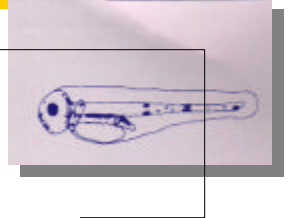


Volume 24,
No. 1, 2003



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Upcoming Events

27th Annual Larval Fish Conference. Santa Cruz Aug 20-23, 2003

AFS 133rd Annual, Aug. 10-14, 2003, Quebec City, bfritz@fisheries.org

Third Otolith Symposium, Townville, Australia. July 11-16, 2004 See p. 6

Rolling Up Our Sleeves - Well, the duties of the president have begun in earnest. Each month, I have participated in a conference call of the Management Committee of the Executive Board of the American Fisheries Society. The new Executive Committee has had two primary goals: incorporating member's ideas in the governing of the Society, and recognizing Society members. Several awards have been established or re-emphasized and the Awards Committee has been active in its pursuit of identifying and recognizing excellence. The Society is also preparing a members survey to be professionally administered sometime in the next year. Members views on a variety of topics will be solicited and incorporated into the future strategic plan of the Society. I recently returned from the Mid-Year Executive board meeting and would like to report that the Society is in better shape financially than it has been in years. A streamlining of staff, as well as a resurgence in membership and Society products has led to budget surpluses in recent years. This should improve member services and will lead to expanded programs. Congratulations to Gus Rassam and the staff of the central office for all of their hard work.

Also at the Mid-Year, the Board approved the formation and advancement of a Fisheries Foundation. The Foundation will exist in a parallel structure to AFS and will be able to raise money for special projects that the Society members would like to execute. In structure and function, the Foundation will be directed to conduct unbiased, science-based outreach and education. Watch for more details in future issues of *Stages* and *Fisheries*.

In other section news, Plans for this year's Larval Fish Conference are coming along well. The meeting promises to be one of the best. Plans are in development for some continuing education activities in conjunction with the meeting that are sure to peak the interests of every Section member. Make your reservations early. This helps meeting organizers finalize plans and saves them ulcers. We'll see you in Santa Cruz..

Jeff Isley

The Masthead

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President's Message (con'd)

About the *AFS-ELHS EARLY LIFE HISTORY OF FISHES BIBLIOGRAPHY*

UPDATE VERSION 2.0

A BIBLIOGRAPHY OF THE EARLY LIFE HISTORY OF FISHES :VOLUME 1, LIST OF TITLES Compiled, edited, and published (1988, copyright) by Robert D. Hoyt, Department of Biology, Western Kentucky University, Bowling Green, KY, Up-dated November 2002 by Tom Kennedy, Aquatic Biology, University of Alabama, Tuscaloosa, AL 35478-0206

And Darrel E. Snyder, Larval Fish laboratory, Colorado State University, Fort Collins, Colorado 80523-1474

Preface

Dr. Hoyt granted the American Fisheries Society Early Life History Section permission to prepare, update, and distribute his 13,717-record bibliography (comprehensive for literature through 1987, but out-of-print as a personal computer file or searchable resource on the internet so long as the file is made available to

all interested parties and neither it nor printed versions of it are sold for profit. Because of computer search capabilities, it was deemed unnecessary to provide a computer text version of Dr. Hoyt's subject, scientific name, common name, family name, and location indices (Volume II). As chairman of the Section's bibliography committee, I prepared and partially edited version 1.0 of this file from Dr. Hoyt's original VAX computer tapes and made it available in 1994 for download and use as a searchable resource on the internet. Dr. Julian Humphries (then at Cornell University) and Dr. Peter Brueggeman (Scripps Institution of Oceanography Library) prepared and posted the gopher-searchable and web-searchable versions, respectively.

