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## *American Institute of Fishery Research Biologists*

*Promoting excellence in fishery science*

### **... BRIEFS ...**

VOL. 38, NO. 5

SEPTEMBER-OCTOBER 2009

## **President's Message**

Feynman wrote that honesty in science is telling intelligent people what they need to know to make intelligent decisions. A problem in fisheries science is that there are a lot of things that we do not understand. Communicating uncertainty to the general public is difficult, particularly in an age of branding. In British Columbia this year we had the poorest return of sockeye salmon to the Fraser river in recorded history. Within weeks, we had what may be the best return of pink salmon in recorded history. British Columbians care about Pacific salmon and these returns are a topic of discussion everywhere I go. The relevance to AIFRB is the need to communicate what we know and do not know about these kinds of issues to a concerned public. I think that AIFRB is well positioned to do this and our Board is working to find ways that our members can tell people what they need to know to make intelligent decisions.

Dick Beamish

## **W.F. Thompson Award For Best Student Paper Published In 2007**

**Shannon K. Brewer**

Dr. Shannon K. Brewer, a recent graduate of the University of Missouri-Columbia, has won the W.F. Thompson Award for the best student paper published in 2007. Her paper, co-authored with Charles F. Rabeni, Scott P. Sowa, and Gust Annis, is entitled "Natural Landscape and Stream Segment Attributes Influencing the Distribution and Relative Abundance of Riverine Smallmouth Bass in Missouri," was published in the *Journal of Fisheries Management* of the American Fisheries Society, Volume 27, Number 1, pages 326-341. One of the reviewers of the paper wrote, "It is a great example of applying multiple scale habitat analysis to aquatic systems using the latest statistical techniques. The authors did a great job with evaluation of model accuracy. I especially like the presentation of a conceptual model explaining the results and the recommendations for future work assessing land use effects on smallmouth bass distribution."

A total of 13 papers were submitted for consideration for this award, and 17 scientists reviewed one or more these. Most of the papers were reviewed by three to five people. All of the submissions were high-quality papers published in prestigious journals, and most of them were praised by the reviewers.

Shannon Brewer received her B.S. degree in Biology at Missouri Western University in St. Joseph in 2001 and her M.S. degree in Fisheries and Wildlife Sciences at the University of Missouri-Columbia in 2004. She completed a Ph.D. in Fisheries and Wildlife Sciences at the University of Missouri in 2008. Her major professor was Dr. Charles F. Rabeni. In addition to the paper that won the award, Shannon has several papers related to smallmouth bass ecology in various stages of preparation. She has also authored several other papers published in quality journals, including *Ecology of Freshwater Fish*, *Hydrobiologia*, and *Transactions of the American Fisheries Society*. She currently works for the U.S. Fish and Wildlife Service as a fish biologist on the San Joaquin River Restoration Program, California. Her interests include fishing, hiking, and camping.

*Prepared and submitted by William Bayliff*

# First Announcement: Alverson, NPAFC Ourstanding Achievement Awardees, 2010

Dr. Dayton L. Alverson  
Natural Resources Consultants, Inc.  
4039 21<sup>st</sup> Ave West – Suite 404  
Seattle WA 98199

Dear Lee,

All of us in American Institute of Fishery Research Biologists (AIFRB) are most pleased that you are receiving our Outstanding Individual Achievement Award for 2010. Your name and your contributions are so well known all over the world that you are a standard for measuring excellence in our profession. The criteria we use to select our recipient include significant publications, exceptional service to the profession, outstanding teaching and significant contributions to the advancement of fisheries science. I would add that I have always been impressed with your curiosity and passion for a wide range of issues in fisheries. I look forward to reading your new book which I am taking with me to the NPAFC meeting in Japan in a few weeks.

Congratulations,  
Dick Beamish  
President, AIFRB

Vladimir Federenko, Executive Director  
North Pacific Anadromous Fish Commission  
Suite 502 – 889 Pender Street  
Vancouver BC V6C 3B2

Dear Valdimir,

It is my pleasure to inform you that the North Pacific Anadromous Fish Commission (NPAFC) has been unanimously selected to receive the American Institute of Fishery Research Biologists (AIFRB) Outstanding Group Achievement Award for 2010. A number of years ago we recognized the old INPFC organization, but the NPAFC is new and deserves to be recognized for its own achievements. NPAFC provides the focus for Pacific salmon research. Researchers now work as a team and are a model for international research. You and your staff are highly respected by all Pacific salmon producing countries.

