 75% of the brood and most males continued to guard their nests. We created a model to predict optimal male behavior (e.g., guard or abandon a brood) and determined that male smallmouth bass in Lake Erie were likely to guard even small broods because they have a relatively low expected future fitness, a combination of high mortality from angling and low probability for nest success due to storms. A low expected future fitness causes males to guard small broods because the probability of successfully reproducing in the future in low. This may not be the case in other lakes where males have a higher expected future fitness and, in those lakes, nest predation could induce nest abandonment.

But for the round goby, there is no free lunch. We collected YOY smallmouth bass from July through September 1999-2001, to measure their growth and quantify their diets. Historical data, from published reports and museum samples, were used to compare diet and growth of YOY smallmouth bass from periods before the round goby invaded. During 1999-2001, the frequency and biomass of fish in the diet of YOY smallmouth

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Publications

Available now: Early Life History of Fishes in the San Francisco Estuary and Watershed

F. Feyrer, L.R. Brown, R.L. Brown, and J.J. Orsi, editors

This book is the primary source of information on the early life history of fishes in the San Francisco Estuary and its watershed. There has been a large body of research and monitoring conducted in the system; however, very little of it has been published. This book contains more papers on fish early life history in the system than all previous publications combined. There is a great deal of interest in the system itself, as it is the largest estuary on the Pacific Coast of the United States. In addition to providing a resource for people generally interested in the system, original papers on feeding ecology, growth, environmental requirements of species, community ecology, emerging modeling techniques, development, and toxicology will benefit scientists specializing in a variety of disciplines.

- Stock #540.39, paper
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- Phone: (678) 366-1411
- Fax: (770) 442-9742.
- Email: afspubs@pbd.com

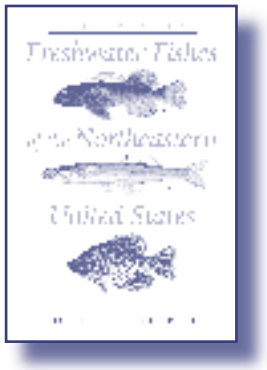
Other Recent Publications of Interest

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.

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.



Available now: Freshwater Fishes of the Northeastern United States - A Field Guide

R.G. Werner

Informative, accurate, and easily comprehended by the scientist and the layperson, this book will be a useful tool for anyone interested in northeastern United States fish identification, life history, and distribution. Robert G. Werner presents the most current information available to aid in identifying the most distinguishable characteristics. The guide includes illustrations that accurately depict the morphology and color of fishes in the region. A source of detailed information, the book goes beyond simple identification to include complete species and reference lists.

- 6 x 9, 280 pages, 112 black-&-white and 134 color illustrations
- Publication date: 2004
- ISBN: 0-8156-3020-4
- Cloth $49.95

Available now: 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

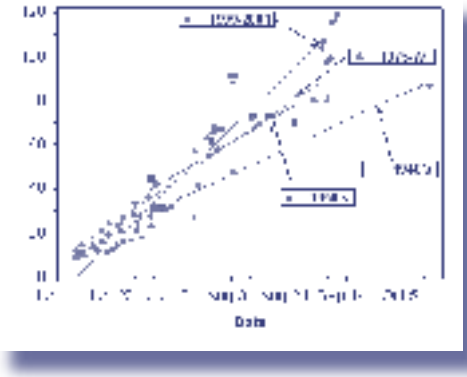
This volume describes the characteristics of the Ictaluridae family, and provides a detailed pictorial guide. Subtopics within each species description include range, distribution, occurrence, spawning, eggs, development, ecology of early life phases, and more. This book serves as both a ready guide to help identify individual larval fish, and as a reference for those concerned with the overall health of the ecosystems or fisheries that they are monitoring.

- List Price: $119.95
- ISBN: 0849319196
- Publication Date: 2003
- Number of Pages: 232

North Central...continued from p. 7

bass was higher than during the 1970s, before the round goby invaded. During our study, round gobies comprised 75% of YOY diets by weight. This change in diet has resulted in an increase in YOY smallmouth bass growth rate (Figure 3), which could not be attributed to changes in smallmouth bass density (higher during our study than in the 1970s) or temperature. Instead, it appears that round gobies are facilitating the transition to piscivory for YOY smallmouth bass because 1) high densities of round gobies provide a hyperabundant prey source 2) round gobies may be easy for smallmouth bass to handle, as round gobies are relatively soft-rayed and tubular in shape, and 3) round gobies are highly fecund and produce multiple clutches during the summer, leading to ample numbers and sizes of round goby available for consumption.

