

STAGES

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

Volume 35, Number 3

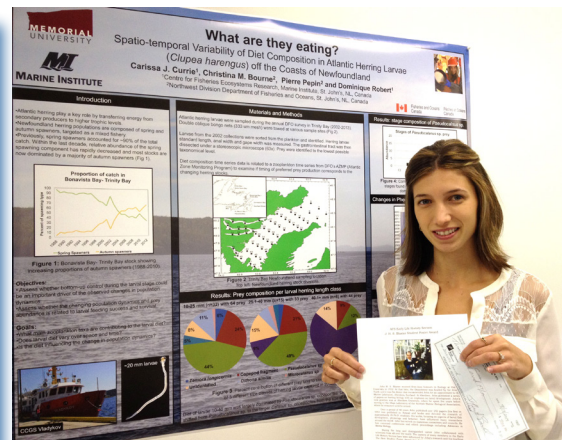
Lee A. Fuiman, Editor

October 2014

Congratulations to Student Award Winners!

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Honored students. Left: Richardson Award winner Alison Deary (center) with honorable mentions, Zachary Feiner and Nasheika Guyah. Right: Blaxter Award winner Carissa Currie proudly holding her award in front her poster!

ELHS Back Then

15 years ago: ELHS initiates subvention program to support publications of members.

20 years ago: Bibliographic committee announces that electronic versions of Bob Hoyt's bibliography (through 1987) are available for distribution, containing 13,700 bibliographic entries.

25 years ago: Fred Binkowski steps down as Editor of STAGES after serving for the 1st 10 years of publication."

30 years ago: ELHS established as an official American Fisheries Society Section.

35 years ago: Third LFC held at Western Kentucky University with 73 participants (none marine).

The Sally L. Richardson Award for the best student paper and the John H. S. Blaxter Award for the best student poster were presented at the 38th annual Larval Fish Conference in Québec. The winner of the Richardson award was Alison Deary of the Virginia Institute of Marine Science for her paper, *Ontogenetic Changes to Sensory Modality in Early Life History Stage Drums (Family Sciaenidae) from the Chesapeake Bay*, which was co-authored by Brian Metscher, and Eric Hilton. The winner of the Blaxter award was Carissa Currie of the

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President's Message



In my first message to you as the incoming president of our Early Life History Section, there are a few items that need to be communicated. However, before I roll through that list, let me first thank (on all of our behalf) Dominique Robert and Pascal Sirois (and their gang of helpers) for organizing our 38th annual Larval Fish Conference in Québec City, Québec, Canada. What a fantastique meeting!!! The 4-day event included six theme session packed with more than 100 oral and 20 poster presentations. There were many highlights for me including: i) the balance of research presented on different (marine, estuarine, and freshwater) species / topics; ii) the high number of excellent student presentations; iii) the special session honoring William C. (Bill) Legget, our society's fourth winner of the Elbert H. Ahlstrom Lifetime Achievement Award; and iv) a great banquet dinner at the Québec Aquarium. In short, magnifique – well done Laval (Larval!) University!

Previous president's messages place a clear emphasis on two items: 1) our budget situation, and 2) our membership and the importance of volunteer activities. The first message also tends to include a little bit about the new president that you elected into office about 1.5 years ago. Not wishing to be a trendsetter, I will not deviate from this format.

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

January 9, 2015

News from the Regions



European Region

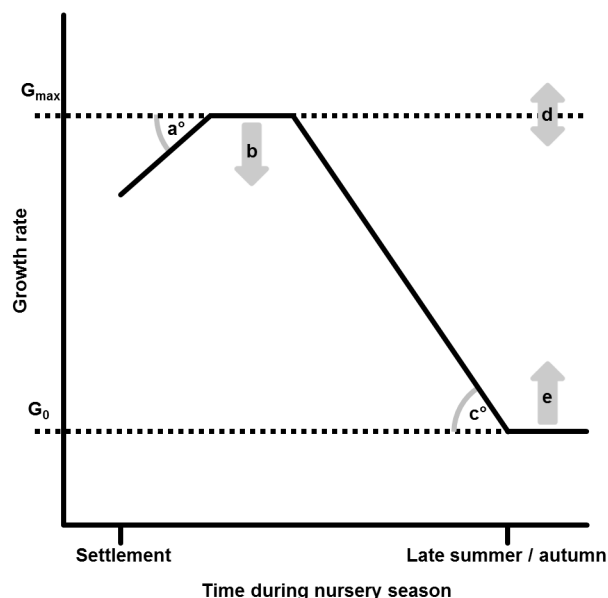
Hubert Keckeis

What makes a good nursery ground? New answers, and more questions, after a decade of collaborative research on YOY plaice

For more than a decade, collaborations between the University of Delaware (USA; Timothy Targett and Benjamin Ciotti), the Scottish Association for Marine Science (UK; Michael Burrows, Robert Batty and Clive Fox), the Institute of Marine Research (Norway; Richard Nash) and the University of Bergen (Norway; Audrey Geffen) have been investigating the growth dynamics of young-of-the-year European plaice *Pleuronectes platessa* ('YOY plaice') in nursery areas. Although variation in individual growth rate during juvenile life stages can be an important determinant of fish population processes, causes of this variation *in situ* are poorly understood, even in intensively studied species, such as plaice. The challenge is to measure growth in the field at the small, individual scales at which controlling factors vary while achieving the broad spatial and temporal coverage relevant to population processes.

To meet this challenge, Ciotti et al. (2010) performed a series of laboratory

and field experiments to develop a fine-resolution, high-throughput, RNA-based index of growth rate for YOY plaice and applied the index at nursery beaches along western coasts of the British Isles. The index estimates instantaneous growth rate of individual plaice from white muscle RNA and DNA concentrations, body mass and water temperature, and is sensitive to short-term variations in food conditions. Variations in RNA-based growth estimates at small spatial (500 m alongshore, among depths) and temporal (daily) scales, indicated fine structure in functional attributes of sandy beaches used as fish nurseries (Ciotti et al., 2013c). An investigation of longer-term temporal dynamics at seven beaches in two years revealed a substantial linear decline in growth rate during late summer (Ciotti et al., 2013a).



Conceptual representation of current understanding of patterns of growth variation in YOY plaice. Temporal dynamics of growth rate from settlement to the end of the nursery period (solid line) are relatively well characterized: growth approaches maximum rates (G_{max}) in early summer, then declines gradually to slow, near-zero rates (G_0) in late summer and autumn. There is some evidence that growth increases during the early post-settlement period ('a'), but confirmation is required. Possible sources of spatial and interannual variation in temporal dynamics are represented in grey. Since growth rates tend to converge at a common, low level in late summer, spatial and interannual variation is principally in G_{max} ('d') in early summer and the speed of the growth decline to G_0 ('c'). Nonetheless, the period of rapid growth in early summer can be below maximum ('b') and higher growth rates can be sustained in late summer ('e') in some locations and years. Figure reproduced from Ciotti et al. (2014) *Journal of Sea Research* 90:64–82.

The slope and intercept of this decline varied among beaches and years, ...continued on p. 12

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vacant, election pending

Secretary-Elect

vacant, election pending

**HELP KEEP
STAGES INTERESTING...**

Send us a report of your
research activities.



Pacific Rim Region

Akinori Takasuka

Members from the Pacific Rim region really enjoyed the 38th Larval Fish Conference in Québec City. We thank Pascal and Dominique again for their efforts in organizing such a fantastic event in the beautiful city.