Congratulations,  
Dick Beamish  
President, AIFRB

*More on Alverson and NPAFC in a future issue. Ed*



*Ruby and Lee Alverson with plaque symbolizing outstanding Achievement Award for 2010.*

## Fellow Megrey given AFS Award

Dr. Bernard Megrey of NOAA's Alaska Fishery Science Center's Recruitment Processes Program and his coauthors were recently recognized by the American Fisheries Society for the best paper published in 2008 by the Transactions of the American Fisheries Society:

Rose, K.A., Megrey, B.A., Hay, D., Werner, F., Ware, D.M. and Schweigert, J. (2008). Climate regime effects on Pacific herring growth using coupled nutrient-phytoplankton-zooplankton and bioenergetics models. Transactions of the American Fisheries Society 137:278-297.

The authors built upon an international cooperation established through PICES (North Pacific Marine Science Organization) to build and use coupled biophysical models to better understand and predict production variability in fisheries.

*By Jeff Napp*



*Bern Megrey. Photo by Karna McKinney*

# Nominations Needed!

## W.F. Thompson Award for Best Student Paper Published in 2008

Nominations are open for the W.F. Thompson Award, which is given by the American Institute of Fishery Research Biologists (AIFRB) to recognize the “best” student paper in fisheries science published during the year in question. The award will consist of a check for \$1000.00. The requirements for eligibility are as follows: (1) the paper must be based on research performed while the student was a candidate for a Bachelor’s, Master’s, or Ph.D. degree at a college or university in the Western Hemisphere; (2) the paper must be in English; (3) the student must be the senior author of the paper. Nominations may be submitted by professors or other mentors, associates of the students, or by the students themselves. The deadline for receipt of nominations is March 1, 2010. The nominations should be sent to the Chairman of the W.F. Thompson Award Committee, Dr. G. Morris Southward, 4155 Sotol Drive, Las Cruces, NM 88011-7642, (e-mail [morlor31@comcast.net](mailto:morlor31@comcast.net)). Each nomination must be accompanied by a copy of the paper (unless it is easily available on the internet) and a résumé. The papers will be judged by knowledgeable reviewers selected by the Chairman and the members of the Committee on the basis of contribution to fisheries science, originality, and presentation.

*Note: Mo Southward is new chairperson offering Bill Bayliff some well earned relief.*

## Strategic Planning Begun

President Beamish, to establish a five year plan for the Institute has appointed a committee of himself, Tom Keegan, Ed Roseman, Doug Vaughan, Steve Cadrin, and Kathy Dickson. In consultation with members they are to plot the future of the organization.



*Board of Control at Nashville, August 2009*

*l-r: Morris Southward, Peter Haaken, Dick Beamish, Doug Vaughan, Tom Keegan, Kathy Dickson, Gary Sakagawa, Allen Shimada, Ed Roseman (ID's according to Dr. Vaughan. ED)*

## A Bargain! Your AIFRB Dues!!

### American Institute of Fishery Research Biologists

2010 MEMBERSHIP YEAR DUES NOTICE  
(SEPTEMBER 1, 2009 - AUGUST 31, 2010)

Dear Colleague:

Please return with annual dues as indicated:

*Professional Associate/Member/Fellow* ..... \$40.

*Student Associate* ..... \$20.

*Emeritus Member/Fellow* ..... \$ 0.

I wish to make a tax-deductible donation:

Founders Fund ..... \$ \_\_\_\_

My email address is \_\_\_\_\_

☐ I wish to receive *Briefs* by email

☐ I do not have access to email

*Please remit in U.S. funds and payable to AIFRB*

*For credit card payment visit [www.aifrb.org](http://www.aifrb.org)*

*Come on Folks: Forty Bucks, that's only a dozen DosEquis' at Arturo's, a local jalapeño and heartburn dispensary.*

# A LOSS

**Dr. Robert Edwards, Falmouth, MA**

**Oct 28 ( approx) 2009**

Bob Edwards began working in Woods Hole in 1955. He was Herb Graham's assistant laboratory director and succeeded Graham as director when he retired in 1970 [Dr. Graham passed away in January of this year at the age of 102]. He was the first NEFSC (then called the NEFC) director serving in that post from 1976 until his retirement in 1981. His career spanned a period in which the U.S. became not only more interested in domestic ocean fisheries, but also an international player in fishery management and science. During this time, beginning in the late 1960s, he was among those who developed the idea of an ecosystems approach to fishery management and championed the concept of managing fisheries across jurisdictional lines (state, federal, and international), according to the distribution and abundance of the stocks. He contributed to the design and formation of the NEFSC trawl survey, the Polish Sorting Center, and two unique international fishery research programs—the 10-year fishery research program between the U.S. and U.S.S.R. on fishery stocks off the Northeast, and the Helgoland undersea habitat project (US, West Germany and Poland).