In summary, round gobies were observed to be voracious predators of smallmouth bass offspring,



Change in total length of YOY smallmouth bass in the Bass Islands, Lake Erie. Growth rate was higher in 1999-2001 (1.2 mm/d) than in the 1940s (0.58 mm/d; t = 6.81, p < 0.001), 1950s (0.73 mm/d; t = 2.62, p < 0.01), or 1970s (0.85 mm/d; t = 4.67, p < 0.001). Adapted from Steinhart et al. *(in press. J. Great Lakes Res).*

but only of the non-mobile embryonic stages and only when the nest was left unattended (i.e., the male was removed by an angler). Although the effect of round goby predation on recruitment of smallmouth bass is unknown, the risk may be great. Thus, in a preemptive move based, in part, on this predation risk, the Ohio Department of Natural Resources recently changed angling regulations on Lake Erie by restricting angling to catch-and-release only during the spawning season. Our findings also stress the importance for encouraging anglers to promptly and carefully handle and release smallmouth bass during the spawning season to minimize the predation risk to unguarded offspring. Fortunately, predation during angling did not induce nest abandonment in Lake Erie, but differences in parental behavior suggest this may not be true in other systems. An unforeseen twist to this story is that YOY small-

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Scientific Program of the 28th Annual Larval Fish Conference

Oral presentations:

The evolution of viviparity and maternal embryonic relationships in fishes. John Wourms

Variability in swimming performance and behavior of newly-settled coral reef fishes. Kirsten Grorud-Colvert*, Su Sponaugle

Effect of diet on otolith composition in an estuarine piscivores. J. A. Buckel, B. L. Sharack, V. S. Zdanowicz

Effect of temperature and salinity on routine metabolism of juvenile gray snapper *Lutjanus griseus*. M. J. Wuenschel, A. R. Jugovich, and J. A. Hare

The arrival of red drum larvae to subtropical seagrass nursery: a length-based approach combined with enclosures studies. Perez-Dominguez, R.*, S.A. Holt, C. Pratt, M. Fencil and G.J. Holt.

Maternal body burdens of methyl mercury impair survival skills of offspring in Atlantic croaker *Micropogonias undulatus*. Lee A. Fuiman, Maria C. Alvarez, Ian D. McCarthy, Cheryl A. Murphy, and Kenneth A. Rose

Survival potential of red drum larvae is reduced by exposure to a herbicide (atrazine) at environmental levels. Maria C. Alvarez* and L.A. Fuiman

Winter recruitment of Age-0 *Pomatomus saltatrix* into a Northeast Florida estuary; aspects of distribution and diet. Peter Clarke and Francis Juanes

What genetics variation of percid fish populations say? Asiful Islam

Relationships between larval ingress and juvenile fish survey data in North Carolina. H. J. Walsh, J. C. Taylor, and J. A. Hare

Population structure of red drum Sciaenops ocellatus as determined by otolith chemistry. Heather M. Patterson, Richard S. McBride, Neal Julien

Spatial and temporal patterns in settlement of larval red drum *Sciaenops ocellatus* in a Gulf of Mexico seagrass meadow. M. Fencil, S. A. Holt, C. Pratt, R. Perez-Dominguez, G. J. Holt

Use of stocked larvae to increase abundance of sub adult red drum *Sciaenops ocellatus* in a South Carolina estuary. Mike Denson*

Spatial and temporal habitat segregation by spawning fishes in the Savannah River, South Carolina and Georgia. Tim Grabowski* and Jeff Isely.