For this issue, I am happy to receive two news items from the former Pacific Rim Regional Representative, Iain Suthers, of the University of New South Wales (UNSW), Sydney, Australia.

Australia's new research vessel Investigator

Australia's brand new oceanographic research vessel *Investigator* is arriving in Australia early in September after 3 years of design and construction. The 93-m-long vessel is owned and operated by Australia's government marine research agency, CSIRO Marine & Atmospheric Research, based in Hobart. See csirofrvblog.com.

It has been carefully designed to support not only the traditional fields of biological oceanography and fisheries, but specifically includes marine geology

capability with up to 20-m-long sediment cores, and marine atmospheric research. The vessel can support up to 45 scientists and students, for up to 60 days with approximately 30 crew, from the ice-edge to the tropics. The vessel has guaranteed ship time available up to 180 days per year for the next 4 years, and we hope to increase that to 300 days per year.

Australia's Integrated Marine Observing System

Australia's Integrated Marine Observing System (www.imos.org.au) will soon include monthly sampling for ichthyoplankton at some of the seven National Reference Stations, starting with the moorings off Brisbane, Sydney, Hobart, and Adelaide. IMOS has been collecting phytoplankton and zooplankton at the moorings for up to 15 years, but larval fish have only been sampled long term in a CalCOFI style off South Australia. A climatology of ichthyoplankton is needed in Australia, after the pilchard virus outbreaks in the mid-90s, or the strong 1998 ENSO event, or in relation to daily egg production surveys being conducted off eastern and southern Australia. One of the challenges for long-term observing of ichthyoplankton will be sorting and identification, but on the other hand, we hope to improve ichthyoplankton capabilities in younger scientists.

In addition, I would like to introduce a nice paper from Iain, which was published in *Limnology and Oceanography* in 2013.

In a new paper on the larval fish assemblage and submesoscale eddy, Mullaney & Suthers (2013) opportunistically sampled a small submesoscale eddy of the East Australian Current, and discovered a concentration of larval and pelagic juvenile fish 10- to 20-fold more abundant than on the adjacent shelf.



Western Region

Dan Margulies

from: the Inter-American Tropical Tuna Commission

Studies of Ocean Acidification Effects on Yellowfin Tuna Early Life Stages

The Early Life History group of the Inter-American Tropical Tuna Commission (Dan Margulies, Vernon Scholey, Jeanne Wexler, and Maria Stein) conducted joint experimental studies in late 2011 to investigate the potential effects of ocean acidification (OA) on eggs and early larval stages of yellowfin tuna. The studies were conducted in collaboration with colleagues at the Secretariat of the Pacific Community (SPC), Macquarie University, Australia, University of Gothenburg, Sweden, Max Planck Institute for Meteorology, Germany, and Collecte Localisation Satellites, France. This study was first described in the October 2011 issue of *STAGES*, and here we present the general findings from the study.

Two separate experimental trials were conducted in October and November of 2011 at the IATTC's Achotines Laboratory, Republic of Panama. The experiments examined the potential effects of ocean acidification (expressed as partial pressure of carbon dioxide, $p\text{CO}_2$) on the egg stage duration, larval growth (length and dry weight) and survival of yellowfin. The $p\text{CO}_2$ levels tested ranged from present day ($\sim 400 \mu\text{atm}$) to levels predicted to occur in some areas of the spawning habitat within the next 100 years ($< 2500 \mu\text{atm}$) to 300 years ($\sim < 5000 \mu\text{atm}$) to more extreme levels ($\sim 10,000 \mu\text{atm}$).

In the first trial, which was the more reliable based on stability of physical variables, there was evidence for significantly reduced larval survival (at mean $p\text{CO}_2$ levels $\geq 4730 \mu\text{atm}$) and growth (at mean $p\text{CO}_2$ levels $\geq 2108 \mu\text{atm}$) after 7 days of feeding. These results are relevant to near future (100-



Australia's new research vessel Investigator

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...continued on p. 4

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

300 years) predicted levels of OA in the Pacific Ocean. In the second trial, results were more variable, although there was a non-significant trend of lower survival and growth with increasing $p\text{CO}_2$ within near future predicted levels. Egg stage duration was prolonged in all treatments relative to the control (present day).



First feeding larvae of yellowfin tuna (IATTC photo).

On average, the magnitude of the significant decreases in survival (up to 3-fold) and growth (up to 10% deficits) due to OA indicated in the first trial are of roughly the same magnitude as the effects of dominant biological and physical factors found to influence survival and growth of yellowfin larvae in previous laboratory studies by the IATTC. Further intensive studies are indicated to confirm our estimates of potential effects of OA on early life stages of yellowfin. In particular, the potential interactive effects of OA with water temperature will be investigated, since ocean temperature is predicted to increase along with OA under future climate change projections. Also, the possible influence of adaptation to OA and rapid selection for resistance to OA in tuna populations requires future study.

The study results are presented in the following publication:

Bromhead, D., V. Scholey, S. Nicol, D. Margulies, J. Wexler, M. Stein, S. Hoyle, C. Lennert-Cody, J. Williamson, J. Havenhand, T. Ilyina, and P. Lehodey. 2014. The potential impact of ocean acidification upon eggs and larvae of yellowfin tuna (*Thunnus albacares*). *Deep-Sea Research II*, [dx.doi.org/10.1016/j.dsr2.2014.03.019](https://doi.org/10.1016/j.dsr2.2014.03.019). §



Northeast Region

Dave Richardson

from: Chris Chambers, NOAA Northeast Fisheries Science Center, Sandy Hook, New Jersey

Life and research are busy on the northern tip of the Jersey Shore. Here is a brief summary of activities underway in the Chambers' Lab at the NOAA Northeast Fisheries Science Center's Howard Laboratory at Sandy Hook, New Jersey. Most of our research effort over the last several years has focused on two broad themes. First, and with funding from NOAA's Ocean Acidification Program, we have been screening for effects of elevated CO_2 displayed in the early life stages of a variety of local ichthyofauna. To date, we have conducted five experiments on CO_2 and costressor effects in summer flounder and winter flounder. At the outset, we expected CO_2 effects to be species- and life-stage specific, to be subtle, and possibly to be revealed in none, one, or several of many possible phenotypic expressions. Hence, we took an adaptive approach in which we cast a broad inferential net – evaluating species of different ecologies, inspecting an array of responses, and challenge the target

species with a broad range of levels of our experimental treatments. Our results to date show that our two target flatfishes differ in their responses to elevated CO_2 , that their responses are conditional on the value of costressors, and that the pattern of responses are interpretable in the context of the stability of water chemistry of their resident habitats. Our initial summer flounder work (Chambers et al. [dx.doi.org/10.5194/bg-11-1613-2014](https://doi.org/10.5194/bg-11-1613-2014)) found an inverse relationship between CO_2 concentration and survival to hatching yet a direct relationship between CO_2 and early larval size and larval developmental rate. These sublethal, subtle effects in summer flounder are best interpreted in the context of their influence on the timing of ingress of young summer flounder and the trade-off between offshore residence of pelagic larvae through winter versus inshore inhabitation by settled juveniles prior to their first winter. We subsequently expanded these studies to include responses from fertilization rates, to gene products, to larval behavior. Some of that work was reported by Candelmo et al. at LFC2014. We have also conducted meta-analyses of global studies on experimental response of marine fish early life stages to elevated CO_2 , and these results were also presented at LFC2014. In our next cycle of funding we plan on conducting: i) intraspecific contrasts of stocks that differ in historic habitat usage and ii) transgenerational

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The 2014 summer intern crew at the NOAA Fisheries NEFSC Howard Laboratory at Sandy Hook, New Jersey.