He was often described as quite brilliant, an original and rigorous thinker and a tough boss, but one who brought out your best work. He was an emeritus trustee of the Boston Ballet owing to his contributions to its founding.

*My remembrances of Bob include the facts that (1) when the eastern bloc countries began operating in the fisheries of the Northwest Atlantic in the late 1950's, he quickly learned to speak Russian and became one of the principal spokesmen during U.S.-Soviet negotiations over fisheries; (2) that he was a knowledgeable collector of American Indian pottery, pursuit in which I gave him small help in North Carolina many decades ago. Ed.*

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## Fellow Dauble Retires

Dennis Dauble: after 35+ years with Pacific Northwest National Laboratory. Home address 3029 Sonoran Drive, Richland, WA 99354

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## Members Author Two Books

### Fishes of the Columbia Basin

Dennis Dauble reports: I had a guidebook, *Fishes of the Columbia Basin*, published by Keokee, Inc. in July 2009 (can be viewed at [KeokeeBooks.com](http://KeokeeBooks.com)) Intended audience is lower division fisheries students or the fisher/naturalist.

*Anyone willing to review the work? Ed.*

### Follow the Coastline (Paperback)

By James E. Sykes (Author) Past President AIFRB

Paperback: 132 pages

Publisher: Xlibris Corporation (February 12, 2008)

Language: English

ISBN-10: 1425793789

ISBN-13: 978-1425793784

Product Dimensions: 8.8 x 5.9 x .04 inches

Shipping Weight: 1.6 ounces

Most Helpful Customer Reviews

4.0 out of 5 stars Enjoyed it and learned something at the same time... May 18, 2008

By C. Swallows "Chase Reader" (Gainesville, FL United States)

This book is a collection of stories about the author's experiences being a marine biologist and administrator with the US Fish and Wildlife Service up and down the east coast and the Gulf of Mexico, including a stint with the North Carolina Coastal Resources Commission.

The stories are interesting, non-scientific accounts of Mr. Sykes' experiences that range from his youth, interaction with an Indian tribe, dealing with recalcitrant personnel, relationship with state staff, to problems with dealing with Washington, D.C. I particularly enjoyed his stories about his unexpectant hilarious encounter with his aunts and case of the big, ugly book. I was ROTFLMAO. (*Ed: Huh?*) Other stories I enjoyed include the incident of the ball point pen and the charm school.

I even learned some things about sexing striped bass that I never knew before reading this book. And now I know what the word "anadromous" means. More importantly, I now have a greater appreciation of the role of marine research efforts and state coastal commissions to us common citizens.

A good, quick read. I enjoyed it.

*From: Amazon.com*



# Review

**EARLY LIFE HISTORY OF MARINE FISHES. B. S. Miller and A.W. Kendall, Jr. 2009.  
University of California Press, Berkeley, California. 364. pp.**

**By John J. Govoni**

This book is the latest in a series of recently published books on varied aspects of the early life of fishes; yet it is a most important one. The past 100 years have seen the increasingly frequent publication of symposia and proceedings, in journal or symposium format, that deal with problems associated with the population bottleneck known as recruitment. The past twenty years have seen the publication of four books published by international publishing houses that cover exclusively topics of the early life histories of both freshwater and marine fishes. These books are edited volumes that present papers or chapters by single, or multiple authors, on specific topics. Consequently the papers or chapters comprise the parochial interests and biases of one author, or a few coauthors. Bruce Miller and Art Kendall, both AIFRB fellows, teamed to produce the first book on the early life history of fishes, written by two authors with expertise spanning a broad spectrum of early life history studies accumulated over careers of accomplishment.

