



Darrel Snyder Honored



Darrel Snyder (left), standing with Kevin Bestgen, displays his Award of Excellence.

Darrel Snyder of the Larval Fish Laboratory, Department of Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins, received the Award of Excellence at the 2008 meeting of the Colorado-Wyoming Chapter of the American Fisheries Society. This lifetime achievement award is the highest honor of the Chapter and is bestowed on individuals who make significant contributions to the field of fishery science in the region and the profession in general.

In association with Dr. Clarence Carlson (retired), Darrel founded the Larval Fish Laboratory (LFL) in 1978, which is a unique research laboratory in North America, specializing in the study of early life history stages of fishes. The LFL, which will celebrate its 30th anniversary this year, has also made substantial contributions in the fields of fish ecology and conservation. Darrel's deep passion for early life stages of fishes led to formation of the Early Life History Section (ELHS) of the American Fisheries Society in 1980. Darrel was an original founding member and the first president of the Chapter, which currently boasts over 300 members in many countries.

The ELHS is one of the most successful Sections in the history of the American Fisheries Society, and its continued success is due in no small part to Darrel's enthusiastic and long-standing participation. Darrel retired in December 2006 but remains very active, working on a number of LFL projects and traveling extensively. Congratulations, Darrel! §

— Kevin Bestgen

President's Message



Greetings all! I'm writing this, my last President's Message, to you from my office in New Jersey (USA). Spring has finally arrived, my group's major efforts on our winter laboratory experiments are winding down (or at least reaching a manageable equilibrium!), and we are eager for a protracted and productive summer.

Certainly one landmark on the horizon that we are looking forward to is the Larval Fish Conference (LFC) in Kiel in early August (8/4 to 8/7). I have been in frequent communication recently with Catriona Clemmesen, Chair

of the Local Organizing Committee for the conference, and she exudes confidence in her committee's plan for hosting us this summer. 'Us' at this point is over 150 colleagues from more than 25 countries! Not only do the scientific program, keynote speakers, and list of abstracts look excellent, so also do the scheduled social events (see 'LFC 2008 Update' and LFC presentation titles elsewhere in this issue and at our conference website, www.larvalfishcon.org). The social events will be ones to remember. These events include – and as part of your registration fee, no less – the opening and poster socials, a field trip / boat ride / evening

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ELHS Back Then

- 5 years ago: ELHS establishes Elbert H. Ahlstrom Career Achievement Award.*
- 10 years ago: Bibliography Committee makes Bob Hoyt's 1998 bibliography on early life stages of fishes available online.*
- 15 years ago: Bill Richards saves the day by offering to publish papers from the 15th LFC in Bulletin of Marine Science after prior arrangements fall through.*
- 20 years ago: First raffle for Sally L. Richardson award held at the 12th LFC at the University of Michigan.*
- 25 years ago: ELHS has 360 members and "several dozen newsletter members."*

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

September 2, 2008

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News from the Regions



European Region

Audrey Geffen

From: Benjamin Ciotti and Tim Targett, University of Delaware

College of Marine & Earth Studies report on cooperation with European colleagues studying flatfish nursery ground dynamics

International efforts are underway to understand the growth dynamics of juvenile plaice (*Pleuronectes platessa*) on the west coast of Scotland. These young flatfish use shallow areas of moderately exposed sandy beaches throughout Europe. Since juvenile plaice occupy restricted home ranges, they are ideal candidates to examine links between growth and environmental variables. Considerable debate has surrounded how growth is controlled by temperature, prey, and density in this species, but spatial and temporal habitat variability has prevented a consistently clear role for any one of these variables from being identified. Recently, an international collaboration between European and North American researchers has developed tools to gain a more spatially and temporally explicit understanding of plaice nursery function.

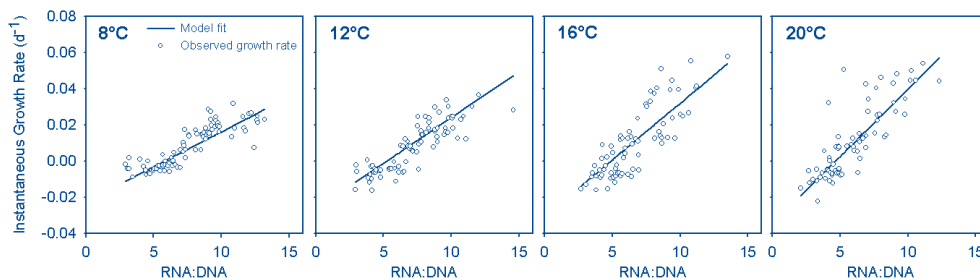
During sabbatical research, Timothy Targett of the University of Delaware (USA) worked with Richard Nash and Audrey Geffen of Port Erin Marine Laboratory (Isle of Man) and Michael Burrows and Robert Batty of Dunstaffnage Marine Laboratory (Scotland) to develop an RNA:DNA index of growth rate for juvenile plaice. Controlled laboratory growth experiments were undertaken to establish a predictive relationship between individual growth rate, white muscle RNA:DNA, temperature, and body mass.

The RNA:DNA relationship can be used to predict growth rates of field-collected fish from measurements of white muscle nucleic acid concentrations. RNA:DNA-based growth estimates are not confounded by processes, such as migration and

mortality, that influence the average size distribution and therefore apparent growth of a population. Furthermore, since the index provides fine-scale resolution growth estimates, it is suitable for studies in inshore environments where highly dynamic abiotic and biotic variables could become uncoupled from more integrated growth measurements. Finally, RNA:DNA can be measured quickly, easily, and cheaply so can be applied at the broad spatial and temporal scales relevant to population dynamics.

Applications of the RNA:DNA index are already in progress. Timothy Targett and his graduate student, Benjamin Ciotti— a former Port Erin undergraduate, have continued to work with Burrows, Batty and Nash to characterize patterns of juvenile growth in plaice on the west coast of Scotland.

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Results of a laboratory experiment to develop an RNA:DNA index of growth rate for juvenile plaice. Stepwise multiple linear regression was used to predict instantaneous growth rate (G) of juvenile plaice as a function of RNA:DNA (R), temperature (T), and body mass (M): $G = 0.00256R + 0.00355M - 0.00103T + 0.00030RT - 0.00061RM - 0.0205$. Model fits represent partial regression slopes from the growth model (multiple $R^2 = 0.71$, $n = 310$).

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Secretary.*



Pacific Rim Region

Iain Suthers

Australia had a change in federal government last November and the new government's budget has just come down. Finally there is some badly needed funding for university buildings. There was no mention of a replacement for our ageing oceanographic vessel, the *Southern Surveyor*, but our concern is now firmly in the minds of power in Canberra. It takes 5 years to build and plan a vessel and plans at least are well advanced (see www.marine.csiro.au/nationalfacility/future).

We are preparing for an exciting research voyage in October to investigate cold core eddies, larval fish, as well as salps just south of the East Australian Current's separation zone (31°S, as it turns east towards New Zealand). The cold core (cyclonic, clockwise) eddies are very interesting as they tease out enriched water from the coastal zone just south of 31°S, and is similar to the coastal, warm core eddies of the Leeuwin Current. Exploiting our two major poleward currents has not been done before.