Do larval traits influence our interpretation of juvenile habitat quality? Steven P. Searcy*, David B. Eggleston, Jon A. Hare

The development of the larvae of *Apodichthys flavidus*, a member of the family Pholidae. Lisa De Forest*

Habitat and predator influence on the abundance of juvenile red snapper *Lutjanus campechanus*. Stephen Szedlmayer, Amy Piko

Survival, movement, and residency of hatchery-reared red snapper on artificial reefs in the northern Gulf of Mexico. Allison Hruskoci*, Steve Szedlmayer

A comparison of the fish communities between artificial reefs with and without attached food resources. Rebecca Sutterer*, Stephen Szedlmayer

Composition and possible retention of a nearshore larval community in a Portuguese rocky coast. Rita Borges*, Emanuel J. Gonçalves

Effect of temperature and salinity on survival, growth and condition of juvenile black sea bass *Centropristis striata*. H. L. Atwood, S. P. Young*, J. R. Tomasso

The effects of San Juan County, Washington, marine protected areas on larval rockfish production. Sharon Herzka

Resistance of cobia Rachycentron canadum juveniles to low salinity, low temperature and high environmental nitrite concentrations. H. L. Atwood, S. P. Young*, J. R. Tomasso

Prey search behaviour in young-of-the-year Atlantic lumpfish *Cyclopterus lumpus*. Howard I. Browman, R. Christopher Chambers and Penny Kuhn

The developmental immunotoxicology of co-planar PCBs in the mummichog *Fundulus heteroclitus*. L. Grabowski* and C. Rice

A novel actin-based framework aids in the evolution of extreme egg size in chondrichthyan fishes. I. Davenport* and J. Wourms.

Effects of size and age truncation on hogfish *Lachnolaimus maximus* egg output in Florida. R. S. McBride, P. E. Thurman, L. H. Bullock, and M. R. Johnson.

Spawning activity of two species of pelagophilic fishes in the Upper Coosa River Basin, Georgia. Bill Davin, Anna Rahn, and Laura Dobbins

An Experimental eel ladder: techniques for collection and upstream passage of American eel. S. D. Leach, D. W. Cooke, W. A. Crosby, and J. Gibbons

Factors influencing the otolith size – fish size relationship for larval tilapia. **Quenton Fontenot** and Jeff Isely.

Shifts in food-web dependencies in estuarine fishes as tracers of habitat changes. **Sharon Herzka**

The ontogeny of hematopoiesis in the marine teliost *Leiostomus xanthurus*, and a comparison with the oyster toad fish, *Opsanus tau*. **Govoni, J. J.,** M. A. West, G. Gudette, and T. E. Jenkins.

Immigration of larval flounder *Paralichthys spp*. through the Aransas Pass Texas tidal inland. **S. Holt**

Evaluation of shortnose sturgeon spawning in the Pinopolis Dam tailrace, South Carolina. J. J. Isely, M. S. Duncan, and D. Cooke.

Poster presentations:

Description of an unusual macrourid larva (Teleostei: Gadiformes) from San Juan Island, Washington, U.S.A. Morgan S. Busby

Capelin (Mallotus villotus) and age-0 walleye pollock (Theragra chalcogramma) in the western Gulf of Alaska: Potential competitive interaction. C. Deliyanides, M. T. Wilson, & J. T. Duffy-Anderson

New trap design for settlement size fish larvae. M. D. Greene, J. A. Jenkins, H. J. Walsh, & J. A. Hare

Energy density of juvenile fishes: Are current predictive equations adequate for early life stages? A. R. Jugovich, M. J. Wuenschel, & J. A. Hare

Distribution of two types of Centropristis larvae on the US Atlantic coast shelf. K. E. Marancik, M. D. Greene, H. J. Walsh, & J. A. Hare

Spatial pattern and patchiness of eggs, larvae and juveniles of European hake (Merluccius merluccius) from the NW Mediterranean. F. Maynou, M. P. Olivar, & M. Emelianov

Propagation potential of the non-native lionfish Pterois volitans miles in the Atlantic. James Morris & Jeff Govoni

Red drum (Sciaenops ocellatus) settlement dynamics within seagrass nursery habitats. R. Perez-Dominguez, S. A. Holt, C. Pratt, M. Fencil, & G. J. Holt

From viscous to inertial forces: Defining the transitional hydrodynamic regime of larval fish swimming in red drum, Sciaenops ocellatus. B. L. Sarkisian & L. A. Fuiman

The larvae and early juveniles of three Gila River Basin cyprinids: Agosia chrysogaster, Meda fugida, and Rhinichthys cobitis. D. E. Snyder, K. R. Bestgen, S. C. Seal, & C. L. Bjork

Entrainment/Entrapment Monitoring and Sample-Processing and Taxonomic Services

A new round of larval fish entrainment/entrapment monitoring programs (316b work) and FERC relicensing of power plants and dams is underway. ELHS is the logical and ideal source of relevant expertise, but are we prepared to offer advice? Perhaps someone who is knowledgeable in 316b work could do a review article for *Stages*.