Bill Leggett Receives Ahlstrom Award

It was with great pleasure that Section members, colleagues, and friends gathered in Québec City at the AFS annual meeting to applaud the newest recipient of our Section's Elbert H. Ahlstrom Lifetime Achievement Award, William C. Leggett. Bill's career markers are exemplary – moving up through the professorial ranks in the Biology Department at McGill University (1970 to 1979) in Montreal to become Departmental Chair (1981), then Dean of Science (1986), and then Vice Principal, Academic (1991). In 1994, Bill and his wife Claire moved to Kingston, Ontario, where Bill assumed the position of Principal of Queen's University (1994-2004). Bill gathered the highest of accolades throughout his career, including receiving the Order of Canada and a Fellow of the Royal Society of Canada. He served on numerous and highly meritorious boards of directors and research guidance committees. His contributions have been recognized by, among others, honorary degrees from six Canadian universities and he has now received five honors from AFS, including the Award of Excellence in Fisheries Education for his exceptional contributions to undergraduate and graduate-level education, the Oscar A. Sette Award, and the Award of Excellence for outstanding research contributions to fisheries and marine ecology.

Most remarkably, during his entire career, Bill remained active in research, publishing, and mentoring. He is author or coauthor on over 185 publications, many very highly cited, and over a third relate directly to fish

early life history research. He advised 28 M.Sc. and Ph.D. students, and provided guidance and support for 17 post-doctoral research associates. His studies and those of his students and research associates have dealt with research topics that range from freshwater to open oceans, from individuals to ecosystems, and cover a diverse array of taxa (shad, salmon, cod, flounders, perch, and capelin among others). His influences can easily be found in three generations of his direct academic descendants, many of whom were in Québec City to celebrate this well-earned honor for Bill – our mentor, collaborator, and friend. §



Elbert H. Ahlstrom Lifetime Achievement Award recipient, William C. Leggett.

– Chris Chambers



Presenters for the Bill Leggett Tribute theme session at the LFC2014 (l to r: Chris Chambers, Julian Dodson, Bill Leggett, Tom Miller, Ken Able, Ken Frank, and LFC2014 host Dominique Robert; not pictured, Louis Fortier).



Bill and Claire Leggett at the LFC Banquet enjoying (we think) the wildly entertaining Ahlstrom Award presentation speech by former student, Dr. Louis Fortier.

Upcoming Events

Save the Date for Next Year's Larval Fish Conference

The 39th Larval Fish Conference will be held in Vienna, Austria. The conference dates are 12–17 July 2015 (see: www.larvalfishcon.org). The conference themes will cover the contribution of early life history to dispersal, recruitment, and population dynamics of fishes, as well as conservation and restoration issues. We welcome contributions from multidisciplinary fields of aquatic sciences and all environments concerned (marine estuarine and freshwater systems). A special focus on dispersal, larval ecology, and life-history strategies in riverine ecosystems will be part of this event.

We welcome additional offers from people who would like to organize a conference theme, which should include a title, one keynote speaker and should cover approx. 7 – 10 talks. If you are interested and prepared, please contact Hubert Keckeis (Hubert.Keckeis@univie.ac.at). The deadline for proposals is December 15, 2014. The final decision about the included themes will be made in February 2015.

We are looking forward to meet you in Vienna next year,

– Hubert Keckeis, Paul Humphries, Aaron Lechner,
Local Organizing Committee



And in the Future . . . Your upcoming LFCs

I am glad to report that the Larval Fish Conferences are in good shape for at least the next 2 years. Next year, we will be meeting in Vienna, Austria with hosts Hubert Keckeis, Paul Humphries, and Aaron Lechner. The LFC2015 will be held from July 12th through 17th. Our hosts propose themes that will cover contributions of early life history to dispersal, recruitment, and population dynamics of fishes, as well as conservation and restoration issues. They encourage offers by the community to organize conference theme sessions. In 2016, we will be meeting at the Chesapeake Biological Laboratory (CBL) in Solomons, Maryland, USA, thanks to the kind offer to host by Drs. Tom Miller and David Secor. Tom and Dave are working on themes but one central aspect of that meeting will be a tribute to Dr. Edward Houde, also at CBL. Thank you to these two host committee representatives, to our recent hosts Pascal Sirois and Dominique Robert, and to all past hosts. We continue to appreciate your efforts!

For 2017 and beyond, we are entertaining offers. Remember, our conference is such a success because of your volunteer efforts to host and your commitment to attend the LFCs. We still view the suggestion of a joint meeting with the Larval Biology Symposium (they meet in even years) as a very interesting prospect and are working to make that happen. Please step forward if you would like to host a future LFC. §

– Chris Chambers, ELHS Time and Place Committee



Scenes from the 38th annual Larval Fish Conference. Upper: Banquet at the Aquarium du Québec. Above: Winners of the annual flag auction to benefit the Blaxter Award fund. Right: Cocktail hour before banquet.

38th Annual Larval Fish Conference

The 38th annual Larval Fish Conference was held from 17 to 21 August in Québec City (Canada) in conjunction with the 144th Annual Meeting of the American Fisheries Society. The conference attracted more than 150 delegates from 17 countries. Overall, there were more than 1800 delegates at the AFS Meeting. The LFC program comprised 131 oral and poster presentations including 5 keynote addresses. We found that the talks and posters were stimulating and inspiring. As usual, competition was strong for both the Sally Richardson and John H.S. Blaxter awards presented to the best student oral and poster presentations, respectively (see the winners on page 1).

One of the main highlights of the 38th annual LFC came on the last day of the meeting with a plenary tribute session to Dr. William C. Leggett. Five former PhD students and postdoctoral fellows of Dr. Leggett's laboratory presented an overview of their research programs featuring early life stages of fish. During the evening following the tribute session, the Early Life History Section presented its prestigious Elbert H. Ahlstrom Lifetime Achievement Award to Dr. William C. Leggett. The exceptional contributions of Dr. Leggett to our understanding of the early life history of fishes has inspired the careers of a number of fisheries scientists worldwide and led to major progress in fish ecology and studies of recruitment dynamics.

We all had a wonderful week in Québec City. The venue – the Québec City Convention Center – was conveniently located steps away from the historic district, considered one of the world's most beautiful cities. On Thursday evening, all LFC participants were invited to the LFC Banquet at the Aquarium du Québec. The French Canadian cuisine inspired four-course meal was excellent. The LFC flag was auctioned during the banquet to raise funds for future Blaxter Awards. The auctioneer, the inimitable Jon Hare, kicked off the auction with a classic plastic figurine of Bonhomme Carnaval, and the flag was won by a consortium led by Myron Peck.

We would like to thank all participants for making the 38th annual Larval Fish Conference a true success. We hope to see you all next year in Vienna!