The file has now been further edited for duplicate records and errors by Tom Kennedy and myself and partially updated by Tom Kennedy. For the update, Tom incorporated a file of records through 1997 provided by George W. Boehlert (NMFS Southwest Fisheries Science Center, 1352 Lighthouse Avenue, Pacific Grove, California 93950-2097), perused over 25 academic and governmental web sites, and used *Current Contents* software for published literature from 1999 to 5 August 2002. I also added a few dozen records. The bibliography now includes 15,596 records from 1842 through to July 2002. Many references are yet to be identified and added to the bibliography for the period of 1988 through 1997 and especially the year 1998. Users of the bibliography, AFS Early Life History Section members, and anyone else having published in the field are encouraged to submit additional corrections and bibliographic records to me for future updates. Please compare records herein with your own bibliographic files and personal publication lists (including "grey" literature and agency final reports). Bibliographic format generally follows American Fisheries Society guidelines except that standard journal abbreviations are acceptable. Your contributions will be duly acknowledged. If anyone is interested in becoming more involved with the bibliography, much as Tom Kennedy did for this update, I am willing to share or transfer responsibility for maintaining and updating the bibliography for the AFS Early Life History Section.

Darrel E. Snyder

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Search Online via WWW.

An online searchable version of the bibliography was prepared by Peter Brueggeman of the Scripps Institution of Oceanography Library and is located at url < <http://scilib.ucsd.edu/sio/indexes/hoyt.html> >. It is full-text indexed (WAIS) and thereby searchable on every word, including author, publication year, and journal (as abbreviated in original bibliography). Search terms are single words, case-insensitive (either lower or upper case characters may be used), and may be combined using Boolean search parameters—restrict searches with "and" and "not" (without the quotes) between

keywords and broaden searches with "or" between keywords; "or" is the default operator for multiple keyword queries without specified operators between words. The user can elect to have results returned as an abbreviated list of records (single line per entry with full records revealed one at a time as selected by the user) or a list of full-text records which is convenient for printing the entire set. The *AFS Early Life History Section* web page, < <http://www2.ncsu.edu/elhs/>>, provides a link to the site under the subpage *Other ELH Links* (it also provides a link to the older gopher-server version prepared by Dr. Julian Humphries for the *Biodiversity and Biological Collections* site < <http://biodiversity.uno.edu/> >).

Order or Download as an ASCII (DOS text) File.

As a ZIP-compressed ASCII file, the bibliography requires about 1.0 Mb and fits on a single floppy diskette. Uncompressed, the ASCII file (elhbib20.txt) requires about 2.7 Mb of space and can be used on other computer platforms (e. g., Macintosh, UNIX). It can be uploaded by word processors that can handle large files. Word processor search and replace features can easily eliminate the ASCII hard returns at the end of each line (replace double hard returns with a unique symbol such as a double asterisk (**)) and single hard returns with a space, then return the special symbol (e.g., **) back to double hard returns to separate each record). The file can be easily searched via word processors or it can be parsed into delimited fields, saved back to ASCII format, and imported by database programs. Text intended for italics is enclosed in brackets. To order the zip-compressed file on diskette, visit the web page of the AFS-Computer User Section at < <http://www.fisheries.org/cus/> > (select *current software listing*) or contact one of their offices (cost for diskette, shipping, and handling is US\$10); or download the file without charge from the same site. The file also can be downloaded over the internet from the Larval Fish Laboratory by either of two FTP (File Transfer Protocol) procedures:

(1) Using your web browser, open "<ftp://ftp.cnr.colostate.edu/pub/fishbib/>" and select "elhbib20.zip" for download; also select and download the self-extracting file "pkz204.exe" if you don't have pkunzip.exe version 2.04 or later to decompress (unzip) the former file.

(2) Using a stand-alone FTP utility on a computer connected to the Internet— (a) Enter the ftp command mode and open to "<ftp.cnr.colostate.edu>" (without the quotation marks; to do both simultaneously from dos enter "ftp ftp.cnr.colostate.edu"); (b) When asked for user name, enter "anonymous"; (c) When asked for password enter your identity (e.g., e-mail address) ; (d) Change host subdirectory by entering "cd pub/fishbib"; (e) Enter "binary" (for transfer of binary rather than text files); and (f) Enter "get ELHBIB20.zip" (also "get pkz204.exe" if needed); (g) Quit FTP and unzip elhbib.zip (result should be the ASCII file elhbib.txt).