More importantly, there are many power-plant, hydro-plant, and consulting-firm biologists who are, or will be, looking for sample-processing and taxonomic services in support of their related investigations and monitoring programs. Consider this a call for contact information on providers of such services. If you would like to be listed, send your information to ELHS webmaster Jeff Buckel (jeffrey_buckel@ncsu.edu). He has already agreed to compile the list and post it on the ELHS website. This will be a useful source of persons, labs, and firms that provide such services. The Larval Fish Laboratory at Colorado State University is certainly one such provider, but there are sufficient opportunities for more providers.

An e-mail list-serve might be an even more effective means of getting this material out. In fact, we could use a list-serve for rapidly communicating a variety of things to the ELH community. Is anyone interested in starting such a service? §

--- Darrel E. Snyder

Section Business

The Ahlstrom Career Achievement Award: Nominations are now open

Following the decision made at the 27th Annual Larval Fish Conference in Santa Cruz, California, to establish a career achievement award for the section, ELHS President Howard Browman has established a committee to receive nominations and select recipients of the Elbert H. Ahlstrom Career Achievement Award. The committee is chaired by Art Kendall and the members are Churchill Grimes, Jeff Isely, and Jeff Govoni. We are now seeking nominations for this award and would like to honor the first recipient at the 29th Larval Fish Conference in Barcelona. The following are the procedures and guidelines for selecting awardees (as published in *Stages* 23:3).

The award may be conferred annually, but no more frequently, and the selection committee may elect not to confer the award if suitable candidates were not recommended. The committee shall solicit nominees for the award from the ELHS membership by various means, but shall publish a solicitation for nominees in *Stages*, the newsletter of ELHS. The committee chair shall develop and implement a method for selecting the recipient from among the candidates nominated. After selection has been made the President of ELHS will be notified, and the President shall notify the recipient with a formal letter and a personal telephone call. The name of the selectee shall remain confidential until presentation of the award. The award consists of a certificate mounted in a walnut plaque and travel and related expenses (if needed) to attend the annual meeting to receive the award.

Nominations shall consist of a letter of nomination and a complete curriculum vitae for each candidate. The letter of nomination should come from a colleague familiar with the nominee's career achievements, and shall be the sole piece of advocacy for the nominee, so it needs to be sufficiently detailed to demonstrate how the nominee meets the criteria for the Ahistrom Award. The chair of the selection committee shall prepare a brief final report to the executive committee of ELHS along with a short biographical sketch of the recipient with justification for why they are being given the award for the presentation ceremony. The following guidelines are suggested for selection of recipients:

1. North American residents are the preferred recipients, but the award may be given to any suitable candidate.

2. Membership in the American Fisheries Society is a positive attribute, but is not required. AFS membership could tip the balance between otherwise equally-deserving candidates.

3. Living recipients are preferred, but the award may be given posthumously.

4. The Committee considers not only candidates who, by virtue of their position and personality, are widely known, but may also have labored quietly and are less well-known, but who have made sustained and important contributions.

5. Candidates should be clearly identified with the early life history of fishes in the marine or freshwater environments. Contributions to any discipline within a broad spectrum of activities should be considered appropriate for candidates, including systematics.

6. Runner(s)-up for the award for any given year will be considered automatically for the award in the subsequent year. Each year the committee will decide at the time of their deliberations to select the awardee which, if any, remaining candidates will be carried forward to the next year. §

--- Art Kendall

Update on Election of Officers

The Section has been behind schedule in nominating candidates for Officer positions, and in running elections. In order to rectify this, and put us back on schedule, the next election will be held at the ELHS's business meeting at 29th ALFC in Barcelona. Thereafter, we will endeavor to hold elections on the regular schedule mandated by the Section bylaws so that officers-elects are in place for two years. To facilitate future elections, we are currently exploring the possibility of using an online service such as that being used by the AFS and other scholarly societies (see www.campus-vote.com).