Iain Suthers at the University of New South Wales has a 3-year Australian Research Council grant to look at the biological oceanography of salps and how they vacuum up production at the very smallest end of the size spectrum. The salps confound our newly published bio-mechanical plankton model (Baird & Suthers, 2007, *Ecological Modelling*). During the cruise we will also sample larval *Sardinops sagax* which are very abundant during our Spring, to complement many and various parallels with the Kuroshio, California, Aghulas, Florida Currents. PhD student Thomas Mullaney is comparing otolith microchemistry of larval *S. sagax* with juveniles caught 3 months later with purse seines near Eden off the southern coast.

As in many other countries, the links between larval fish and climate change effects - however tenuous - are sure to be forged as we all scurry about

preparing an application for a Marine Biodiversity Climate Change Adaptation Network. Some links are not so tenuous.

The Leeuwin Current strength has declined by about 30% since the 1960s (despite going through many ENSO cycles), which is a direct correlate for many species' recruitment (lobster, scallop, pilchard). Hopefully you will have seen the special issue of *Deep Sea Research II* on the Leeuwin Current, which has nearly doubled the number of papers on this anomalous current. Meanwhile the EAC is speeding up, with the Tasman Sea recording a nearly 3°C rise in temperature over the past century, although there is no demonstrated correlate with fish recruitment.

The various marine and terrestrial networks will oversee allocation of \$30 million over 5 years for how ecological and human communities will adapt. A key part of these networks is to use the data from Australia's new Integrated Marine Observing System (www.imos.org.au), as we are now getting the massive deployments underway. Off the coast of New South Wales alone, there will be five oceanographic moorings, a Sea Glider, and a Slocum glider, a WERA high frequency coastal radar near the Queensland border, and two cross-shelf transects of acoustic (Vemco) receivers. Busy times for all of us "down under".

Don't forget our annual meeting of the Australian Marine Science Association, to be held this year in Christchurch, New Zealand 7-10 July 2008 (www.amsa.asn.au/conference) and the Australian Society for Fish Biology, held this year in Sydney 15-18 September 2008 (www.asfb.org.au). §

Jeff Leis says...

"Hey, larval-fish people - check out this site. It is simply loaded with the most wonderful stuff. Allan Connell is an amazing character, and has been doing this as a 'hobby' for years. There is clearly a lot of original stuff here, and it deserves wide recognition and use."

www.fisheggandlarvae.com



Northeast Region

Mark Wuenschel

A recently completed project studied the swimming ability of ingress stage *Anguilla rostrata* and *Conger oceanicus* to evaluate potential mechanisms of cross-shelf transport for these species. Both species spawn in the Sargasso Sea, however they enter estuaries at different developmental stages. *A. rostrata* ingress as glass eels (49-68 mm TL), in contrast to *C. oceanicus* that enter as larger (metamorphosing) leptocephali (68-118 mm TL).

The potential swimming capability (critical swimming speed, U_{crit}) was measured under ambient conditions throughout the ingress period following methods used for reef fish larvae. Collections of *A. rostrata* indicated a protracted ingress season over many months with a decline in relative condition of individuals over the ingress period. *C. oceanicus* occurred over a shorter period later in the season, at warmer temperatures, and at similar levels of condition. Mean U_{crit} values for *A. rostrata* (11.7-13.3 cm s⁻¹) and *C. oceanicus* (14.7-18.6 cm s⁻¹) were comparable, and related to water temperature, relative condition, ontogenetic stage, and total length. Sustained swimming speeds (50% U_{crit}) were used to estimate travel times to the estuary of capture from the edge of the continental shelf and Gulf Stream. Although the life stage crossing the continental shelf differs for these two species, the results indicate both are competent swimmers, and suggest swimming plays an important role during transport from the Gulf Stream and/or edge of the continental shelf to estuaries.

Publications:

Wuenschel, M. J., and K. W. Able. 2008. Swimming ability of eels (*Anguilla rostrata*, *Conger oceanicus*) at estuarine ingress: Contrasting patterns of cross-shelf transport? *Marine Biology* DOI 10.1007/s00227-008-0970-7. §



Southern Region

Claire Paris

From: Jeff Govoni, National Ocean Service, Beaufort, North Carolina

A project at the National Oceanic and Atmospheric Administration, National Ocean Service, Center for Coastal Fisheries and Habitat Research at Beaufort, North Carolina, designed to determine the impacts of undersea detonations on late larval and early juvenile fishes, is now complete. Bedrock is commonly blasted from the bottom when dredging to maintain deep and safe navigation channels. This research will help resource managers evaluate the impact of underwater blasting on fish populations. The study focused on lethal and non-lethal affects to larval and juvenile fish. This work resulted in two publications. The first, the result of experimental detonations at Beaufort, detailed the histopathology of trauma inflicted upon young spot, *Leiostomus xanthurus*, and pinfish, *Lagodon rhomboids*. Information contained in this article was used to develop a model that simulates mortality of young fishes. In the second, model, simulations were applied to a case study of blasting in the Cape Fear River and Wilmington Harbor, North Carolina. This application indicated that nearly 82 million small fishes can be killed over the duration of a typical blasting project. Because these millions represent only 2-3% of larvae and small juveniles in the system, blasting is unlikely to seriously affect fish at the population level.

Publications:

Govoni, J.J., Settle, L.R., and West, M.A. 2003. Trauma to juvenile pinfish and spot inflicted by submarine detonations. *J. Aquat. Animal Health* 15:111-119.

Govoni, J.J., West, M.A., Settle, L.R., Lynch, R.T., and Greene, M.D., 2008. Effects of underwater explosions on larval fish: Implications for a coastal

engineering project, *Journal of Coastal Research* 24(2B):228-233.

From: Lee Fuiman, University of Texas Marine Science Institute, Port Aransas, Texas

Modeling contaminant effects on populations

Cheryl Murphy and Kenny Rose of Louisiana State University Department of Oceanography & Coastal Sciences collaborated with Maria Alvarez and Lee Fuiman of the University of Texas Marine Science Institute on a project that developed modeling techniques to estimate population-level consequences from sublethal effects of contaminant exposure on fish larvae. They combined laboratory studies with coupled statistical and individual-based models to simulate the effects of methylmercury (MeHg) on Atlantic croaker larval survival and growth. Effects of MeHg on larval behavior were analyzed with a regression tree to obtain the probability of larvae escaping a real predatory attack. Measured changes in swimming speeds and regression tree-predicted escape abilities induced by MeHg exposure were then inputted into an individual-based larval fish cohort model.

The individual-based model predicted that under MeHg exposure, larval stage survival was 7–19% of control survival, and the roughly 33-day stage duration was extended by about 1–4 days. MeHg effects on larval growth dominated the response when medusae dominated the predator field, while predation played a more important role when piscine predators dominated. Simulation results suggested that MeHg exposures near extreme maximum values observed in field studies can have a significant impact on larval cohort dynamics, and that the characteristics of the predator-prey interactions can greatly influence the underlying causes of the predicted responses.

Cheryl Murphy is now at the Department of Fisheries and Wildlife, Michigan State University. Maria Alvarez is now at the Institute of Estuarine and Coastal Studies, University of Hull, Hull, England.

Contaminant effects on protein metabolism

Due out soon is a paper by Ian McCarthy and Lee Fuiman on the effects of two contaminants on protein metabolism in red drum larvae. The aim of the study was to measure the effects of a single pulsed dose exposure to environmentally-realistic levels of the herbicide atrazine (0, 40 & 80 $\mu\text{g l}^{-1}$) and the pesticide malathion (0, 1 & 10 $\mu\text{g l}^{-1}$), on growth and protein synthesis in red drum (*Sciaenops ocellatus*) larvae. Growth was assessed in terms of increase in length, weight, and protein content over an 8-day period following exposure. Rates of protein synthesis were measured 2, 4, and 8 days after initial exposure to each contaminant by bathing larvae in seawater containing L-[2, 6-³H] phenylalanine.