Submitted 3/1/03 by: Darrel E. Snyder

**Don Hoss. Past President of
ELHS retires**

By Jeff Govoni

Donald Earl Hoss entered Federal service at the Radioecology Laboratory of the Atomic Energy Commission (AEC) at Beaufort, August, 1958; he retired 44 years later from the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Center for Coastal Fisheries and Habitat Research at Beaufort, 30 November 2002. With his years of Federal Service, all spent at Beaufort, Don Hoss saw the Beaufort Laboratory, as it is now well known, through numerous re-organizations and administrative agency changes — the separate Radioecology Laboratory and Bureau of Commercial Fisheries Laboratory (BCF) under the Department of Interior, the amalgamation of these entities as the Beaufort Laboratory under the NOAA's National Marine Fisheries Service (NMFS), and most recently the Center for Coastal Fisheries and Habitat Research at Beaufort under the National Ocean Service. Don Hoss began as an entry level, Fisheries Biologist, with a BS in Wildlife and Fisheries from the Department of Agriculture of the University of Missouri. Dr. Don Hoss retired as Center Director.

Don served the Beaufort Laboratory as both an administrator and a researcher. Administratively, he organized and led the Environmental Effects Branch, which would later, under different leaders, become the Fish Ecology Team, and now the Fisheries Oceanography and Ecology Team; he led, as Chief, the Resource Ecology Division; and finally stepped up as Acting Laboratory Director, then full Center Director. As a researcher, he authored or co-authored 73 scientific papers, many published in top shelf, peer reviewed journals.

Federal service at Beaufort was good to Don Hoss. He met his wife of now 42 years, Caroline Reusch Hoss, there while she served the Beaufort Laboratory as a biological technician. He took a MS and a Ph.D. in Zoology from North Carolina State University, while working in Federal Service. A long term association with John H.S. Blaxter, the principal, yet quiet intellectual mentor of Don's, led Don to a year-long detail to the Scottish Marine Biological Association Laboratory in Oban Scotland, 1976-1977, followed by several short return sojourns there, in 1980 and 1983, again while in Federal Service.

Don relished foreign travel, and managed to pull it off in spite of a succession of Executive Branch Administrations that made travel abroad ever more restricted for Federal employees. Significant time was also spent on trips to France, Poland, and Japan. All the while, he built the international reputation of the Beaufort Laboratory.

As young people came on board to fill positions in the ever evolving Beaufort Laboratory, Don Hoss' refrain became "I'm older than dirt", a moniker well suited for his formative years on a Missouri farm. Yet, Don loved to go to sea, and he instigated a program of seagoing research on the early life history of fishes at Beaufort. While at sea, his fluctuating alter ego had him fantasizing either the role of the Lord Nelson or the Edward Teach of fisheries oceanography. Never, ever suffering *mal de mer*, Don was away from telephones, away from email, and away from reality, when at sea. Being at sea constituted the simple life for Don — wake up, stand a watch, go to sleep (read) — and he cherished it.

Don was a physiological ecologist at heart, one who was bent upon the study how animals work in the wild, or under simulated field conditions. He acquired an early fascination with tiny bubbles (products of a variety of physiological processes, and of various life forms, from yeasts to fishes).

This fascination, while not pursued in recreation (i.e. imbibing the products of fermentation), led Don through work on the physiological energetics of larval and juvenile fishes (measuring the volume displacement of tiny oxygen bubbles in a Gilson Respirometer), to swimbladder and inner ear (otic bulla) physiology (again measuring tiny gas bubbles manometrically).

Perhaps one of Don Hoss' lasting legacies is the spawning and larval fish rearing operation at Beaufort. Don conceived this operation, found the necessary support for it, and sustained it through twenty years. The products of this operation served researchers both within and outside of the Beaufort Laboratory, and fostered collaboration with countless academicians, who came to the lab on sabbatical or shorter research projects.