– Pascal Sirois and Dominique Robert



ELHS's AFS Trade-Show Booth was a Hoppin'

For those who could not attend the 2014 LFC in Québec City, our ELHS Trade Show Booth was one humming hotspot. Not only was it a primary location to meet and find other Section members and friends, but it served as a clearing house for Section activities. The booth, provided to the ELHS by AFS as Section participants in their Annual AFS meeting, was the location of the items in the Sally Richardson raffle (over \$1,000 raised!), information about our Section including next year's LFC in Vienna, a student intern's project survey on oceans and fisheries, and the showcase for our new 'Early Life is Good' Section T-shirts. Over 100 T-shirts were distributed in exchange for a US\$ 20 donation with proceeds going to the ELHS travel fund. More short-sleeve T-shirts are available in men's (navy) and women's (blackberry) sizes S, M, L, and XL. Order one for yourself, your partner, or your student(s) to get the word out about our vibrant Section! Contact chris.chambers@noaa.gov for T-shirt requests. §

– Chris Chambers



Auction items, T-shirts, surveys, and very helpful student staff at the Early Life History Section booth at the 2014 AFS Trade Show.



2014 LFC local hosts Pascal Sirois (l) and Dominique Robert (r) along with T-shirt czar Chris Chambers and one (of two) very effective mannequins at the ELHS booth at 2014 AFS Trade Show.

Section Business

Grace Klein MacPhee Student Travel Grants Established

The AFS-ELHS members present at the business meeting on August 19th, 2014 at the 38th annual Larval Fish Conference in Québec City unanimously agreed to create Grace Klein-MacPhee travel grants to help fund student travel to future LFCs. All master's and doctoral students attending the LFC who are first authors of either an oral or poster presentation are eligible to apply.

A firm deadline will exist for submitting an application for a Grace Klein-MacPhee travel grant. This deadline will normally be 2 weeks after the close of abstract submission for that year's LFC. The application materials will include three items. First, the students should include an extended (1-page) abstract (similar to AFS student travel grants). Second, the student needs to include an up-to-date CV. Third, the student's advisor needs to submit a brief letter which i) confirms student status, ii) indicates whether the student is at the 'start', 'middle' or 'end' of their degree program, iii) rates the quality of the research that will be presented, and iv) discusses the need for travel funds (e.g., whether co-funding is available). The letter from the advisor should be sent separately to the responsible member of ELHS Executive Committee.

The Executive Committee will award travel grants based upon the application materials. A number of criteria will be

taken into account in selecting students to receive travel grants. The group of candidates chosen for Grace Klein-MacPhee awards should:

- 1) all be members of the Early Life History Section,
- 2) increase the diversity of student representation at the meeting (e.g. gender, ethnicity, country, etc.), and
- 3) promote a diversity of research presented at the LFC, with emphasis on innovative research topics and/or ideas.

Priority will be given to students not previously awarded travel grants. Students that receive travel grants need to submit a short summary of their presentation to the next issue of *STAGES*.

A total of US\$ 3,000 will be provided annually by the Section to support Grace Klein MacPhee travel grants. Local organizers of the LFC are encouraged to find funds from sponsors to help support student travel. When funds are available, local organizers are invited to inform the Executive Committee regarding the amount of money available and to add those funds to increase the money available for Grace Klein-MacPhee travel grants. The amount of the award is not fixed, however, previous travel grants have been between \$300 and \$600, with the latter for transcontinental or long-distance travel. §

2014 Business Meeting Minutes

Québec City, Québec, August 19, 2014

The presence of a quorum of members was confirmed and the meetings from the previous year's business meeting were approved.

Secretary's report: (approved by unanimous vote): In Spring 2014, AFS started a new system that automatically sent membership lists to each Section's President and Secretary. This system, while it has its bugs, has been helpful. At times, the automatic lists were incomplete (as evident by large numbers of missing members in sequential months), so there have been some inconsistencies along the way. It was suggested that the Secretary check new lists with the previous lists, if not monthly, at least before *STAGES* mailings. As of July 2014, AFS reported 184 full members paid through 2014.

For comparison, the reported full membership roster at the 2013 LFC was 173.

As of August 2014, 38 affiliate members are paid through 2014 (based on information provided by the Treasurer). These members joined through PAYPAL. At the 2013 LFC (Miami, FL), 13 new affiliates signed on during an impromptu recruitment drive during a single break between talks. Given the large return for relatively small effort, this should be considered for future meetings as a way to increase membership, as many LFC attendees are not ELHS members.

For comparison, the reported affiliate membership roster at the 2013 LFC was 20.

Particularly for Affiliate members, the onus is on the Secretary to send renewal reminders, as they do not receive these from AFS. Indications are that the PayPal system continues to work well.

Treasurer's report: (approved by unanimous vote): I oversaw the

transactions in four accounts during 2013-2014.

There are three accounts at First Citizens bank in North Carolina. They are: General Fund, Sally Richardson Fund, and Blaxter Fund. The debits and credits to those accounts are summarized in financial reports below.

For the Sally Richardson and Blaxter funds, the monies raised through raffles at LFC 2013 exceeded the annual award payments and both accounts increased over the last year. The balance for the Blaxter fund is \$7,107; we're only ~\$3,000 short of the capital campaign goal of \$10,000. The balance in the Sally Richardson fund is \$14,773.80.

The General Fund increased substantially over the last year given the profits from LFC 2013, 2013 dues collected by the parent society, and return of LFC 2013 seed money. The General Fund account now has a balance of ~\$24,000; this balance reflects the recent student travel award expenses for LFC 2014 (\$5,400). The

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Blaxter Fund

Beginning Balance (Aug, 2013)	5,847.10
INCOME	
Income from flag raffle, LFC 2013 (minus \$300 for award)	1,260.00
Total Income	1,260.00
EXPENSES	
Paper statement fee	3.00
Total Expenses	3.00
BALANCE & INCOME – EXPENSES	7,104.10
ENDING BALANCE FOR THE BLAXTER FUND AS OF Aug 1, 2014	7,104.10

Sally Richardson Fund

Beginning Balance (Aug, 2013)	14,614.80
INCOME	
Income (LFC 2013 Raffle, minus \$600 for student award)	162.00
Total Income	162.00
EXPENSES	
Paper statement fee	3.00
Total Expenses	3.00
BALANCE & INCOME – EXPENSES	14,773.80
ENDING BALANCE FOR THE SALLY RICHARDSON FUND AS OF Aug 1, 2014	14,773.80

**AFS - Early Life History Section Budget
(Aug 2013 – Aug 2014)****General Fund**

BALANCE (Aug, 2013)	9,948.58
INCOME	
Return of LFC 2013 seed money	3000.00
2013 Membership Dues from AFS	2400.00
Profit from LFC2013	14453.48
TOTAL INCOME	19,853.48
EXPENSES	
Wire transfer fees (LFC 2013 funds were wire transferred to this account)	15.00
LFC 2014 Student travel awards	5400.00
Sponsorship of otolith conference	450.16
Ordered new checks	70.61
Paper statement fee	3.00
TOTAL EXPENSES	5938.77
BALANCE & INCOME – EXPENSES	23,863.29
ENDING BALANCE FOR THE GENERAL FUND AS OF Aug 1, 2014	23,863.29

PayPal Fund (dues payment account for affiliate members)

Beginning Balance (Aug, 2013)	122.04
INCOME	
Income (\$15 dues payment by 35 affiliate members)	525.00
Total Income	525.00
EXPENSES	
PayPal fees	29.80
Total Expenses	29.80
BALANCE & INCOME – EXPENSES	617.24
ENDING BALANCE FOR THE PayPal account as of Aug 1, 2014	617.24

Business Meeting...cont'd from p. 8

general fund will continue to grow as Section expenses are low and dues payments are ~\$3,000 per year. Our dues alone could sustain future travel awards at ~\$3,000 per year without depleting principal.