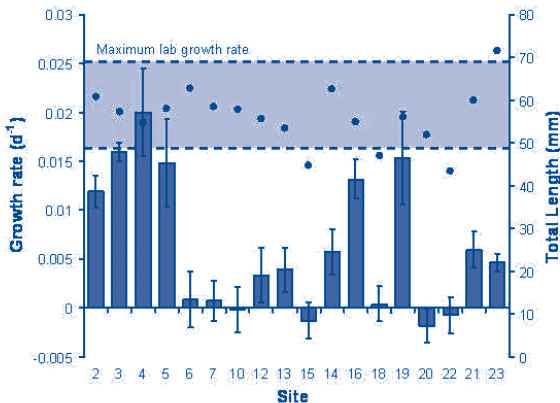
Exposure to atrazine had no effect on larval growth in length, but caused marginally significant declines in growth in weight ($P = 0.05$) and protein content ($P = 0.06$). However, protein synthesis rates were significantly higher for atrazine-exposed larvae on days 4 ($P = 0.04$) and 8 ($P = 0.01$), suggesting an increase in rates of protein degradation. On day 8, the efficiency with which synthesised proteins contributed to growth was significantly lower ($P = 0.04$) in atrazine-exposed larvae. In contrast, malathion had no significant effect on growth in length or protein content, but there were significant decreases in growth in weight over 8 days. The only other significant effect of malathion was an increase in protein synthesis on day 2 for treated larvae relative to controls. Previous work [Alvarez & Fuiman (2005) *Aquat. Toxicol.* 74, 229-241] reported hyperactivity and increased metabolic rate in larval red drum exposed to atrazine, indicating a clear energetic cost. These newest results emphasize the energetic cost of atrazine exposure through elevated rates of protein synthesis and degradation resulting in reduced protein retention efficiency and lower growth rates. Overall, exposure to atrazine from surface water run-off can increase the energy requirements and the larval phase duration in red drum larvae, possibly resulting in reduced survival and recruitment in cohorts exposed to atrazine.

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

To obtain a broad scale 'snapshot' of spatial growth heterogeneity, samples were collected from 25 beaches in August 2005, 2006 and 2007. In addition, the temporal persistence of spatial patterns was examined at a subset of five beaches on fortnightly intervals in 2005 and 2007.

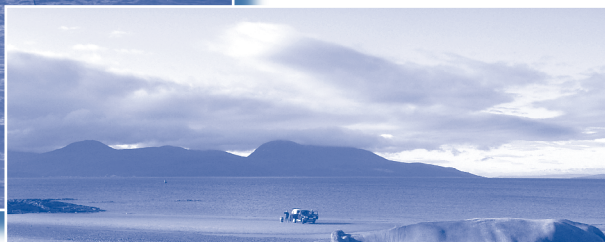
Preliminary field results suggest that there are large differences in growth rates between nursery beaches that cannot be explained by temperature alone. Growth generally declines throughout the nursery season, but the temporal dynamics are site specific. Although there are some indications that density is important in controlling growth, its influence probably varies between sites. The emerging picture of juvenile plaice growth dynamics seems to support Beverton and Iles' (1992) concept of 'mini-nurseries,' whereby coastal regions used by a single population are subdivided into vast



Variation in growth rates and lengths of juvenile plaice in mid-August 2005 between beaches in west Scotland. Growth rates (S.E., n = 2 to 12) were estimated from RNA:DNA measurements using a previously established predictive model. Variability in growth rate between nursery beaches is greater than the range of maximum growth rates observed in the laboratory over a similar temperature range (dashed lines). Total lengths (mean), estimated during the annual mid-August survey undertaken by SAMS, show little correspondence with predicted instantaneous growth rates. Sites correspond to the locations indicated on the adjacent map.

numbers of separate units, each with different growth characteristics.

Benjamin Ciotti trawling for juvenile plaice along the west coast of Scotland.



Michael Burrows and Christine Beveridge of Dunstaffnage Marine Laboratory catching plaice in West Scotland.

The next stage in the collaborative project will be to better define the density-independent and density-dependent aspects of habitat quality and how they are linked with environmental productivity. Following his move to Dunstaffnage Marine



Locals are now used to the annual arrival of the juvenile plaice survey team.

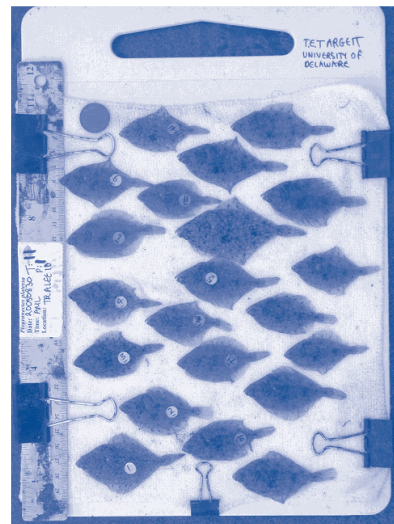
Laboratory, Clive Fox is now poised to participate in this international effort.

The project has been supported by small grants

from the University of Delaware, the Scottish Association for Marine Science, the British Ecological Society, the American Fisheries Society, the National Environmental Research Council (UK), and the American Society for Ichthyologists and Herpetologists.

Literature cited:

Beverton, R. J. H., & Iles, T. C. 1992. Mortality rates of 0-group plaice (*Platessa platessa* L.), dab (*Limanda limanda* L.) and turbot (*Scophthalmus maximus* L.) in European waters. III. Density-dependence of mortality rates of 0-group plaice and some demographic implications. *Netherlands Journal of Sea Research* 29:61-79. §



People

Bill Richards Retires



William J. Richards retired 2 May 2008, finishing a 45-year career with the National Marine Fisheries Service (NMFS) and its predecessor organizations. His career was distinguished by the study of the early life history of fishes.

Bill received his B.S. in Biology from Wesleyan

University and his Ph.D. in Vertebrate Zoology from Cornell University in 1963. He accepted a position with the Bureau of Commercial Fisheries (BCF) Biological Laboratory in Washington D.C. in 1963. His first assignment was as project leader for a study on the distribution, abundance, taxonomy, and ecology of the eggs and larvae of the scombrid fishes of the tropical Atlantic Ocean, a subject he pursued throughout his career. In 1965, he transferred to the NMFS Tropical Atlantic Biological Laboratory in Miami, Florida. There he served as a Supervisory Zoologist and as Project Leader of three projects -- Ecology of Tropical Atlantic Scombrid Larvae and Juveniles, Fecundity of Scombrid Fishes, and Behavior of Scombrid Larvae and Juveniles. It was during this time that he began to develop his body of work on identification and distribution of scombrid larvae, and his work on the Genus *Thunnus*. His work on bluefin tuna earned him an international reputation as a preeminent researcher, and he is recognized worldwide as the leading expert in matters concerning larval bluefin tuna dynamics, and, indeed, in all matters larval fishes.