The book was a long time in the making. The authors met as graduate students at the University of Washington, College of Fisheries and the Department of Oceanography, maintained close communication, and lectured together in courses in fisheries science. This relationship has resulted in a coherent, well organized, and well coordinated book, written with the congealed perspective of two authors – their personal biases notwithstanding. The strength of the book is just that, the long experience in teaching and research on a broad range of early life history topics (Miller) and the long experience of applied research on larval fish taxonomy, ontogeny and systematics, and fisheries oceanography (Kendall).

The title belies the content, a bit. Many books deal with marine fishes, largely because the recruitment problem has registered in the population dynamics of fishes of commercial fishery importance. Miller and Kendall is so entitled, yet while the book focuses upon marine fishes, and principally those with free floating eggs and larvae of pelagic habitats, many chapters are written about generic topics in fish biology and with fishes that live in both marine and fresh- waters, as well as diadromous and catadromous species that live in both habitats.

Miller and Kendall is well organized into a logically coherent progression of chapters: Fish reproduction; Development of eggs and larvae; Ecology of fish eggs and larvae; Population dynamics and recruitment; Habitat, water quality, and conservation biology; and Rearing and culture of marine fishes. Chapters engage one or several of the principal strategies of critical thinking and writing: definition, classification, summarization, comparison, and analysis. The first chapter commendably begins with the alpha of the alpha and omega of early life history study – oogenesis and spawn formation. Chapter IV, ecology of fish eggs and larvae begins with definitions of ecology and ecosystems then moves to the role of the early life history of fishes in the ecosystem, a currently appropriate entry given the present emphasis on ecosystem management as opposed to single species fisheries management. The last chapter, is logically placed, but mis-entitled, as it deals with applications of rearing and culture, and not methods. The contents of the book conclude with laboratory exercises, which lends the entire book to application in teaching. The tables are well organized, inclusive, and simple; the boxes are longer and more complex, but comprehensive. Most of the figures are reprinted from the literature without modification; original figures or those pulled from the literature of the authors, are truly illustrative. The references are up-to-date, with 2009 citations.

There are few omissions or factual errors and those that seem apparent owe to the intent of the authors to reach overarching generalities. For example, the discussion of buoyancy is cursory and the coupling of the onset and development of visceral organ systems to developmental sub-stages predicated on notochord flexion seems haphazard. Chapter V, Sampling fish eggs and larvae, omits discussion of electrically hard-wired, multiple net and environmental sensing devices (the MOCNESS and BIONESS), which brought the simultaneous collection of fish eggs and larvae and environmental variables into complete, computerized automation.

Most recent books on the early life history tout relevance and application as undergraduate and graduated level texts. Miller and Kendall is well suited to either application, but given its content and presentation, it will be the most useful as text. It will serve well as a reference for researchers.

*Many thanks to Jeff for this quick and thoughtful effort. Ed*

## **Facing the facts on the future of Northwest salmon**

**By Robert Lackey**

Over the past 135 years there have been many salmon recovery plans. During the past two decades their frequency has increased. The Clinton administration offered several detailed plans. The Bush administration tweaked the Clinton plans and offered several even more detailed ones. Now the Obama administration has tweaked the final Bush plan and offered its own with a few new wrinkles. Good luck.

Not one of these plans has much of a chance of achieving its publicly stated goal. Why is it that experts, behind closed doors and off the record, pretty much agree that they will not be successful? To find out why, we need to consider what we learned from Joe Friday.

Radio, television and movie detective extraordinaire Joe Friday demanded and provided “just the facts” as he sleuthed out truth amid the gossip and hearsay of criminal investigations. Scientists (the experts) who are tasked with informing the public and policy-makers about natural policy issues should attempt to do the same — just the facts — the straightforward, inflexible, sometimes unpleasant realities. Lets use a Joe Friday approach to the salmon crisis.

Fact 1: Wild salmon in California, Oregon, Washington, Idaho and southern British Columbia are in serious trouble. South of the Canadian border, most runs are less than 10 percent of their pre-1850 levels and more than two dozen are listed as threatened or endangered under the U.S. Endangered Species Act. Similarly, several runs in British Columbia are candidates for listing under the Canadian Species at Risk Act. Worse, from California to British Columbia, many runs have disappeared, and more will follow unless there is a reversal of the long-term downward trajectory.

Fact 2: The meager state of salmon runs along the West Coast is not a new situation. The decline in wild salmon numbers started with the California gold rush in 1848; the causes included water pollution, habitat loss, over-fishing, dams, irrigation projects, predation on salmon by many species, competition with hatchery-produced salmon and non-native fish species, and many others.