The fourth account is our PayPal account. Affiliate members (35) paid dues through PayPal over the last year for a total net income of \$495.20 (see income and PayPal fees below). The current balance in the PayPal account is \$617.24. Thanks to EXCOM members and others for spreading the word about this payment option.

I filed Form 990-N with the IRS in August 2014 for tax year 2013. The Section has to file this form to maintain non-profit status.

The ELHS accounts are in good financial standing.

Newsletter report: In the past year we published four issues of *STAGES*: June 2013, October 2013, February 2014 and June 2014. *STAGES* continues to be an entirely electronic publication. Distribution is via email and the email list appears to be complete and without errors. Volunteers are being sought to possibly take over the publication of the newsletter. Anyone interested should contact Lee Fuiman.

Website report: The ELHS website has a new look thanks to NC State University changing their website software (from Joomla to Word Press).

Over the last year, activities of the ELHS webmaster have included posting issues of *STAGES*; announcements of meetings, short courses, and jobs; book publications; and Sally Richardson and Blaxter award winners.

Updates were made to the following pages: committee and excom membership, Blaxter

award page, past student award pages, and past meeting page.

Maintenance of PayPal account includes logging payments and fees and sending contact information of renewing/new affiliate members to the ELHS Secretary.

Items for consideration by Executive Committee and Section:

Please remind members and future members that an online PayPal option is available for membership renewal (see "How to Join" link on Section website).

Jeff Buckel would like to step down as ELHS webmaster. Please contact him about logistics if you are interested in volunteering for the webmaster position.

Historian report: The paper archives of the ELHS are maintained at the home residence of ELHS Historian Jeff Govoni, in Straits, outside of Beaufort, NC. Relevant electronic files are either transmitted to the ELHS Webmaster for posting on the ELHS Website if appropriate, or maintained as electronic files by the Historian.

The ELHS Historian continues to review archived issues of *STAGES*, and provides copy to the newsletter Editor for inclusion in the "ELHS Back Then" Column.

The ELHS Historian requested an update of the information on the website from the President concerning: 1) past recipients of the Sally Richardson Award, 2) past recipients of the J.H.S. Blaxter, and 3) Past officers of the ELHS. This has been done by our webmaster Jeff Buckel, Thanks a lot!

Historical data can either be retrieved from past issues of *STAGES* or from the Historian. Contact with the ELHS Historian can be made through the following email address: JJGovoni@gmail.com

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Publications



Available now: *Guide d'identification des post-larves de Méditerranée.*

Edited by G. Lecaillon, M. Murenu, F. Hackrad, and P. Lenfant.

Published by Ecocean Nova Science Publishers, Inc.. 2012. 66pp.

Available on the ELHS website: cmast.ncsu.edu/elhs/wp-content/uploads/sites/4/2014/09/Guide-PL-MED.pdf

The post-larval stage is the final stage of the pelagic larval phase in the life cycle of coastal marine animals. In the first week of their return, nearly 95% of these post-larvae will die mainly due to predation, physiological changes, and coastal pollution. This phenomenon also occurs in the Mediterranean Sea, a hot spot of biodiversity which hosts the world's second highest percentage of endemic species. This book is the first edition of the identification guide of Mediterranean post-larvae and results from a desire to understand, protect and improve marine biodiversity in the Mediterranean Sea. It concerns mainly fishes, and will serve as a knowledge basis for understanding this little known part of the cycle of coastal fishes. In conjunction with Ecocean, a French company that specializes in post-larval capture and culture (PCC), and European marine researchers, this work has significantly improved the knowledge of population connectivity, biodiversity, and marine ecology. This book provides us with a highly practical guide to identify the later larval stages of Mediterranean fishes, and also an astounding photo collection of these small marine animals. Ecocean's book will appeal to all marine biologists, fishermen, marine coastal managers, and to nature lovers. Further, because many of the fish species have wide distributions, the book will be useful to marine biologists in a wide region. A second advanced edition with additional species and data will be released in 2015.

§



Available soon: *Commemorating 100 years since Hjort's 1914 treatise on fluctuations in the great fisheries of northern Europe – Where we have been, where we are, and where we are going.*

Edited by H.I. Browman

To be published in *ICES Journal of Marine Science* in October 2014.

The title says it all. This volume contains 32 papers in all, some of which have already been published and are available online (go to icesjms.oxfordjournals.org and search for "Hjort 1914 Commemorative Issue"). Others will be published soon. §

Other Publications

Proceedings of the 36th Annual Larval Fish Conference. Edited by H.I. Browman and A.B. Skiftesvik. *ICES Journal of Marine Science* 71(4). 2014.

A Handbook to Help Identify Hudson River Fish Larvae. By L. G. Arvidson and J. B. Alber. Published by the authors, Rosendale, New York. 2013.

Larval Fish Aquaculture. Edited by Jian G. Quin. Published by Nova Science Publishers, Inc.. ISBN:978-1-62417-899-3. 2013

Zooplankton of the Atlantic and Gulf Coasts: A Guide to Their Identification and Ecology. 2nd edition. By William S. Johnson and Dennis M. Allen. Published by Johns Hopkins University Press. ISBN-13:978-1421406183. 2012.

Larval Fish Nutrition. Edited by G. Joan Holt. Published by Wiley-Blackwell. ISBN-0813817927. 2011.

Identification of Eggs and Larvae of Marine Fishes. Edited by A.W. Kendall, Jr. Published by Tokai University Press. ISBN-978-4-486-03758-3. 2011.

Ecology of Estuarine Fishes: Temperate Waters of the Western North Atlantic. By Kenneth W. Able and Michael P. Fahay. Published by Johns Hopkins University Press. ISBN-0801894719. 2010.

Early Stages of Marine Fishes Occurring in the Iberian Peninsula. P. Ré and I. Meneses. Published by IPIMAR/IMAR. ISBN-978-972-9372-34-6.

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

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

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

Manual of Recommended Practices for Modelling Physical – Biological Interactions during Fish Early Life. Edited by E.W. North, A. Gallego, and P. Petitgas, Jr. ICES Cooperative Research Report No. 295. 111 pp. 2009. ISBN: 978-87-7482-060-4.

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

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

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

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Publications...cont'd from p. 10

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

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

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

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

Ecology of Juvenile Salmon in the Northeast Pacific Ocean: Regional Comparisons. Edited by C. B. Grimes, R. D. Broder, L. J. Halderson and S. M. McKinnell. American Fisheries Society, Symposium 57, Bethesda, MD. 2007.

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

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

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

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

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

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

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

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

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

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

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

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

§

Travel Awards to Students

Congratulations to these students who received funds from the Early Life History Section to defray their expenses for travel to the 38th annual Larval Fish Conference. These funds were given to the Section by the organizers of the 37th annual Larval Fish Conference and designated to support student travel.