The ELHS President-elect and Secretary-elect positions are open. So far, it looks like the election will be uncontested, since only one candidate for each position has agreed to be nominated. Their biographies (provided by them) are published below. As you will see, both are well-known ELHS members who will surely do the job for us. However, if you, or anyone you know, is interested in being nominated for an officer position in this (or a future) election, please contact Howard Browman (howard.browman@imr.no).

I will reiterate here what you have heard from every other ELHS president: *we need **YOU**!* The AFS-ELHS retains its vibrancy and coherence because of a dedicated core group of your colleagues who year-after-year carry most of the burden. If you value the ELHS, and the ALFCs, please volunteer your services. The 2-year term of these positions is relatively short and, as I can tell you from personal experience, there are a large number of former officers out here ready and willing to help you learn the ropes!

Candidate Biographies

Candidate for President-elect: Joseph A. Brown

Dr. Joseph A. Brown is currently a Professor at the Ocean Sciences Centre (OSC) of Memorial University of Newfoundland in St. John's, Nfld., Canada. Joe's research uses a laboratory-based, experimental approach to study the early life history of marine and freshwater fishes. In his work, experimental studies on larval fishes are framed within the context of Behavioral Ecology theory in order to examine the survival value of behavior at various times during ontogeny. This focus also continues through the early juvenile stage, where his lab combines laboratory and field studies to examine the constraints on survival during this early life stage. On the applied side, Joe is involved with studies on developing alternative marine finfish species for aquaculture.

He was Interim Director of the OSC from Jan 2003 - July 2004 and has served on the Board of Directors of the Aquaculture Association of Canada and as Treasurer, Vice-President, President-Elect, President and Past President over the period 1991 – 1998. He is currently a co-theme leader and member of the Research Management Committee of AquaNet which is one of 22 Network Centres of Excellence in Canada and is the only aquaculture research network in North America. He also served on a Natural Sciences & Engineering Research Council Strategic Grant Panel for 3 years (2000-2002). He has authored or co-authored over 100 peer-reviewed articles and has supervised over 40 graduate students.

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J.H.S. Blaxter Best Student Poster Award Established

At the business meeting of the 28th Annual Larval Fish Conference, the members voted to establish a best student poster award in honor of Prof. John H. S. Blaxter for his contributions to early life history research. The idea for a best student poster award was first proposed at the 23rd Annual Larval Fish Conference at a special session honoring John. This session was organized by the "Blaxter Boys," a group of researchers who had worked with John and benefited from his tutelage over the years.

John Blaxter's career has been truly outstanding. John received first-class honors in Zoology at Oxford. At that time the Department was headed by Sir Alister Hardy, and it was Sir Alister that recommended John for an appointment to the Marine Laboratory, Aberdeen, Scotland. At Aberdeen, John published a series of papers on herring biology with an emphasis on larval development. John's next position was at Aberdeen University, where he spent five years before moving to the Oban Laboratory of the Scottish Marine Biological Association, where he remained until he retired. It is at Oban where the "Blaxter Boys" became acquainted with John and his research.

Over a period of 40 years John published over 140 papers (his first in 1953 was published in *Nature*) and books and he directed the research of approximately 20 Ph.D. students. His work, focusing on aspects of larval fish development, physiology and behavior have guided many of us in our own research and greatly affected our careers. Indeed, Lee Fuiman and Bob Werner (two of "Blaxter's Boys) acknowledged John's great influence in the dedication of their textbook, *Fishery Science: The Unique Contributions of Early Life Stages*.

The winner of this year's award, which was given at the 28th Annual Larval Fish Conference, was Jacqueline Jenkins of the NOAA Beaufort Laboratory for the poster entitled, "New Trap Design for Settlement Size Fish Larvae". Her co-authors were: Mike Green, Harvey Walsh and Jon Hare. §