Don Hoss served as President-Elect of the Early Life History Section from 1990 to 1992 and as President from 1992 to 1994. During that tenure he hosted the first Annual Larval Fish Conference at Beaufort (1990) and committed the Beaufort Laboratory to hosting another (in 1999). He served

the Section well, and contributed a lot of his efforts to this group. His last act as an "un-retired" scientist in the organization is pictured here, and I am sure it will not be the last we see of him!



Otolith Microstructure Manual now available online

From Dave Secor, Chesapeake Biological Laboratory, Univ. MD Center for Environmental Science:

Over ten years ago, John Dean (Univ. South Carolina), Betsy Laban (NMFS/NOS Beaufort Laboratory) and I published a manual on how to prepare otoliths for micro-structural analysis. To our surprise the manual remains in some demand, particularly among graduate students and international scientists (it has been out of print for many years). In addition to work on early life history applications, we have found the manual a useful starting point for preparation of otoliths and other hard parts of adult fishes. I have obtained copy write permission from the original publishers (Belle W. Baruch Institute, USC Press, and EPRI), and have made the manual available on a chapter-by-chapter bases in Adobe *.pdf format.

Please note that we've made several recent improvements, including a shift to geological slides (rather than histological ones) and Minimet thin section slide holder to facilitate polishing. These items, and an updated list of source materials and vendors can be viewed as an addendum to the List of Supplies/Suppliers.

The URL is now posted on the Early Life History Section's Homepage:

<http://www2.ncsu.edu/elhs/> or can be directly accessed at:

<http://cbl.umces.edu/~secor/otolith-manual.html>

David H. Secor, Ph.D.
Associate Professor

Chesapeake Biological Laboratory, PO Box 38,
Solomons, MD 20688

<http://www.cbl.umces.edu/~secor>; 410-326-7229

Northeastern Research and news

Tom “Motz” Grothues reporting

Announcement:

Third International Symposium on Fish Otolith Research and Application

The International Scientific Committee invites you to the Third International Symposium on Fish Otolith Research and Application to be held **July 11-16 2004, at Jupiters Hotel & Casino, Townsville, Queensland, Australia.**

The Symposium will bring together leading scientists from around the world to discuss state-of-the-art approaches and future directions in the important area of otolith research and application. Topics to be covered include:

- otolith structure and function
- chemistry and composition
- age and growth estimation and validation
- age determination in deep sea and tropical environments
- application to climate, ecology and population biology
- technological developments
- statistics and modeling of otolith-based information
- quality control in ageing facilities and data processing
- application of otolith-based data in stock assessment and fisheries management

As well, there will be hands-on clinics and workshops dealing with several aspects of otolith preparation and examination

Townsville is the major centre of northern Queensland with easy access to the Great Barrier Reef World Heritage Area and surrounding natural tropical wonders including reefs, beaches, islands, rainforests and outback attractions. We invite you to share all of this and much more as part of the **Third International Otolith Symposium in Townsville, Australia.**

All information concerning the Symposium, including registration and abstract submission, is available

at www.Otolith2004.com. E-mail enquiries may be made to Otolith2004@ozaccom.com.au

International Scientific Committee:

A. Andrews (USA), T. Arai (Japan), G. Begg (Australia), S. Campana (Canada), J. Casselman (Canada), A. Fowler (Australia), A. Geffen (UK), B. Gillanders (Australia), C. Grimes (USA), M. Kingsford (Australia), K. Limburg (USA), G. Marteinsdottir (Iceland), M. Meekan (Australia), E. Moksness (Norway), B. Morales-Nin (Spain), H. Mosegaard (Denmark), J. Panfili (France), M. Smale (South Africa), I. Suthers (Australia), R. Thresher (Australia), D. Tracey (New Zealand), W.-N. Tzeng (Taiwan), H. Wickström (Sweden), P. Wright (UK).