Name	University	MS/PHD
Abdelouahab, Hinde	Faculty of sciences Ain Chock of Casablanca (Morocco)	PhD
Ayala, Daniel	National Institute of Aquatic Resources (Denmark)	PhD
Currie, Carissa	Memorial University (CAN)	MS
Deary, Alison	Virginia Institute of Marine Science (USA)	PhD
Diaz Gil, Carlos	Mediterranean Institute of Advanced Studies (Spain)	PhD
Feiner, Zach	Purdue University (USA)	PhD
Gocalo, Cassia	University of São Paulo, (Brazil)	PhD
Harada, Alice	Scripps Institute of Oceanography (UCSD) (USA)	PhD
Havel, Lisa	UT at Austin (USA)	PhD
Lavery, Michelle	University of New Brunswick (CAN)	MS
Macedo-Soares, Luis	Universidade Federal de Santa Catarina (Brazil)	PhD
Malinich, Timothy	Purdue University (USA)	PhD
Penney, Heather	Memorial University (CAN)	PhD

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

but growth ceased by late August in most cases (see figure above). These temporal growth dynamics were not size-dependent, nor were they related to water temperature, or to intra- or inter-specific (brown shrimp *Crangon crangon*) competitor densities. At the broadest scale, 22 nurseries over ca. 300 km of coastline were surveyed for three years in mid-August, detecting substantial spatial and interannual variation in growth rate (Ciotti et al., 2013b). Growth limitation at this time of the summer was widespread and was related to intra-specific competitor density and physical characteristics of beaches (tidal range and wave fetch), but not inter-specific competitor density or environmental productivity. Size in August, a metric of integrated juvenile growth rate, also differed consistently among these same beaches over 10 consecutive years (Fox et al., 2014). Interannual trends in size in August varied spatially but were consistent with intra-specific competition at some beaches (Fox et al., 2014). Common garden experiments demonstrated that spatial growth variation results from extrinsic habitat conditions rather than variation in intrinsic growth potential (Fox et al., 2014).

Overall, these collaborative studies have identified dominant spatial and temporal growth patterns of YOY plaice. Growth limitation is widespread, particularly in late summer, due to local habitat conditions: intraspecific competition plays a role at some, but not all, scales. Future efforts should focus on further clarifying mechanisms of growth limitation and examining the role of physical beach characteristics, particularly with respect to the widespread temporal decline in growth rate during late summer (Ciotti et al., 2014).

These projects and collaborations were initiated and developed as a result of the International Flatfish Symposia and were supported by the National Environmental Research Council (UK), British Ecological Society, Scottish Association for Marine Science, Port Erin Marine Laboratory (University of Liverpool), University of Delaware, American Fisheries Society and



Sampling for YOY plaice at nursery beaches along western coasts of the British Isles.

American Society for Ichthyologists and Herpetologists.

Literature cited:

- Ciotti, B.J., Targett, T.E., Burrows, M.T., 2013a. Decline in growth rate of juvenile European plaice (*Pleuronectes platessa*) during summer at nursery beaches along the west coast of Scotland. *Canadian Journal of Fisheries and Aquatic Sciences* 70:720-734.
- Ciotti, B.J., Targett, T.E., Burrows, M.T., 2013b. Spatial variation in growth rate of early juvenile European plaice *Pleuronectes platessa*. *Marine Ecology Progress Series* 475:213-232.
- Ciotti, B.J., Targett, T.E., Nash, R.D.M., Burrows, M.T., 2013c. Small-scale spatial and temporal heterogeneity in growth and condition of juvenile fish on sandy beaches. *Journal of Experimental Marine Biology and Ecology* 448:346-359.
- Ciotti, B.J., Targett, T.E., Nash, R.D.M., Geffen, A.J., 2014. Growth dynamics of

European plaice *Pleuronectes platessa* L. in nursery areas: A review. *Journal of Sea Research* 90, 64-82.

Ciotti, B.J., Targett, T.E., Nash, R.D.M., Batty, R.S., Burrows, M.T., Geffen, A.J., 2010. Development, validation and field application of an RNA-based growth index in juvenile plaice *Pleuronectes platessa*. *Journal of Fish Biology* 77:2181-2209.

Fox, C.J., Targett, T.E., Ciotti, B.J., de Kroon, K., Hortsmeier, L., Burrows, M.T., 2014. Size variation of 0-group plaice: Are earlier influences on growth potential a contributing factor? *Journal of Sea Research* 88, 59-66.

NAPPEX

Nurserie Artificielle pour Ports Exemplaires (NAPPEX) is a project led by Ecocean (www.ecocean.fr) with partners at University of Perpignan and CEFREM. The project developed

...continued on p. 14

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

We all owe a strong debt of gratitude to our outgoing officers for their excellent stewardship of the ELHS. The next time you see them, make sure to give Catriona Clemmesen-Bockelmann (former President) and Frank Hernandez (former Secretary) a warm pat on the back (or big hug if you/they prefer). They have served with dedication and distinction. Jeff Buckle will continue to serve as our Section's treasurer (and you can also hug him). Your new officers (Fred Scharf - Secretary and I) inherit a fiscally healthy, well-oiled machine (e.g., with up-to-date membership list). Fred, Jeff, and I will try to ride this wave of success through the coming years. Importantly, nominations are being taken for President-Elect and Secretary-Elect. Please consider nominating someone (self-nominations are welcome) for one of these positions. We do not have a complete Executive Committee (ExCom) until those folks are elected. The ExCom is an important governing body that works for you! - so please help us move forward rapidly with this.

Sustained, relatively high proceeds from our raffle, auctioned items, and annual dues have built up considerable funds in our accounts. These funds are used every year to support our two prestigious student awards and the "surplus" (I shudder to use the term) has created new avenues to help promote our Section - being one of the sponsors of the upcoming 5th International Otolith Symposium (ices.dk/news-and-events/symposia/otolith/Pages/default.aspx). Our healthy financial situation has also provided new, very exciting opportunities for our Section to support students (discussed below). In closing this brief financial section, I wish to thank everyone for their generosity and support of our Section (please remember to renew your membership!). I also want to express a word of caution. Please recall that our Section's financial outlook was fairly grim only a few years ago and that we need continued support from our members for continued success.

As you are already aware, a great aspect of our Section is its emphasis on students. I am proud to announce that our Section has decided to honor

Grace Klein-MacPhee with the establishment of annual student travel grants in her name. Grace received a PhD in Zoology from the University of Rhode Island, where she worked as an Associate Research Scientist for 19 years before retiring in 2005 (allowing her more time to compile larval fish survey data!!). In my review of our archives of STAGES (cmast.ncsu.edu/elhs/elhs-newsletter), Grace is one of the most photographed - not to mention photogenic - members of our Section (go to your bookshelf and pick up a copy of any issue appearing directly after the LFC and there she is (2006 to 2012), always standing next to (and sometimes slightly below) a grinning student. The student is the proud winner of that year's Sally L. Richardson Award. Grace has been responsible for organizing the judging for that award for as long as I can remember (I am relatively young, so I asked Chris Chambers - he confirmed that Grace has been responsible for many, many years - thanks Chris). Application instructions and selection criteria will be placed on the ELHS website prior to abstract submission for next year's 39th annual Larval Fish Conference (Discussed below). Thank you Grace for your many years of service. The Section is proud to fund student travel in your name.

Also related to student participation, I am pleased to report the establishment of an ad hoc committee to examine how we can continue to attract (and keep) young members to (in) our Section. At the present time, three "young" members have volunteered to organize this effort: 1) Alison Deary (aldeary@vims.edu) - a PhD at Virginia Institute of Marine Science and this year's Sally L. Richardson Award winner, 2) Matthias Paulsen (mpaulsen@geomar.de) a PhD student at the University of Kiel, and 3) Dr. Marta Moyano (marta.moyano@uni-hamburg.de) who obtained her PhD in 2009 from Universidad de Las Palmas de Gran Canaria, Spain and now works with me in Hamburg. If you are a PhD student or early career scientist, I encourage you to contact them and join this committee. Please be on the lookout for an email or two from this group and, if provided a questionnaire, please take the time to complete it and share your thoughts.