With the re-organization of the BCF into what is now the Miami Laboratory of the NOAA/NMFS Southeast Fisheries Science Center (SEFSC), Bill served as a Program Manager for the Reproductive and Developmental Biology of Fishes Program, the Pre-recruit Fisheries Monitoring Program, and the MARMAP Ichthyoplankton Survey Program. He was instrumental in developing the current ichthyoplankton survey for bluefin tuna that has been used since 1977 in the Gulf of Mexico and in developing the SEAMAP program. In 1977 Bill was named Director of the Miami Laboratory of NMFS and served in that post until 1983. As Director of the Miami Laboratory, he supervised scientific and support staff, and was responsible for planning, organizing, and implementing three research programs: Ocean Pelagics, Reef Resources, and Fisheries Statistics. These programs gathered basic life-history and management-related statistics on highly migratory and other fish species, throughout the U.S.

Atlantic Economic Exclusion Zone. Since 1983 he has held the position of Senior Scientist at the SEFSC in Miami. He has advised the Center Director on all aspects of research on the early life history of fishes, especially the application and use of ichthyoplankton research for fishery-independent assessment of stocks in the management of fisheries of ecological and national economic importance.

Bill has published over 200 professional and scientific articles and 102 peer reviewed book chapters. He served a 3-year term as Editor for the NMFS journal *Fishery Bulletin*. He served as the Editor of the *Bulletin of Marine Science* and *Studies in Tropical Oceanography* for 23 years. He served or still serves on the editorial boards of *Copeia*, *Fishery Bulletin*, and *Fishes of the Western North Atlantic*.

Bill was managing Editor of two monumental books on the early life history of fishes: the Ahlstrom Memorial Symposium, *The Ontogeny and Systematics of Fishes*, published in 1984, and the two volume book the *Early Stages of Atlantic Fishes – An identification Guide for the Western and Central North Atlantic*, just published. The latter represents a compilation of 45 years of Bill's research on the identification and taxonomy of larval fishes. This guide offers the most complete coverage of eggs, larvae, and juvenile fishes of all families found within this geographic range. It will be used as a field, laboratory, teaching, and reference guide for generations of larval fish taxonomists.

Bill's professional life was not restricted to government service. From 1966 to 1975 he served as an Adjunct Associate Professor at the Rosenstiel School of Marine and Atmospheric Sciences, University of Miami. In 1975, he was appointed Adjunct Professor to the Graduate Faculty at the University of Miami, and continues in this capacity at present. In 1983, he was appointed a Fellow of the Cooperative Institute for Marine and Atmospheric Studies. Dr. Richards also serves as a member of the Affiliated Faculty of the College of Science, Florida Atlantic University. He taught courses on the early life history of fishes. He directed research of 34 students, either as Chairman for Ph.D. students or M.S. students or as an advisory committee member. His most recent Ph.D. student graduated in 2007. One of his past students attests, that Bill's greatest attribute as a teacher and mentor is his ability to encourage and motivate young researchers. Bill's ability to teach and guide registered with the research staff within all of NOAA.

Bill has been a steadfast supporter and promoter of the Early Life History Section (ELHS) of the American Fisheries Society (AFS). His support has been morale as well as material. His unwavering encouragement of young researchers in the early life history of fishes, has been recognized and appreciated by many. He served as Chair of the local committee of the 10th annual Larval Fish Conference held on the campus of the University of Miami in 1986. This particular Larval Fish Conference drew wide attendance and a wide array of international participants. He also assisted in

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Update on the 2008 Larval Fish Conference

As of this writing, we have more than 150 people (54 students!) from over 25 countries registered for LFC 2008 this August in Kiel. Over 140 abstracts have been submitted on a very broad range of subjects. Beyond the cosmopolitan and interesting group of scientists who will be attending the Conference, we have invited a set of distinguished scientists to give keynote lectures on our theme sessions. These include:

Prof. Elizabeth North, University of Maryland, Cambridge, USA, will give a keynote talk in the session "Larval ecology linked to physical processes."

Prof. Harald Rosenthal, Neuwulmstorf, Germany, will speak on "Rearing methodologies for aquaculture and stock enhancement: criteria to enhance performance in the respective environment" in the session "Aquaculture and stock enhancement of early life stages."

Two speakers will provide their perspectives on the session entitled "Early life history strategies of fish and cephalopods."

Great Lakes Ichthyoplankton Identification Workshop

June 22, 2008 — F.T. Stone Laboratory, Ohio

John Hageman announces his annual Great Lakes Ichthyoplankton Identification Workshop, offered by The Ohio State University's F.T. Stone Laboratory. The date this year is Sunday, June 22, 2008.

The workshop uses preserved specimens along with Auer (1982) to familiarize students, agency folks, and private consultant employees with common Great Lakes ichthyoplankton.

For additional information or to enroll, individuals should go to stonelab.osu.edu to review the course syllabus and requirements for college credit or non-credit workshop participation. §

8th Larval Biology Symposium

6-11 July 2008 — Lisbon, Portugal

The 8th Larval Biology Symposium will be hosted by IPIMAR-Instituto Nacional de Recursos Biológicos and held on the campus of the Faculty of Sciences of the University of Lisbon. The conference aims to promote the exchange of information and enhance international research collaboration. The symposium programme will cover a wide range of research areas. Five symposia were chosen to give a more comprehensive, rather than specialized approach. The conference organizers encourage the participation of students, as well as professional researchers from Europe and all over the world.

The deadline for abstracts and registration is 30 March 2008. More information is available at: ipimar-iniap.ipimar.pt/larval §

Prof. Arild Folkvord, University of Bergen, Norway, will present "Early life history growth strategies in fish larvae: What can growth and survival patterns tell us?" Prof. Érica Vidal, University of Parana, Brazil, will provide a complementary viewpoint from the perspective of a cephalopod specialist.

Michael Fahay, West Bath, Maine, USA (recently retired from the NOAA Fisheries Service Sandy Hook Laboratory, New Jersey), will give a keynote address on the significance of transitory larval fish characters in the session "Larval fish and cephalopod taxonomy."

Prof. Warren Burggren, University of North Texas, Denton, USA, will present a talk on "Physiological study of larval fishes: Opportunities and challenges" in the theme session on "Developmental fish physiology."

Registration is accepted through August 3, 2008

Besides an outstanding scientific programme, we will show you Kiel from the water on board the "HEIKENDORF" during our field trip to Falkenstein Beach, where we have made arrangements for a big barbecue.

The Conference banquet will be at a nice hotel overlooking the fjord. The location, along with special food, drinks, and live music will provide us with a memorable evening (and the good news is that you have already paid for it by your registration fee!).

I'm looking forward to welcoming you to Kiel! §

— Catriona Clemmesen
(On behalf of the LFC Local Organising Committee)

2008 Larval Fish Conference Program

In case you cannot attend this year's conference, here are some of the presentations you will miss.