Grace Klein-MacPhee, active ELHS colleague and contributor, voted President – elect , Southern New England chapter of AFS

Grace Klein-MacPhee, Graduate School of Oceanography, University of Rhode Island, was elected Secretary/Treasurer of the Southern New England Chapter of AFS and is moving up the ranks toward the presidency of the England Chapter of AFS. She is currently President -elect. She also received the **Distinguished Naturalist Award** from the Rhode Island Natural History Survey in 2002. Her current research projects include an ichthyoplankton survey in Narragansett Bay funded by US Fish and Wildlife, working in conjunction with Rhode Island DEM Marine Fisheries with the goal of monitoring seasonal occurrence, species composition and possible changes that have occurred in the Bay since earlier surveys in the 1970's and 1990's. One of the interesting changes

Grace is also working with Dr. Barbara Sullivan on effects of the ctenophore *Mnemiopsis leidyi* on fish eggs and larvae. Information is being gathered from the ichthyoplankton collections from a Sea Grant sponsored project, and from an NSF funded project which is analyzing the abundance and seasonal distribution of the ctenophore. Co-investigators on this project are Barbara Sullivan, Dian Gifford, and Jack Costello from Providence College.

Grace has also been working with William K. Macy on the design of egg chambers for exposing winter flounder in the field to suspended solid from dredging. The Providence River ship channel is due to be dredged in the Spring of 2003 and this event will take 18 months to complete. Flounder eggs will be exposed at varying distances from the dredge plume in the incubation chambers and survival and hatchability monitored. The work will be done in conjunction with the Army Corps of Engineers and the U.S. EPA. Funding was obtained to develop the chambers from the Rhode Island Governors Office.

Graduate student Angela Allen has been quantifying predation rates of *Mnemiopsis leidyi* on various fish eggs and larvae in the laboratory. Species of interest are black sea bass, bay anchovy, and tautog. She has also been examining fresh gut contents of field -collected ctenophores at sea, because the ctenophores do not preserve well.

David Taylor, a graduate student of Jeremy Collie, has been examining the effects of the sand shrimp *Crangon septimspinosa* on newly settled winter flounder larvae in the field and in the laboratory. Field studies have involved using the Ouchterlony double-diffusion immunoassay to examine the stomach contents of the *Crangon* and other possible invertebrate predators. He is looking at latitudinal variation in predation rates of *Crangon*, and the effects of temperature on predation strategies of *Crangon*. David won the Saul B. Saila best student paper award twice for presentations on his research at the Southern New England Chapter AFS summer and winter meetings in 2002.

Southeastern Region

Tom Lankford reporting

Early Life History Studies as Part of Open Ocean Exploration of Unique Habitats off North Carolina

A.M. Necaize, T.L. Casazza, S.W. Ross and K.J. Sulak

As part of an ongoing trophodynamics study, the North Carolina National Estuarine Research Reserve (S.W. Ross, Lead P.I.) and the U.S. Geological Survey (K.J. Sulak, Co-P.I.) have been exploring three unique habitats off the North Carolina coast. The research focuses on the entire water column, collecting fishes at specific depths and determining diel migrations and feeding relationships. Five research cruises spanning four years utilized a variety of gear, including tucker trawls, otter trawls, neuston nets and submersibles, to collect fishes. The three habitats are each important for different reasons. "The Point" off Cape Hatteras is characterized by the convergence of three major currents. The particulate sedimentation rate is an order of magnitude higher than in adjacent areas. Benthic fishes are up to seven times more dense than in nearby habitats. Additionally, fishes are consistently smaller in size and more sedentary than the same species found in other areas. The deep-water *Lophelia* coral banks off Cape Lookout are located at depths of 350-400 m. It has only recently been discovered, through the use of submersibles, that they serve as important habitat for many fishes. The Outer Shelf hardbottom banks off North Carolina have become a focus of study due to the commercially and recreationally valuable fisheries they support.

In each area, larval and juvenile fishes are a large component of collections. A wide range of species and life history traits are represented, providing insight into spawning periodicity and locations, community structure and recruitment of juveniles to NC habitats. In addition to resident species, unique and uncommon fishes entrained in the Gulf Stream have also been collected. The dynamic *Sargassum* community provides an important nursery area for larval and juvenile fishes at each of these locations. Individuals collected in

Sargassum-associated stations are five times more abundant than individuals collected in open water Stations. These include commercially important dolphin, jacks, and tuna that utilize this habitat.