This year's 38th (!) annual Larval Fish Conference was held jointly with the annual meeting of the American Fisheries Society. Although we are a section of AFS, having these meetings in parallel is a rare event ("roughly" 7.9 % of the time). This year, Catriona and I attended the AFS annual meeting and the (much smaller) governing board's breakfast and learned a bit more about how the AFS operates. There are various, untapped ways that our Section can benefit from AFS. First, there are opportunities for website hosting and social media (items to be discussed by our members). Second, there are various awards for students (e.g. for outstanding essays/research or for leadership/service). I strongly encourage everyone to check out the AFS website.

In closing, I want to remind folks of next year's 39th annual Larval Fish Conference in Vienna, Austria. If you haven't been to Vienna, you need to go. If you have already been there, you know how wonderful (and culturally rich) that city is - and I am sure you will return and join us! The meeting is being organized by Huebert Keckeis (hubert.keckeis@univie.ac.at) and colleagues at the University of Vienna. This continues the tradition of hosting meetings outside North America roughly every 3 to 4 years - a tradition that highlights the international membership and flavor of our Section. This offers me a (seamless?) transition to writing a few sentences about the person you elected. Most of the LFCs that I have attended (Barcelona, Lake Placid, St. Johns, Portland, Kiel, Québec) were held in Europe or Canada. I have experienced some internationalization (born, raised, and educated in the USA, Ohio, Connecticut, and Rhode Island, having worked in Germany for more than a decade). At the University of Hamburg, my research (well, my students' research) involves coupling eco-physiology and biophysical modeling to understand processes affecting early life history stages of fish - and a few other things.

Thank you for (reading to this point and) offering me the chance to serve the Section. Fred and I look forward to hearing your thoughts about our

...continued on p. 14

President's Message...cont'd from p. 13

Section and how to continue to make it a vibrant, fun, and scientifically excellent experience for its members. §

European Region...cont'd from p. 12

a marine ecological restoration solution, the Biohut®, which supports biocompatibility of port infrastructure by reintroducing the essential nursery functions (shelter and food) that are currently missing. The design of the Biohut®, with its double cage system aims to improve the survival rate of young fish which settle on the coast before they move to deeper water, and thus increase adult fish populations and promote more resilient marine ecosystem function.

In March 2013, 192 Biohut® structures were installed along docks and under pontoons of six Mediterranean marinas. Scientists from the University of Perpignan perform monitoring of each location (free wildlife, mobile and fixed fauna). The ecological benefit of this innovative system will be determined by the end of the project period and will show how the Biohut® helps to significantly preserve and generate biodiversity along shoreline infrastructure. The initial trends in the monitoring results were presented at the Society for Ecological Restoration (SER2013) in Madison, at the Conference on Ecosystems and Ecological Restoration (CEER2014) in New Orleans, and the 38th Larval Fish Conference in Québec City. More images from the project are available at: www.nappex.fr/medias/phototheque. For more information, contact Gilles Lecaillon (gilles.lecaillon@ecocean.fr). §



Example of the fauna in a Biohut®

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

The larvae (*Sardinops*, *Trachurus*, *Scomber*) were characteristic of the inner shelf water and were entrained offshore in the preceding week. These larvae were also significantly larger than larvae from tows on the adjacent shelf, suggesting that their survival rates were better. The larval growth rates of *Sardinops* in the eddy were not any better than the few larvae found on the shelf, also implying less size or growth-selective predation in this offshore eddy. The study is consistent with work in frontal eddies of the Kuroshio and Florida Current, where submesoscale eddies are frequent and may sustain most of the larval phase. Frontal eddies are not resolved by present altimetry, but may provide a ubiquitous recruitment mechanism for all boundary currents.

Reference

Mullaney, T. J. and Suthers, I. M. 2013. Entrainment and retention of the coastal larval fish assemblage by a short-lived, submesoscale, frontal eddy of the East Australian Current. *Limnology and Oceanography* 58:1546–1556 ([dx.doi.org/10.4319/lo.2013.58.5.1546](https://doi.org/10.4319/lo.2013.58.5.1546)).

As another topical paper from the Pacific Rim region, I introduce a recent paper on taxonomy which I received from Jeff Leis during the 38th LFC in Québec. In it, Jeff reviews progress in research on taxonomy and systematics of larval marine and estuarine fishes in the Indo-Pacific. This paper is now available online (open access) in a special issue of *Ichthyological Research* from the Ichthyology and Indo-Pacific Fish Conferences from the 1980s to the 2010s. This paper has great information on taxonomy of larval fish with beautiful photographs.

Reference

Leis, J. M. 2014. Taxonomy and systematics of larval Indo-Pacific fishes: A review of progress since 1981. *Ichthyological Research* ([dx.doi.org/10.1007/s10228-014-0426-7](https://doi.org/10.1007/s10228-014-0426-7))

By the way, Jeff Leis has retired from the Australian Museum after 35 years. Although Jeff will retain an association

with the museum as a Senior Fellow, he has relocated to Hobart, Tasmania, where he is Honorary Research Professor at the Institute for Marine and Antarctic Studies of the University of Tasmania. From his new base in Tasmania, Jeff will continue his larval fish research activities, but will still find time to enjoy the beautiful Tasmanian environment (and wineries!). Please use his new e-mail for contact: jeffrey.leis@utas.edu.au.

We appreciate his achievements and contributions to the ELHS for a long term and hope he continues his activities in his new place.

Lastly, I follow-up one news in a past issue of STAGES.

Contributions from Morocco to the 38th LFC

In the February 2014 issue (Vol. 35, Number 1), I reported a project “Integrated Monitoring of Small Pelagic Fishes in Morocco (IMPM),” which is a cooperative program between the National Institute for Fisheries Research (Institut National de Recherche Halieutique, INRH) in Morocco and the Japan International Cooperation Agency (JICA). When I visited the INRH in November 2013, the INRH and JICA members were launching early life biology in their IMPM project. Indeed, they made a lot of progress in half a year. A total of three papers were presented at the 38th Larval Fish Conference in Québec City.

Abdelouahab, H., Berraho, A., Ettahiri, O., Ramzi, A., Errhif, A., and Tojo, N. “Mortality of Early Life Stages of Sardine (*Sardina pilchardus*) Along the South Area (21–26°N) of the Atlantic Coast of Northwest Africa”

Berraho, A., Ettahiri, O., Ramzi, A., Larissi, J., Benazzouz, A., Abdelouahab, H., and Tojo, N. “Distribution and Size Structure of Sardine Larvae (*Sardina pilchardus*) Along the South Area (21–26°N) of Atlantic Coast of Northwest Africa in Autumn 2007”

Ettahiri, O., Berraho, A., Takasuka, A., Hilmi, K., Makaoui, A., Somoue, L., Ramzi, A., and Tojo, N. “Spawning environmental window of *Sardina pilchardus* along the Atlantic coast of Northwest Africa (21°N–32°N)” (Poster) §

Business Meeting...cont'd from p. 9

Nominations and ballot committee:

1) North Central Regional Representative: candidates identified; election pending

2) Southern Regional Representative: candidates identified; election pending

3) Dominique Robert was nominated as a candidate for Secretary-Elect, and accepted the nomination.