--- Don Hoss & Lee Fuiman

Candidate for Secretary-Elect: Denice Drass

Denice sends the following: "I have been involved with the study of larval fish since 1992 when I received my master's degree working on leptocephali in the Bahamas. I joined the National Marine Fisheries Service, Pascagoula lab in 1993 and have worked with a variety of species of larval fish while there. I am currently working on a Ph.D. at the George Washington University studying fish systematics utilizing tilefish larval characteristics. I have attended most of the Larval Fish Conferences since the joint meeting in New Orleans in 1996 (missed 1998 and 2002). I have presented both posters and papers at various meetings. I was an affiliate member for a few years and became a full member in 2000. I have watched various colleagues helping the society by serving as Officers and always thought that when I had some more experience, that it would be my turn to volunteer. I will try to preserve the work done by previous secretaries in maintaining current contact information for the membership and recording accurate minutes of the business meetings." §

New Website for Annual Larval Fish Conferences www.larvalfishcon.org

This is the new online home of the Annual Larval Fish Conferences (ALFCs)! The URL is already active, although at the time of this writing the only content is a place holder front page for 29th ALFC (Barcelona, 11-14 July 2005).

Using as its template the website for LFC2002 (www.fishlarvae.com/lfc), the new ALFC site is intended to provide as much information as possible on past (as archival pages), current, and future ALFCs. Another major objective is to simplify the task, and reduce the cost and effort, of the ALFC local hosts. We will also apply the most modern (and secure) internet commerce tools to facilitate online payment of conference registration fees and Early Life History Section affiliate membership dues. Finally, the site will make it possible to rapidly communicate with ELHS members, and participants in past ALFCs, using the infamous "bulk e-mailings" that delegates of LFC2002 are overly familiar with! Hopefully, these will not get labelled as SPAM by your institutional servers…?!

Site content will be added in stages (no pun intended), beginning with complete information on 29th ALFC (by late September to early October 2004), and then 30th ALFC. Archival information on all previous ALFCs for which electronic databases are available will also eventually be added.

Site development is being handled by www.SimboliQ.com, in coordination with Howard Browman. Please contact Howard (howard.browman@imr.no) if you have any questions, concerns or suggestions.

Finally – since all of this greatly facilitates hosting an ALFC, we hope that some of you will step forward and offer to host a future meeting. In that regard, see the related news piece on p. 5 for the schdule for future ALFCs. Please contact Jeff Govoni (jeff.govoni@nooa.gov) if you are interested. §

ELHS Membership is Growing

Just before stepping down as ELHS Secretary, Rich McBride took time to assess the Section's membership status. The tally (below) shows we are enjoying healthy growth.

ELHS Membership

	Membership year		
Category	2001-2002	2003-2004	% increase
full	248	357	144%
affiliate	32	64	200%
total	280	421	150%

2003-2004 Geographic Distribution

USA	340
Canada	30
Western Europe	21
Pacific Rim	17
Central/South America	5
Other	8
Total	421

REMINDER

Deadline for sending materials to include in the next issue of ***Stages****:*

January 7, 2005

North Central...continued from p. 8

mouth bass surviving early predation by round gobies return the favor by consuming many round gobies, leading to increased growth rates of YOY smallmouth bass. Revenge can be sweet. §

European Region...continued from p. 3

established the laboratory as a source of a wide diversity of species for both research and display purposes.

European research on the early life history stages is very active, and very diverse being supported by programmes in fisheries, ecology, developmental biology and aquaculture. But be-

Editor's Ramblings

A New Job...For Me and Maybe One For You

Once again, our Regional Representatives have provided a lot of material for *Stages*. There is so much here that I had to continue using the smaller type I began to use in the June issue. This may be a regular occurrence, so keep your reading glasses nearby. What is even more amazing is that this issue contains material from only three of the six regions. I don't know what I would have done if all of the reps had material to send. Despite these minor complaints, it's all good.

There is one item I neglected to put in this issue's People section because of lack of space (or was it because it is about myself?). As of September 1, I have taken over as Director of the University of Texas Marine Science Institute, which carries with it the Chairmanship of our academic department. This is likely to take me away from research, so I am hoping to hire someone through which I can participate vicariously. Hopefully, you have seen the advertisement for a **Research Scientist in Vertebrate Behavior and Ecology at the University of Texas**. If not, check it out (www.utmsi.utexas.edu/institute/hr/employment.htm) and call me right away (361-749-6730). The deadline was October 1, but there might be a chance to get an application in a little late.

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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Join ELHS

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

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

To become an affiliate member, 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:

Kathy Lang
Treasurer, AFS-Early Life History Section
NMFS/NOAA
166 Water Street
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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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