Fact 3: If society wishes to do anything meaningful about moving wild salmon off their current long-term downward trend, then something must be done about the unrelenting growth in the human population level along the West Coast. Currently, Oregon, Washington, Idaho and British Columbia are home to 15 million humans. Assuming likely reproductive rates and continuing immigration to the Pacific Northwest, in 2100 this region’s human population will be somewhere between 50 million and 100 million: a quadrupling by the end of this century, barely 90 years from now. Similarly, extrapolating population growth rates for California, by 2100 that state alone will be home to over 160 million people.

Fact 4: If the population levels in California, Oregon, Washington, Idaho and British Columbia increase as expected, the options for restoring salmon runs to significant, sustainable levels are greatly constrained. By 2100, from California to British Columbia, there could easily be 200 million to 250 million people. With so many more people inhabiting the West Coast, consider the demand for houses, schools, stadiums, expressways, planes, trains, automobiles, coffee shops, fast-food restaurants, malls, air conditioning, drinking water, pipelines, computer chips, home entertainment systems, ski resorts, golf courses, sewer treatment plants and office buildings for government employees.

Society’s options for sustaining wild salmon in significant numbers would be just about nonexistent. Good water quality would be achievable, as would maintaining prosperous populations of many non-native fish species (walleye, smallmouth bass and American shad) better adapted to altered aquatic environments, but the possibilities for abundant wild salmon would be severely constrained.

Whatever policy-makers propose to do about the 2009 collapse of West Coast salmon runs, these four facts cannot be ignored. Policy-makers should demand from scientists realistic and honest assessments of the current and future conditions for salmon.

Joe Friday was a tough, no-nonsense professional. Those of us who provide the public and policy-makers with the best available information about salmon ought to follow his lead: “just the facts.”

*Submitted by: Robert Lackey  
From: The Orgonian, September 28, 2009*

## **5th World Fisheries Congress A Success**

### **(Report from Past President Gary Sakagawa)**

The port city of Yokohama, Japan was the venue for the 5th World Fisheries Congress, October 20-24, 2008. More than 1,600 participants from around the world descended on Yokohama for the 5-day event, which included an opening ceremony presided over by the Emperor and Empress of Japan. Hosting the 5th Congress was the Japanese Society of Fisheries Science (Dr. Katsumi Aida, President) and its organizing committee chaired by Professor Shugo Watabe. The American Institute of Fishery Research Biologists had several members participating in this event and was also recognized as a financial contributor by the host.

Each day of the Congress began with two keynote speakers in the morning followed by 11 concurrent sessions for contributed papers. Approximately 700 papers were presented in nine topical sessions: Fisheries and Fish Biology, Aquaculture, Biotechnology, Post Harvest Science and Technology, Material Cycling in Aquatic Ecosystems, Freshwater, Coast and Marine Environment, Biodiversity and Management, Fisheries Economics and Social Science, and Education and International Cooperation. For diversion, participants could select from visiting a trade show with 34 vendors, viewing poster papers and speaking to authors in a large hall, enrolling in a Japanese cultural class (flower arrangements, “Ikebana,” paper craft, “origami,” etc.), taking part in tours (Kamakura, Tokyo wholesale fish market, “Tsukiji,” etc.) or getting lost in the historical wards and vast shopping arcades of Yokohama.

This 5th Congress was a media event in Japan where fish and fisheries news are followed closely by the public. The organizing committee anticipated this interest and prepared a unique way to connect the Congress with the Japanese public. It scheduled a public forum (in Japanese) to discuss Congress activities and results with the public and press for the day after the Congress. It also anticipated that the keynote addresses would be of special interest. One in particular by Professor Michael A. Crawford, London Metropolitan University UK, caught the attention of the press. Professor Crawford spoke about his research on the role of fatty acids in human nutrition, brain development, evolution and health. His research has shown that fish is the best source for essential fats, particularly the Omega 3 fatty acids, required for development and maintenance of a healthy human brain. Cereals and wheat sources (Omega 6 rich) for fatty acids are poor substitutes. His message that a diet rich in fish and fish products is good for maintaining a healthy brain resonated well with the interest of the aging and increasingly health-conscious Japanese population.

The next World Fisheries Congress is scheduled to be held in May 2012 in Edinburgh, Scotland, UK.