Patterns Of Distribution Of Larval Fish Assemblages In The Proximity Of An Island Wake - Fowler, Miskiewicz, Cox, Suthers

Comparison Of Abundant Proteins During Early Development Of Atlantic Cod (*Gadus morhua*) Larvae By Proteome Analysis. - Sveinsdóttir, Gudmundsdóttir, Vilhelmsson

Evaluating The Importance Of Predation During The Recruitment Process Of Baltic Sprat And Cod - Voss, Stepputtis, Bernreuther, Schmidt, Hinrichsen

The Influence Of Exposure And Distance Offshore On Larval Fish Assemblage Near Coral Reef: A Case Study At Hurghada, Red Sea, Egypt. - Abu El-Regal, Elkomi, El-Etreby, Ahmed, Elliott

Vertical Structure Of Larval Fish Assemblages During Diel Cycles In Summer And Winter In The Southern Part Of Bahia De La Paz, Mexico. - Aceves-Medina, Saldierna-Martinez, Hinojosa-Medina, Jiménez-Rosenberg, Hernández-Rivas, Morales-Ávila

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Upcoming events...cont'd from p. 7

Seasonal Patterns Of Larval Fish Distribution And Abundance In The North Eastern Mediterranean - Ak Orek

The First Mediterranean Record Of Eggs And Yolk-Sac Larvae Of Indo-Pacific *Chirocentrus Dorab* (Forsskål, 1775), (Teleostei: Chirocentridae) - Ak Orek

Validation Of Daily Deposition Increments In The Otoliths Of European Anchovy Larvae (*Engraulis encrasicolus* L.) Reared Under Different Temperature Conditions - Aldanondo, Cotano, Etxebeite, Álvarez, Martínez De Murguía

Salinity Affects Diameter And Specific Gravity Of Non-Adhesive Semi-Bouyant Eggs Of Four North American Minnow Species - Alleman, Cowley, Sallénave

Fish Larvae Retention By Coastal Flow In Archipelago De Cabrera National Park (NW Mediterranean) - Alvarez, Sabatés, Catalan, Palmer, Morales-Nin, Casas, Jordi, Basterretxea

Ontogenetic Changes In Autoregulation Of Thyroid Receptor Mrna Expression In Red Drum (*Sciaenops ocellatus*) - Applebaum, Holt, Nunez

Long-Term Dynamics Of The Spring-Spawning Herring Larvae (*Clupea harengus membras*) In The Gulf Of Riga (Baltic Sea) - Arula, Ojaveer, Ojaveer, Põllupuu

Feeding Fish Larvae With Anhydrobiotic And Enriched Nematodes Grown In Bioreactors - Assheuer

Seasonal Variation In Larval Abundance Of Sea Basses In Magdalena Bay, Mexico (1982-1986) - Avendaño-Ibarra, De Silva-Dávila, Hernández-Rivas

Feeding Behavior Of The Rotifer *Brachionus "Cayman"* Using Polystyrene Latex Beads - Baer, Schulz, Mills, Hamre

Species Composition And Distribution Patterns Of Early Life Stages Of Cephalopods In The Northern Gulf Of Mexico (1996-1997) - Bizikov, Nesis, Nikitina, Schobernd, Lyczkowski-Shultz, Linkowski

Spatial Variation In Cephalopod Paralarvae Assemblages In The Northern Gulf Of Mexico In Relation To Water Characteristics - Bizikov, Nikitina, Schobernd, Lyczkowski-Shultz, Linkowski

Behaviour Of Larval Cod (*Gadus morhua*) And Haddock (*Melanogrammus aeglefinus*) In Association With Various Odours - Bjelland, Skiftesvik, Browman

Ichthyoplankton Information System: A Web-Based Decision Support Tool In The Northeast Pacific Ocean And Bering Sea Providing Marine Early Life History Data For Fisheries Management - Blood, Matarese

Experiments On The Viability Of European Catfish (*Silurus glanis* L.) Larvae Originated From Native And Cryopreserved Sperm In Laboratory And Hatchery Conditions - Bokor, Mosonyi, Iltzész, Müller, Horváth, Horváth, Urbányi

Testing The Suitability Of A New Fixative Both For Morphological Identification And Dna Extraction Of Fish Larvae - Borges, Arnaud-Haond, Gonçalves, Serrão

Offspring's Phenotypic Plasticity In Response To Cross-Generational Maternal Effects In Guppies. - Buehler

Physiological Study Of Larval Fishes: Opportunities And Challenges - Burggren

A Comparison Of Three Potential Non-Lethal Methods For Estimating Condition And Growth Rates In Atlantic Salmon Smolts (*Salmo salar*) - Caldarone, Maclean

Occurrence Of *Poromitra capito* Goode & Bean, 1883 And *Melamphaes simus* Ebeling, 1962 From The Oceanic Region Of The Southwest Atlantic Ocean (12°S-23°S) - Campos, Bonecker, Castro

Is There A Relationship Between The Distributions Of Late-Stage Larval Fish And Of Their Prey At A Small Spatial Scale In A Coral Reef Lagoon? - Carassou, Ponton, Ird

Occurrence And Distribution Of Paralepididae Larvae From The Southwest Atlantic Ocean (12°S - 29°S) - Castro, Bonecker, Katsuragawa

General Thermal Effects On The Ontogenetic Rates Expressed In The Early Life History Of Fishes - Chambers

Temporal Variations In Larval Fish Assemblages In The Heavily Regulated River Murray, South Australia; With Reference To Flow Regimes - Cheshire, Ye, Gillanders, King

Passive And Active Distribution Control Of Capelin Larvae In The Gulf Of Alaska - Cooper, Duffy-Anderson, Lankbury, Mier, Stabeno, Foy

Rearing Larvae Of Dusky Grouper, *Epinephelus marginatus* (Lowe, 1834) In A Mesocosm System - Cunha, Quental, Barradas, Pousão-Ferreira

Linking Fatty Acid Signatures Of Yellow Perch Forage To Early Larval Mortality In Lake Michigan. - Czesny, Redman, Rinchard

Impacts Of Climate-Driven Environmental Variability On The Growth And Survival Of Larval Fish In The North Sea: Long-Term Model Runs (1990-2004) - Daewel, Peck, St. John, Schrum

Seasonal And Interannual Changes In Squid Paralarvae Off The West Coast Of Baja California, Mexico (1998-1999) - De Silva-Dávila, Granados-Amores, Hernández-Rivas, Hochberg, Durazo

Squid Paralarvae Community Off The West Coast Of Baja California, Mexico (1998-1999) - De Silva-Dávila, Granados-Amores, Hernández-Rivas, Hochberg, Durazo

Growth And Survival Of Rainbow Smelt Larvae In Relation To Zooplankton Species Assemblages And Freshwater Discharge In The Saguenay Fjord, Canada - Diab, Sirois

Diel Vertical Migration Of Young-Of-The-Year Burbot As An Adaptation To Maximize Growth In The Oligotrophic, Prealpine Lake Constance - Donner, Eckmann

Larval Fish Abundance And Physical Environmental Forcing In The Gulf Of Alaska, 1981-2003, With Reference To Early Life History Strategies - Doyle, Picquelle, Mier, Spillane, Bond

Influence Of Temperature On Size And Developmental Stage At Hatch Of Marine Fishes - Falk-Petersen, Tønnesen Busch

Ontogeny Of Critical Swimming Speed Of Wild-Caught And Laboratory-Reared Red Drum Larvae (*Sciaenops ocellatus*) - Faria, Ojanguren, Fuiman, Gonçalves

Specific Features Of Perch Larvae And Fry Cultivation In Industrial Conditions - Fedorovych, Ponomarev

Somatic Growth Effect On Otolith Growth And Otolith Asymmetry Of Late Larval Atlantic Menhaden - Fey

Early Life History Growth Strategies In Fish Larvae - What Can Growth And Survival Patterns Tell Us? - Folkvord

Age And Growth Of Blue Mackerel (*Scomber australasicus*) Larvae On The East Coast Of Australia; The Influence Of Water-Mass On Growth Rate - Fowler

The Effect Of PCO₂ On The Egg Development And The Condition Of Newly-Hatched Larvae Of Atlantic Herring (*Clupea harengus* L.) - Franke, Krug, Clemmesen

Measuring Temperature-Dependent Growth And Condition In Juvenile Two-Spotted Gobies (*Gobiusculus flavescens*) Of The Kiel Fjord Using Biochemical Indicators - Frommel, Clemmesen