Work continues in each of these areas and new locations are being considered for future research. New records for larval, juvenile and adult fishes have been documented as a result of this project and trophic relationships have been established for the slope communities. Future work will build on this base of knowledge and provide greater insight into the community structure in these habitats.

Contribution to Southern Region happenings for STAGES:

Byline: Beaufort investigators continue research on the Charleston Gyre as spawning and nursery habitat for fishes

The Charleston Gyre is a series of meso-scale, cyclonic eddies that spin up in the wake of the eastward deflection of the Gulf Stream at the Charleston Bump, a topographic rise on the edge of the shelf break off Charleston, South Carolina. The cyclonic circulation of the Gyre induces upwelling within its core and injects high nutrient water to near surface. This upwelling of nutrients drives enhanced primary production, which in turn drives enhanced secondary production, with perhaps enhanced feeding environments, i.e., prey fields, for larval fishes. Also, the cyclonic circulation around the eddy may constitute a retention mechanism for fish eggs and larvae that may otherwise be entrained into the Gulf Stream, transported rapidly northward, and ultimately lost from local populations.

With a series of four cruises in the winters of 1998, 1999, 2000, and 2001, the Center for Coastal Fisheries and Habitat Research (CCFHR — now under the National Ocean

Service, but formerly the Beaufort Laboratory of the National Marine Fisheries Service), has attempted to describe the Charleston Gyre as spawning and nursery habitat, by documenting habitat utilization. On a cruise in January and February 2003, CCFHR released satellite-tracked, and GPS-radio beacons into the core of an eddy that constituted the Charleston Gyre, and followed the eddies as they propagated northeastward. Ichthyo- and zooplankton collections about the radio-beaconed drifter were taken, along with hydrographic data. The results of this cruise should better assess the Charleston Gyre as a retention mechanism.
(Jeff Govoni; (252) 728-8727.

Western Region

Dan Margulies reporting

Achotines Laboratory, Los Santos Province, Republic of Panama: A Research Laboratory Operated by the Inter-American Tropical Tuna Commission (IATTC) (headquartered in La Jolla, CA)

The IATTC operates its Achotines Laboratory on the southern tip of the Azuero Peninsula on the Pacific coast of the Republic of Panama. Research at the Laboratory centers on studies of tuna biology, particularly the early life history of tunas, but some studies are also conducted on other marine fishes. The early life history research group of IATTC consists of three scientists based at IATTC headquarters in La Jolla, California (Dan Margulies, Jeanne Wexler, and Sharon Hunt), and one scientist in residence at the Achotines Laboratory.
Vern Scholey).

The research program is conducted in the Panama Bight and involves laboratory and field studies designed to gain insight into the recruitment process of scombrids. During the period 1988-1996, field surveys and laboratory experiments were conducted to investigate aspects

tunas *Auxis* spp., and sierra *Scomberomorus sierra*.

Since 1996, research at the Achotines Laboratory has focused on the captive spawning and early life history of yellowfin tuna, *Thunnus albacares*. The yellowfin research was initiated through a joint project among the IATTC, the Overseas Fishery Cooperation Foundation (OFCF) of Japan, and the government of Panama. The joint project ended in 2001, but the IATTC has continued the yellowfin research as the main focus of studies at the Laboratory.

Yellowfin tuna have been spawning nearly daily in a large (17-m diameter, 6-m depth) concrete tank at the Laboratory since October 1996. The spawning by these fish represents the first occurrence worldwide of sustained spawning by yellowfin in landbased facilities. A manuscript describing the captive spawning and early development of yellowfin (Margulies *et al.*) is in review. The larvae hatched from eggs spawned by the broodstock have been used in laboratory experiments investigating the effects of micro-turbulence, food type and density, light, and larval density on the feeding success, growth, and survival of larvae and early juveniles. Yellowfin have been reared up to 100 days after hatching in the laboratory. Several manuscripts summarizing the laboratory studies are being prepared by the IATTC early life history research group.