## And if you don't know Gary...

### Alumnus Feature

#### Gary T. Sakagawa, PhD, 1972

**The dynamics of juvenile salmon, with particular emphasis on pink salmon (*Oncorhynchus gorbushca*), during their early marine life**

Gary Sakagawa is the Assistant Center Director for Fishery Management Programs at the NOAA Fisheries Southwest Fisheries Science Center, in La Jolla, California. He has been working with NOAA Fisheries since 1971. His research is focused on population biology and stock assessment of highly migratory species, including several species of tuna.

A longstanding supporter of our program, Gary reflected on the value of the educational and research experience based on his time at the University of Washington (UW): "I learned to formulate the right questions, take a systems point of view, and especially interact with students of diverse backgrounds and experiences. This helped shape my view that fisheries issues need to be addressed in a broad context of biology, economics, politics, and social forces."

To address such issues, Gary urges students to get a wellrounded education, in part because the specialties they study in college often do not persist throughout their careers. "One constant, however," he added, "is that fisheries work requires interaction with people, so training in interpersonal skills will always be useful."

Gary observed that a major strength at School of Aquatic and Fishery Sciences (SAFS) is the many opportunities students have to gain field experience. He also emphasized the importance of training in stock assessment techniques: "Few universities have significant programs in this discipline, and UW is one. The job market for graduates trained in stock assessment is 'hot'. I'm amazed that more universities have not picked up on this."

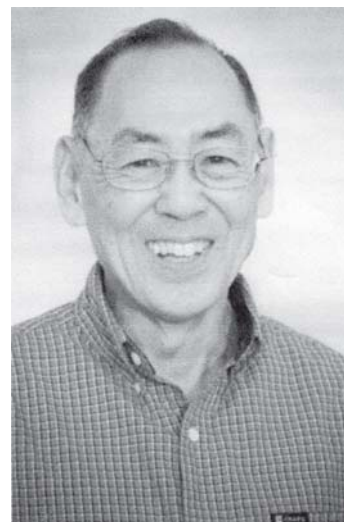
In considering the role of higher education in research and policy, Gary cited three basic, interconnected areas: "Foremost is training students to be marketable for good jobs and make significant contributions to society and the world. Second is advancing fishery science that leads to medium- to long-term payoffs to society. Third is partnering with the private and government sectors to implement research findings." By addressing these three areas, Gary believes an institution like SAFS can serve as a catalyst for conducting research and implementing research findings for the benefit of the greater community.

Gary allowed that this is no easy task, given the challenges we face: "We must balance the demands of the growing human population with the biological limits of fisheries resources in a changing environment." He observed that many people rely on fish products for a good part of their diet, especially in developing nations, and that people are becoming increasingly aware of seafood's health benefits: "In short, demand will remain high and grow." Further, while he noted that aquaculture could help us recover wild stocks and partially satisfy growing demands, he cautioned that "it too is facing enormous challenges."

Gary has been contributing to the SAFS program for many years: "At an early age, my parents taught me the importance of giving back to the community that played a part in my success. It's a family tradition to support the community that I reside in as well as those communities that contributed to my fisheries training and that will continue to train diverse students in the future." We are grateful that the SAFS community remains high on Gary's support list.

Make a gift: <http://fish.washington.edu/fund>

*From Aquatic & Fishery Sciences Newsletter of the School for Aquatic and Fishery Sciences, University of Washington*



*Gary T. Sakagawa*

# Plenty more tuna in the sea?

## **Fellow Joseph douses emotional fire with deluge of facts.**

Tuna are the latest fish to come with a health warning about exploitation and collapsing stocks. The truth is rather different, says James Joseph.

IS IT OK to eat tuna without feeling guilty? The media is full of reports claiming the demise of tuna stocks. Monaco, France and UK are calling for the trade in bluefin tuna to be banned. There is no doubt that some tuna stocks are heavily overfished, but they are not the source of the fish you eat in a tuna sandwich or salad. In fact, it's OK to continue eating tuna—at least for now.

Tuna are widely but sparsely distributed throughout the world's oceans. They grow rapidly to very large size and can support major fisheries. They also migrate long distances, and their travels carry them through the fishing zones of many nations and also international waters.