Influence Of Temperature On The Growth Rate Of Two Juvenile Baltic Sea Goby Species (*Pomatoschistus microps* And *Gobiusculus flavescens*) - Frommel, Peteret, Clemmesen

Fatty Acid Composition Of Eggs Affects Behavioral Performance Of Red Drum Larvae - Fuiman, Ojanguren

Diel Distribution Of Fish Larvae Communities Off Northwestern Iberia - Garrido, Santos

Analysis Of Hatch Time And Growth Of North Sea Lesser Sandeel (*Ammodytes marinus*) - Gauger, St. John, Mosegaard

Comparison Of Survival Rate And Final Weight In Larvae And Fry Stages Of Rearing Cyprinids In Nursing Ponds In Iran - Ghomi, Faghani

Nutritional Status And Growth Of Cape Hakes *M. capensis* And *M. paradoxus* Larvae In The Southern Benguela Upwelling System Off South Africa - Grote, Ekau, Hagen, Clemmesen, Verheye

Otolith Microstructure Analysis Of Post-Larval And Juvenile Sprat (*Sprattus sprattus*) In The Western Baltic Sea - Günther

Coupling Climate And Fish Population Models: An Example Based On Early Life Stage Survival Of Atlantic Croaker - Hare, Alexander, Fogarty, Williams, Scott

Will Climate Change Affect The Reproduction Areas Of Roach In The Northern Baltic Sea? - Härmä, Lappalainen, Urho

Larval Herring Growth Vs. Consumption: Testing Ibm Parameterisations At The Individual Level - Hauss, Würzburg, Peck

Impacts Of Prey Field Characteristics On Foraging, Growth And Condition Of Larval Herring - Hauss, Würzburg, Peck

Growth And Recruitment Of Larval Vendace (*Coregonus albula*) In A Deep Lake - Helland, Clemmesen, Peteret, Mehner

Patterns In Spatial And Temporal Distribution, Condition And Diet Of Wild And Hatchery Chum Salmon (*Oncorhynchus keta*) In The Taku Inlet, Alaska - Hillgruber, Reese, Sturdevant, Wertheimer, Focht, Smoker

Distribution, Transport And Condition Of Early Life Stages Of Walleye Pollock, Pacific Cod, And Arrowtooth Flounder In The Eastern Bering Sea Under The Auspice Of Changing Climatic Conditions - Hillgruber, Duffy-Anderson, Eisner, Heintz, Siddon, Matarese, Napp

Vertical Distribution And Nutritional Condition Of Baltic Cod Larvae Revisited - Huwer, Clemmesen, Grønkrjær, Köster

Marine Protected Areas As A Fisheries Management Tool In The Central Baltic: An Evaluation By Coupling Otolith Microstructure Analysis To A Hydrodynamic Model - Huwer, Hinrichsen, Böttcher, Köster

Evidence Of Growth-Selective Survival In Larval Japanese Sea Bass *Lateolabrax japonicus* - Islam, Ueno Maizuru, Yamashita

Spatial-Temporal Variability In Composition Of Ichthyoplankton In A Mediterranean Coastal Lagoon (The Mar Menor, SE Of Spain) - Quispe-Becerra, Pérez-Ruzafa, Marcos, García-Charton

Do Striped Bass (*Morone saxatilis*) Spawn In Response To High-Flow Events? - Jahn, North, Houde

Fish Larvae Off Baja California, México - Jimenez-Rosenberg, Aceves-Medina, Saldierna-Martínez

Fish Larvae Assemblages Off Baja California Sur, And Implications Of Ontogenetic Changes In Their Distribution - Jimenez-Rosenberg, Aceves-Medina

Probiotics In Halibut Lariculture - Johannsdottir, Karadottir, Smaradottir, Bjornsdottir

Measuring Connectivity With Natural Tags For Early Life Stages Of Fish - Jones

Conserving An Ancient Species By Considering Marine Reserves, Biodiversity And Human Impacts Across Space And Time - Jordaan, Dunton, Conover

How Slow Can You Grow? Variability In The Timing Of Daily Ring Formation In Larval Sprat - Kanstinger, Peck, Huwer, Baumann, Clemmesen, Peteret

Co-Occurrence Of The Larvae Of Three Small Pelagic Fishes In The Southern North Sea: Abundance, Distribution And Biochemical-Based Condition - Kanstinger, Peck, Alheit

Delayed Density Dependence As Regulation Mechanism Of Populations: Reproduction And Early Development - Karjalainen, Urpanen, Marjomäki, Huuskonen, Sarvala

Effect Of Ocean Turbulence On Survival And Ingestion Of Pacific Bluefin Tuna Larvae - Kato, Kitagawa, Masujima, Inagake, Kimura

Cod (*Gadus morhua* L.) Functional Larval Development - What Are The Important Variables? - Kjærsvik, Wold

Did The Demolition Of The Jamestown Bridge Affect The Numbers Of Fish Larvae In Narragansett Bay, Rhode Island In 2006? - Klein-Macphree, Erkan

Summer Assemblages Of Fish Larvae In The German Bight, Southern North Sea: Near-Shore, Offshore And Frontal Habitats - Kloppmann, Kanstinger, Bils, Kleinschmidt, Peck

The Influence Of First Feeding Diet And Diet Change On The Growth Response And Developmental Success Of Atlantic Cod - Koedijk, Folkvord, Foss, Stefansson, Imsland

The Effect Of Vitamin B12 On The Larval Development Of African Catfish (*Clarias gariepinus*) - Kovacs, Lefler, Urbányi, Baska, Lakos, Tolokán

Feeding Success Of Young-Of-The-Year Yellow Perch In Canadian Boreal Shield Lakes: Abiotic And Biotic Impacts Of Forest Removal In Catchments - Leclerc, Sirois, Bérubé

Larval Fish Assemblages As Indicators Of The Surface Dynamic In The Eastern Tropical Pacific Off México - León Chávez, Sánchez Velasco, Beier

Does Larval Pike (*Esox lucius*) Behaviour Change In Eutrophicated Environments? - Salonen, Engström-Öst

Vertical Distribution Of Sprat Larvae In Two Deep Basins Of The Eastern Baltic Sea And Their Coincidence With Food Items - Makarchouk

Larval Abundance And Settlement Of Reef Fish In St. Thomas, USVI In 2007 And 2008 - Malca

Does Food Quality Really Matter? - Malzahn, Clemmesen, Aberle, Boersma

Larval Ingress Observations From A Long-Term Sampling Program At Beaufort Inlet, North Carolina, USA: Temporal Patterns And Relevance To Coastal Fisheries - Martin, Taylor, Mitchell, Buckel, Adamski

Early Life History Of Greenland Halibut (*Reinhardtius hippoglossoides*) In The Eastern Bering Sea: Egg Distribution, Development And A Preliminary Look At Buoyancy In February 2008 - Matarese, Blood, Sohn, Duffy-Anderson

Learning From Losers: Investigating The Sources And Severity Of Mortality In Freshwater Fish During Their Early Life Stages - McCasker, Humphries, Meredith

Use Of Sr/Ca Ratios And Daily Growth Increments In Otolith To Track Migratory Environmental History Of The Gobies In The Early Stage - Chang, Iizuka, Tzeng

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Available now: Early Stages of Fishes in the Western North Atlantic Ocean: Davis Strait, Southern Greenland and Flemish Cap to Cape Hatteras

By Michael P. Fahay

Volume 1: Acipenseriformes through Syngnathiformes, pp.1 - 931.