Several genetic studies have been conducted on the yellowfin broodstock and their eggs and larvae and the results were recently published. This research was conducted jointly by Yuki Niwa, OFCF of Japan, Seinen Chow, National Research Institute of Far Seas Fisheries, Shimizu, Japan, and the IATTC early life history group. Mitochondrial DNA genotypes of the broodstock were compared with those of their offspring in order to monitor spawning frequency and periodicity. The broodstock and hatched larvae were also tested for Mendelian inheritance of nuclear DNA variants by EPIC-PCR analysis. This study provided the first direct evidence for Mendelian inheritance of nuclear DNA variations in a highly mobile, large pelagic

fish species.

Studies of the spectral sensitivity and development of vision in yellowfin are ongoing. The research is being conducted by Ellis Loew, Cornell University, Bill McFarland, University of Washington, and Dan Margulies. An investigation of developmental changes in the visual pigments of yellowfin was recently completed and the results published. During 2003, studies will continue to characterize the spectral sensitivity of early stages of yellowfin and to describe the visual basis for feeding behaviors in larval and juvenile yellowfin.

The facilities of the Achotines Laboratory are also being used in a joint study involving Daniel Benetti, University of Miami Aquaculture Program, and the IATTC early life history group. The project involves a feasibility study of the capture, transport and culture of Indo-Pacific sailfish, *Istiophorus platypterus*, at the Laboratory. During 2002, experiments were also conducted to determine the effects of antibiotics and probiotics on the survival of yellowfin eggs and larvae. The joint study is being funded by the University of Miami's Center for Sustainable Fisheries.

Some non-scombrid research has been conducted at the Achotines Laboratory as well. Studies of the early life history and mariculture potential of spotted rose snapper, *Lutjanus guttatus*, have been carried out by Amado Cano, Recursos Marinos de Panama, since 1996. Broodstock snappers spawn intermittently year-round, providing eggs and larvae for experiments and culture trials. During 2002 the life cycle of spotted rose snapper was successfully completed in captivity at the Laboratory.

Research at the Achotines Laboratory will continue to center on the spawning, early life history, genetics and physiology of tunas, particularly yellowfin tuna. Additional information regarding current activities at the Laboratory is available at the IATTC website, www.iattc.org (click on Achotines Laboratory).

Recent Publications :

Wexler, J.B., V.P. Scholey, R.J. Olson, D. Margulies, A. Nakazawa, and J.M. Suter. *In press*. Tank culture of yellowfin tuna, *Thunnus albacares*: developing a spawning

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 Loew, E., W.N. McFarland, and D. Margulies. 2002. Developmental changes in the visual pigments of the yellowfin tuna, *Thunnus albacares*. Mar. Fresh. Behav. Physiol. 35: 235-246.
 Scholey, V.P., D. Margulies, R. Olson, J. Wexler, J. Suter, and S. Hunt. 2001. Lab culture and reproduction of yellowfin tuna in Panama. Global Aquaculture Advocate 4(2): 17-18.
 Margulies, D., J.B. Wexler, K.T. Bentler, J.M. Suter, S. Masuma, N. Tezuka, K. Teruya, M. Oka, M. Kanematsu, and H. Nikaido. 2001. Food selection of yellowfin tuna, *Thunnus albacares*, larvae reared in the laboratory. Inter-Am. Trop. Tuna Comm., Bull. 22: 9-51.
 Wexler, J.B., D. Margulies, S. Masuma, N. Tezuka, K. Teruya, M. Oka, M. Kanematsu, and H. Nikaido. 2001. Age validation and growth of yellowfin tuna, *Thunnus albacares*, larvae reared in the laboratory. Inter. Am. Trop. Tuna Comm., Bull. 22: 52-91.
 Chow, S., V.P. Scholey, A. Nakazawa, D. Margulies, J.B. Wexler, R.J. Olson, and K. Hazama. 2001. Direct evidence for Mendelian inheritance of the variations in the ribosomal protein gene introns in yellowfin tuna (*Thunnus albacares*). Mar. Biotechnol. 3: 22-26.