Time and place committee:

Following from discussions within the committee and at the 2008-10 ELHS Business Meetings, the committee sought to identify potential LFC hosts that accommodated the following idealized 4-yr pattern of venue locations, while including opportunities for both stand-alone LFC's and joint meetings:

US/NA east coast or Gulf of Mexico

US/NA internal continental or Gulf of Mexico

US/NA west coast

International (outside of North America)

We have been successful in securing LFC hosts for the next 2 years, and have undertaken discussions with additional candidate hosts for future years that follow the above scheme.

A joint meeting of the LFC with Larval Biology Symposium (LBS) has been discussed for some time. The LBS meets in even years, and our 2016 candidate hosts cannot accommodate the addition of LBS participants (~ 100) without a change of venue. Regarding 2018 or 2020, Chambers has been in contact with several recent Larval Biology Symposium Organizers (Steve Morgan, Bodega Marine Laboratory, UC Davis) and am awaiting an update on the LBS schedule for future venues. The challenge is that LBS is an ad hoc organization without formal mechanisms for planning meetings beyond the next one. The Time and Place committee recommends that if we want to pursue a joint meeting with LBS, we 1) identify an agreeable host, 2) propose the meeting to the LBS, and 3) seek LBS participants who would be willing to serve on the planning / local committee.

Elbert H. Ahlstrom Lifetime Achievement Award Committee:

William C. Leggett, retired fisheries biologist and ecologist of Kingston, Ontario, Canada, was nominated for the Elbert H. Ahlstrom Career Achievement Award, by Dominique Robert, Pascal Sirios, and Louis Fortier. The Ahlstrom Award Committee approved the nomination and passed the nomination on ELHS President Catriona Clemmesen-Bockelmann. Dr. Leggett will receive the award at the 38th Larval Fish Conference in Québec City, Québec, Canada in August 2014.

The ELHS President was asked to remind the ELHS membership that the Ahlstrom Award is an occasional, not necessarily an annual award.

Student travel award committee: This year the Section provided travel awards to 13 students (listed on page 13) at a total cost of \$5,400 to support their travel to Québec for the 2014 LFC. The amount of individual awards was dependent on whether the student was representing a university within or outside of North America, given the higher costs of traveling to Québec from outside of North America. Among the 13 recipients, 5 students that were located outside of North America were awarded \$600 each, and 8 students that were located in North America were awarded \$300 each. The recipients included 11 doctoral students and 2 MS students, and represented six different countries (USA, Canada, Brazil, Spain, Denmark, and Morocco).

New business:

Creation of the Grace Klein-McPhee student travel grant - The ELHS is in good financial standing. A subset of the current ExCom met prior to the business meeting and proposed the idea of creating the Grace Klein-McPhee student travel grant, a measure to provide a more consistent source of travel support for students attending the LFC. After some discussion about grant details, a motion was made (and passed unanimously) to: 1) set up the travel fund, 2) name it in honor of Grace Klein-McPhee, and 3) give the ExCom liberty to develop the criteria used to select among student applicants.

Other business:

Audrey Geffen has been nominated for the chair of the conference and symposium publications editorial committee. §

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

Memorial University of Newfoundland for her poster entitled, *What are they eating? Spatio-temporal Variability of Diet Composition in Atlantic Herring Larvae (Clupea harengus) off the Coasts of Newfoundland*, co-authored by Christina M. Bourne, Pierre Pepin, and Dominique Robert.

The Sally L. Richardson Award is given annually to the best student oral presentation as judged by an Award Committee. Twenty nine students competed for the award this year. The quality of student talks continues to increase and there were several competitive papers. Two students were selected for Honorable Mention: Nasheika Guyah of The University of the West Indies for her presentation, *Baseline Survey of Ichthyoplankton in Coastal Marine Reserves: Implications for Jamaica's Fish Stock*, and Zachary Feiner of Purdue University for his presentation, *Adaptive, Plastic, and Maternal Effects on Egg Size, Egg Quality, and Egg Size Variation in Great Lakes Walleye*.

The John H. S. Blaxter award recognizes the best poster presented by a student at the annual Larval Fish Conference and is judged by a separate committee. Eight students competed for the award this year.

Congratulations to Alison, Carissa, Zachary, and Nasheika and thank you to all the students who participated in the 38th annual Larval Fish Conference. Thank you also to the judges: David Bengtson, Allison Candelmo, James Franks, Jessica Miller, Tom Miller, Hannah Murphy, Andrew Muir, David Costalago, Susan Sogard, Catriona Clemmesen, Jon Hare, Tony Miskiewicz, and Lee Fuiman. Finally, thank you to Elaine Caldarone and Grace Klein-MacPhee, neither of whom were able to attend this year, but artfully scheduled the judging and distributed criteria and score sheets for the Richardson Award before the meeting. §

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

analyses that evaluate the role of variations in the CO₂ environment experienced by parents to the responses to CO₂ exhibited by their offspring.

Our second research focus has been on the relative and potentially interactive roles of toxins and thermal stress in determining success of the early life stages of two local species of sturgeons (shortnose and Atlantic), both of which are endangered. Our previous work showed a high level of sensitivity of the early life stages of each species to dioxin-like compounds (Chambers et al., [dx.doi.org/10.1002/etc.1953](https://doi.org/10.1002/etc.1953)). The current work, funded by NOAA National Ocean Service and the Hudson River Foundation, builds upon our prior results by analyzing early life stage responses in both species to graded doses of four different PCB congeners, an Aroclor mixture, and dioxin, to water temperatures that span the range of normal development in these sturgeons, and to a combination of toxins and temperature. We reported on our initial results for shortnose sturgeon at LFC2014.

Lastly, our work is only made possible by the participation of a large number of lab associates (research associates, students, interns, and volunteers). To those, we not only offer our sincere thanks but also offer a summer discussion series on topics especially germane to students who are about to embark on graduate programs. Chris Chambers, NOAA Fisheries, NEFSC, Highlands, New Jersey. §



The Larval Fish Conference flag from 2008 was flown at the Fisheries and Mariculture Laboratory of the University of Texas Marine Science Institute. Pictured are (left to right): John Mohan, Cynthia Faulk, Andrew Esbaugh, Lee Fuiman, Benjamin Walther, Lisa Havel, Erik Oberg, Matthew Seeley, Joshua Lonthair, Elisabeth Brown, and Brett Cutler.



Scenes from the 2014 Larval Fish Conference banquet at the Aquarium du Québec.



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

Editor's Ramblings



What a Rush!

I'm in the midst of a lot of traveling, which will culminate in being out of the office for the months of October and November. While at the Larval Fish Conference, I became worried that I would not be able to get the October issue of *STAGES* done because of my travels. It seemed I would have to skip an issue and not publish again until February. Well, that didn't feel right. At the very least, we had to announce to our entire membership the winners of the Richardson, Blaxter, and Ahlstrom Awards that were honored at this year's Larval Fish Conference. So, I decided to try to assemble an abbreviated issue of *STAGES*. I brought this up at the business meeting and asked everyone to send anything they wanted to appear in *STAGES* within a week and I did the same by email to the Executive Committee, Regional Representatives, and a few other highly engaged members. As you can see from the size of this issue, it is not an abbreviated issue. It's wonderful to have such a great cadre of friends and colleagues who are so dedicated to our organization.

My personal thanks (in no particular order) to Catriona, Jon, Frank, Fred, Jeff, Dominique, Pascal, Chris, Myron, Hubert, Dan, Dave, and Akinori, who responded on such short notice. As we say down here in Texas... "y'all are great!"

§