Volume 2: Scorpaeniformes through Tetraodontiformes, pp.932 - 1696.

Published by North Atlantic Fisheries Organization, Halifax, 2007.

This comprehensive scientific publication is the only up-to-date textbook providing detailed descriptions and accurate drawings of the early life-history stages of the fishes from the Northwest Atlantic Ocean north of 35°N and west of 40°W.

The region covers the world's most famous fishing grounds and includes the Davis Strait, southern Greenland, Flemish Cap, Georges Bank, northern Sargasso Sea and Middle Atlantic Bight to Cape Hatteras.

Includes: a checklist of 1075 fish species occurring in the study area; descriptions of egg, larval and juvenile stages of 760 species from 196 families; synopses of habitats from estuarine to abyssal; updated ranges and many species' range extensions, often based on early stages; identification facilitated by numerous descriptive tables; morphological characters of developmental stages summarized and tabulated for 28 orders of teleosts, 15 suborders of Perciformes, 26 families of Percoidei and several other major groups; appendices with tabulations of meristic characters, museum reference material sources and collection data for original material; and some 3000 drawings of eggs, larvae, and juveniles, and 2000 references.

Available at www.nafo.int or email bcrawford@nafo.int. §

Other Recent Publications of Interest

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

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

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

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

Reproductive Biology and Early Life History of Fishes in the Ohio River Drainage: Ictaluridae - Catfish and Madtoms, Volume III. T.P. Simon and R. Wallus. Published by CRC Press. ISBN 0849319196. 2003.

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

Upcoming events...cont'd from p. 8

Sensitivity Of Cephalopod Embryonic Development To Elevated Seawater PCO₂ And Temperature - Melzner, Hu, Gutowska

Laboratory Studies On Development, Growth Validation And Nucleic Acid Composition Of Larval Northeast Atlantic Mackerel, *Scomber scombrus* L. - Mendiola, Alvarez, Cotano, Martínez De Murguía

Growth And Condition Of Eastern Baltic Cod (*Gadus morhua*) Larvae Reared At Different Temperatures And Prey Levels - Meyer, Peck, Støttrup

Trophic Habits Of Three Clupeoid Larvae In NW Mediterranean: Anchovy, Sardine And Round Sardinella - Morote, Olivar, Uriarte

Observed Tradeoffs In Larval Fish Development - Morton, Pepin
Seasonal And Spatial Distribution Of Larval Fish Assemblages Off Gran Canaria Island, Canary Islands - Moyano Hernández-León

Temporal And Spatial Patterns Of Larval Atlantic Bluefin Tuna In The Gulf Of Mexico: Synthesis Of Thirty Years Of Data - Muhling, Lamkin, Richards

The Downside Of Batch Spawning: Interference Competition For Food In Young Red Drum - Nakayama, Fuiman

Fisheries Oceanography In The Virgin Islands: Preliminary Results From A Collaborative Research Endeavor - Gerard, Lamkin

Does Thermal Experience Cause Seasonal Variability In Escape Responses Of Red Drum Larvae? - Ojanguren, Fuiman,

Tissue Effect On RNA:DNA Ratios To The Analysis Of Marine Fish Larvae Condition - Olivar, Diaz, Chicharo, Morote

Patchiness Structure And Mortality Of Pacific Saury *Cololabis saira* Larvae In The Northwestern Pacific - Oozeki, Takasuka, Kubota, Kimura, Okamura

Observations On Within Family And Between Families Variation In Growth And Nutritional Status Of Larval Atlantic Cod Reared In Mesocosms - Paulsen, Bühler, Clemmesen, Case, Carvalho, Hutchinson, Kjesbu, Otterå, Svåsand, Thorsen

Intra- And Inter-Specific Influences Of Temperature On The Size-At-Hatch And Yolk Utilization Of Marine Fish Larvae - Peck, Bills, Lindemann, Schneider

Intra- And Inter-Annual Differences In The Drift Trajectories And Dispersion Of Marine Fish Eggs And Larvae In The North Sea - Peck, Kühn, Pohlmann, Hinrichsen

Estimating Fish Egg Mortality With A Vertical Life Table Approach - Peña, Irigoien, Santos, Uriarte

Allometric Growth Patterns During Early Ontogeny Of The Spotted Sand Bass *Paralabrax maculatofasciatus* In Culture Conditions - Peña, Dumas

Growth, RNA:DNA Ratio And Prey Of Juvenile Garfish (*Belone belone*) From Kiel Fjord, Baltic Sea - Coupling Experiments With Field Observations - Peschutter, Franke, Petereit

Linking Fatty Acid Composition And Nutritional Condition Of Larval Herring (*Clupea harengus* L.) - Peschutter, Clemmesen, Malzahn

The Influence Of Different Salinity Conditions On Egg Development, Egg Survival And Morphometric Traits Of Yolk Sac Larvae Of Sprat (*Sprattus sprattus*) From The Baltic Sea - Petereit, Hinrichsen, Voss, Freese, Clemmesen

Evaluation Of Nutritional Condition Of The Spotted Sand Bass *Paralabrax maculatofasciatus* Larvae During First Feeding And Weaning - Pliego-Cortes, Peña, Dumas, Hernández-Ceballos

There are at least 31 more papers. Find abstracts for all of them at the Larval Fish Conference website: www.larvalfishcon.org §

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

Ian McCarthy is now at the School of Ocean Sciences, Bangor University, Bangor, Wales.

Publications:

Murphy, C.A., K.A. Rose, M.C. Alvarez, and L.A. Fuiman. 2008. Modeling larval fish behavior: Scaling the sublethal effects of methylmercury to population-relevant endpoints. *Aquatic Toxicology* 86:470-484.

McCarthy, I.D., and L.A. Fuiman. in press. Growth and protein metabolism in red drum (*Sciaenops ocellatus*) larvae exposed to environmental levels of Atrazine and Malathion. *Aquatic Toxicology*. §

People...continued from p. 6

the development and execution of the 13th annual Larval Fish Conference in Merida, Mexico. In Bill's retirement, the ELHS will sorely miss his support.

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

Bill is proud of his family and his achievements in his community as well as his professional accomplishments. He serves as an active member and officer in several churches and as a board member of several private religious institutions. He serves as an officer of a local citizen's association. He was President of Lewis & Reilly, Inc., a family business, for five years. He takes pride in his tree farm in Pennsylvania, where he will live in retirement. §

— John Lamkin & Jeff Govoni (ELHS Historian)



Atlantic croaker (Micropogonias undulatus)

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

barbecue at Falkenstein Beach, and the closing conference banquet. We look forward to all of this and to seeing our many international colleagues. Thanks in advance to Catriona and the local committee.

A quick note here on the 33rd annual Larval Fish Conference in 2009. Our Section will be meeting as a 'participating society' with the Joint Meeting of Ichthyologists and Herpetologists (JMIH) in Portland, Oregon (July 22 to July 27 2009). The LFC will be a check-off box on the website for this meeting so that we will be able to maintain a common break-out room at the Portland Hilton (meeting site) for our LFC papers. I want to thank Doug Markle, Oregon State University, and his band of colleagues for agreeing to serve as our Section's local host for this meeting. Further details will appear on our Section and Conference websites after this summer's LFC, and on the American Society of Ichthyologists and Herpetologists' (ASIH) website (www.asih.org). This will be the first time that we have met with ASIH since 1997 in Seattle, Washington. Many of our members have been promoting meeting jointly with like-minded societies like ASIH and other sponsoring societies of the JMIH, and we are all excited about this plan. If you have not yet been to a joint meeting, you will benefit from the number and diversity of papers on all things ichthyological and herpetological, a number of meeting-wide socials, and likely an event or two specifically for the LFC crowd.