Submitted by:

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**ELHS Santa Cruz Conference =
 27th alfc Aug 20-23
 See Details Below**

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Program Chair:

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Cheryl Kaine—Cheryl.Kaine@noaa.gov

Cheryl reports that the conference web site, set up by Howard Browman (thanks Howard!): www.lfc2003.com is up and running. All the dates and figures are set, and on-line registration and abstract submissions began last week.

I m p o r t a n t d a t e s :

Monday, March 31: Last day for regular registration (f e e s g o u p A p r i l 1!)

Monday, March 31: Last day to submit abstracts

Tuesday, April 1: Late registration starts (=higher registration fees!)

Monday, April 7: Application deadline for Student Travel Grants

The plenary speaker this year will be **Ed Houde**, University of Maryland.

Broad interest theme sessions will include:

- Understanding dispersal, settlement, and recruitment: genetics, otoliths, physical processes, and applications.
- Trade-offs and compromises in growth processes of early life history stages
- Maternal effects on offspring performance: What does Mom have to say?
- Marine stock enhancement
- Early life history of fishes in the San Francisco estuary and watershed

Possibility: larval id workshop before conference

Thanks for the update, Cheryl!

Howard Browman reports that book from 26th alfc well underway.

As of 10 February 2003, 32 manuscripts have been accepted for publication in the LFC2002 proceedings book. The preliminary table of contents for the book has been posted (<http://www.fishlarvae.com>) Thanks to all of the authors who chose to submit their work for publication; this will be a very useful monograph. Sincerely, Howard
howard.browman@imr.no

New ELHS member receives MSc on larval fish from East North Carolina University.

Katy Marancik has just joined our elhs section, and recently presented a paper based on her Master's thesis at the Flatfish Symposium, Nov. 3-7, 2003, Port Erin Marine Laboratory, Isle of Man. An abstract of her paper is presented below. Congratulations, Katy!

Linking larval distributions with juvenile settlement patterns of flatfish on the Georgia shelf

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Transport mechanisms influencing supply of larvae to nursery habitats are an important element in the population and community dynamics of flatfish. Unfortunately, little is known about the distribution and settlement patterns of larval flatfish on the southeastern United States continental shelf. Larval

and juvenile fish were collected on a 110 km cross-shelf transect of the Georgia Shelf, USA. Samples were taken approximately quarterly from April 2000 – February 2002 at 10 stations. Ichthyoplankton was collected using oblique tows of a 60 cm bongo net. Juveniles were collected at the same time with a 2 m beam trawl. Temperature, salinity, and depth measurements were taken at each station. Larval flatfish were separated from the Ichthyoplankton collections and used to generate a list of species spawning in the area. The smallest juvenile flatfish collected from beam trawl collections were used to determine settlement size and location. The most abundant larval taxa collected are *Etropus crossotus*, *Etropus* spp., *Symphurus* spp., *Bothus ocellatus/robinsi*, and *Citharichthys* spp.. Juvenile collections consist of 20 taxa of flatfish; the most abundant are *Etropus* spp., *Symphurus minor*, *Bothus* spp., and *Citharichthys* spp. Larval distribution was compared to juvenile distribution to infer the general larval transport pathways, and these general pathways are considered in the context of physical oceanographic data collected simultaneously (CTD, current, wind, SST). These data show that larvae from the same part of the shelf are being transported in at least three different directions (inshore, offshore, and no cross-shelf movement) at the same time. Therefore, a simple passive horizontal transport model cannot explain the patterns observed. Further research into larval transport on the shelf will lead to a clearer understanding of how some shelf spawned flatfish species recruit to estuaries (*Etropus crossotus* and *Symphurus plagiusa*), while others recruit to shelf habitats (*Symphurus minor*, *Bothus* spp., and *Etropus* spp.).

Please submit reports or articles on elhs matters to our readers! This is important to maintain interest in our section. Submit these articles or notes (they do not have to be long articles) to your regional reps or to me. Thanks—Ed