I want to spend the rest of my message with several observations about our Section from the perspective of your somewhat seasoned President. First, my tenure in office has gone too quickly! All elected officers in our Section with the exception of our Treasurer serve for two years (our Treasurer signs on for a four-year term). I took office as your President at our joint meeting with our parent society, the American Fisheries Society (AFS), in Lake Placid, New York in September 2006. I will pass the Section lead to Jon Hare this August at the ELHS Business Meeting during the LFC in Kiel. (Denice Drass, our Section Secretary, will also be passing her elected post on to Lone Hunt von Herbing

at the 2008 LFC – thanks Denice for your continuous contributions to the Section!). At the midpoint of this 2-year period we had an excellent LFC in St. Johns, Newfoundland. We have also managed to take care of some, but not all, of the business that I initiated at the start of my tenure.

Regarding our annual meeting: certainly the LFC is central to our Section, is one of its *raison d'être*, and is the basis for why the ELHS is one of the most vibrant Sections of the AFS. The LFC is a consistently good meeting; one that many of us go to year after year and that is often the sole meeting some of us budget for when funding is limited. What is the basis of this commitment to the LFCs by so many within our community? I believe that at its core it reflects the scientific quality of the meeting, the shared focus by most of the attendees on early life stages of fishes, and the camaraderie that we experience when at this conference. But I also believe that it reflects the diversity of our conference venues and the variety of meeting formats due to our occasional participation in joint meetings with our parent and other societies. For many of us, these high quality yet diverse and varied LFCs provide opportunities for an intellectual recharge, lead to new collaborations, and are always a means to reconnect with past colleagues. Our LFCs are also fantastic fora for students to present their work, to interact with professional scientists from the broader community, and to network with other students and colleagues. The opportunities for students to compete for the Sally L. Richardson Best Student Paper Award and the John H.S. Blaxter Best Student Poster Award, as well as receive Student Travel Grants to get them to the LFCs, adds significantly to the pay-offs for student involvement.

More recently, the LFCs have proven to be an excellent basis for international networking. We first met outside the USA for the 8th LFC in 1984 (Vancouver, Canada – thanks to Jeff Marliave), and we first met outside of North America for the 19th LFC in 1995 (Sydney, Australia – thanks to Mike Kingsford and Jeff Leis). Of our 32 LFCs, eight have been held outside of the USA

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President's Message...cont'd from p. 10 and four outside of North America. The trend in recent years has been for more frequent international venues for our LFCs, e.g., six LFCs have been held outside of the USA in the last 15 years (1994 – 2008). I embrace the international nature of our conferences as a healthy development – one that reflects changes both in our scientific discipline and the way we prosecute our research activities. I also believe that the trend towards more international connections is a consequence of the way technological change shrinks our world and aligns our common interests. Moreover, the regional-to-global nature of many of our research topics accelerates this alignment of priority research topics among colleagues. Pragmatically, of course, the specific locations of our LFCs are a direct result of the willingness of colleagues around the world to host our conferences. To those hosts – past and future – I say 'thank you' on behalf of our Section.

To close my comments on planning for and trends in our LFCs, we are still looking for offers to host our LFCs over the next 3 to 5 years. At present, we are pursuing offers – some made after an evening of imbibing at previous LFCs – from Miami, Florida, Denton, Texas, Santa Barbara, California, and Townsville, Queensland (Australia). The Section has approved the offer to meet in Bergen, Norway in 2012, and I have repeated my offer to host the LFC

in 2017 in New Jersey (USA). Please step forward friends, we need your efforts!

Regarding our Section in general, I have several comments and requests. First, in order to continue with vibrant meetings and a professional societal network that links many of us to each other and to other like-minded associations, we must invest in our infrastructure. Put quite simply, our infrastructure is people, their labor, and the products that they generate for this Section. Whether the products are the LFCs, our Section newsletter STAGES, our website, our student awards and grants, or many items beneficial to our membership, these only happen through the labors of our member volunteers. I must thank those who have given freely of their time. To the other elected officers – Denise Drass, Betsy Laban, Jon Hare, and Ione Hunt von Herbing – thanks for the time that you have and/or will be giving to the Section during your tenure. To the many appointed office holders, and the standing and ad-hoc committee chairs – Jeff Govoni, Lee Fuiman, Jeff Buckel, Fred Scharf, Art Kendall, Grace Klein-MacPhee and all of your support committees – an acknowledgement and simple 'thank you' does not express the gratitude that I have for your many contributions. Regional Representatives are responsible for canvassing their respective geographic

areas for news from the membership. The distillation of their efforts is seen in the regional reports in each issue of STAGES. I thank them for their tireless efforts in extracting news from our membership.

Clearly, any product is the result of a process. This process might include contacting colleagues; gathering and collating information from members; and summarizing then disseminating the products that gets member information out to Section members and the community at large.

But the first and most important step in these overall endeavors is for you, the served member, to step up and volunteer to help carry these labors forward. Are you ready? Do you ask yourself, 'Is he talking about me?' or 'Am I eligible and qualified to contribute?' Here is my answer: If you have attended two or more LFCs, you have just as much right – and just as much responsibility – to ascend to a contributing member role as anyone else in our Section. As is evident from the list of contributing members that I acknowledged above, there are plenty of niches where your efforts would help (for a complete list of regular Section opportunities, see our 'About the ELHS' page and links on our website, www.ncsu.edu/elhs). Contact me or President Elect Jon Hare, or any of our contributing members to let us know that you are willing and eager to serve. §

Editor's Ramblings



Honored Colleagues

How wonderful it is to honor the careers of Darrel Snyder and Bill Richards in the same issue of *STAGES*. These guys are workhorses. Each has provided us with decades of important contributions.

Darrel conceived of the Early Life History Section and shepherded it through all the hurdles of establishment and beyond. He has a strong body of scholarly contributions to the identification of freshwater larval fishes. Kevin Bestgen nicely summarized his achievements at the Larval Fish Laboratory of Colorado State University in the cover story of this newsletter, and of course, there is so much more.

One look at Bill's photo on page 6 gives you a sense of the magnitude of his contributions, but not the whole story. Bill has been at the center of marine larval fish taxonomy for decades. The tribute to Bill's career written by John Lamkin and Jeff Govoni (page 6) covers so many of Bill's achievements. But, they missed one that was very important to me, in particular, when I served as ELHS Publications Editor in the 1990s, so I added it to the "ELHS Back Then" section on the cover. Thanks Bill!

Working on fish larvae from different environments, where the morphology and taxonomic characters can be very different, both of these researchers contributed an enormous amount of new information about larval fishes. Their field of taxonomy may seem to some to be out of the mainstream, but there was a time when taxonomy was a primary focus of larval fish research. It is because of contributions from Darrel and Bill (and others) that we have been able to move into the great variety of research areas we work on today. §

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, go to <https://www.larvalfishcon.org/ELHSAffiliate/affiliate-triage.asp> or mail your name, institutional affiliation (if appropriate), mailing address, telephone and fax numbers, e-mail address, and dues (US \$15 per year) for the current and/or upcoming year(s) to the ELHS Treasurer (see page 2).

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

Remember to check the mailing label for your membership expiration date and renew, if necessary.

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