This wanderlust makes tuna more complicated to manage than less nomadic fish. Because the level of fishing in one area can affect their abundance in others, cooperation among the nations through whose waters tuna migrate and those whose fleets catch them is essential. Accordingly, tuna stocks are managed by five regional fisheries management organization, whose duties are to conduct scientific studies and implement conservation measures to ensure the tuna harvest is sustainable.

Taken together, tuna account for about 5 per cent, or 4.2 million tonnes, of the world's annual harvest of marine fish. The catch is made up of seven principal species. Skipjack, used mostly for canning, accounts for 59.1 per cent. Yellowfin is next with 24.0 per cent, bigeye 10.0 per cent, albacore 5.4 per cent, and the three species of bluefin (southern, northern [Atlantic] and Pacific) make up the remaining 1.5 per cent. Bluefin are the giants of the tuna family and the most highly prized.

These seven species are divided into 23 stocks. Scientific studies have shown that, of these, six are overfished, six are fully utilized (which means they can't sustain any increase in the catch), and nine are not yet fully utilized. Two have not been adequately assessed.

The three most seriously overfished stocks are eastern Atlantic and Mediterranean bluefin, western Atlantic bluefin, and southern bluefin. Unless measures are implemented to reduce catches they might not recover. For the fourth bluefin stock, in the Pacific, a full assessment is currently underway.

Of the remaining three overfished stocks, North Atlantic albacore is recovering and is nearly back to its optimum level; the eastern Pacific bigeye stock is slightly overfished, but management measures due to be implemented this year may allow it to rebuild; and yellowfin in the Indian Ocean may recover thanks to recent pirate activity, which has led many vessels to leave the area.

The other tuna stocks are reasonably healthy. Three of the six fully utilized stocks are at risk of becoming overfished, but conservation measures are being put in place. Overall, about 90 per cent of tuna catches come from stocks that are not overfished.

So contrary to what you might have been led to believe, tuna stocks are largely in good shape. The challenge is to ensure that the healthy stocks stay healthy and the overfished stocks recover.

There are many obstacles to overcome. Each of the management organizations comprises between 6 and 48 member states; most of them require consensus of all the members in order to enact conservation measures, and this is difficult to achieve.

One of the main problems is that there are too many tuna boats—capacity is 10 to 40 per cent more than is needed to harvest the stocks at sustainable levels. There are no strict controls to stop new vessels entering most tuna fisheries, so they continue to be built. This overcapacity results in excessive competition for limited supplies and diminishing economic returns, and makes it difficult for nations to agree on conservation measures.

This sort of shortsighted race to exploit a resource without regard for the long-term consequences is what has led to overfishing in many of the world's fisheries. It stems from the tradition of open access to highseas fisheries, a concept enshrined in the United Nations Convention on the Law of the Sea.

It is time to change the convention and introduce new management systems. The first step would be to limit entry into the fishery. Next, assigning fishing quotas to individual boats, rather than allowing them to compete for as large a share of an overall quota as possible, would motivate fisheries themselves to support conservation measures in order to protect their share.

However, achieving consensus for such systems will be difficult because of tension between the haves and have-nots. Most of the have-nots are developing states that aspire to establish tuna-fishing fleets. Tuna pass through waters under their control and many are members of regional management organizations, but in many cases they lack the capital and infrastructure to run fleets. Because they want a piece of the action, they are unlikely to agree to limits on new vessels unless they are guaranteed a right to acquire vessels.

Excluding bluefin, tuna fisheries are close to peak productivity. Unless effective conservation measures are implemented, they will slide down the slippery slope of overfishing. The situation is serious enough that scientists and environmental organizations have joined together with the major canned tuna processors to form the International Seafood Sustainability Foundation. Its purpose is to support the five fisheries management organizations in their duties to implement science-based conservation.

The time for states to negotiate meaningful conservation measures is now, before the healthy stocks become overfished and the overfished stocks are further depleted.

*James Joseph serves on the International Seafood Sustainability Foundation's board of directors and is chair of its science advisory committee.*

*From: New Science  
Submitted by Bill Bayliff*



# A Valuable Newsletter

I call your attention to a newsletter, River Crossing, issued by the Mississippi Interstate Cooperative Resource Association (MICRA).

I find it a very informative publication — the recent issue includes current information about Asian Carp and the Great Lakes, eradication of the Snakehead in Arkansas, Tilapia problems in Louisiana, spawning of hatchery propagated sturgeon, Yellowstone Cutthroat trout, etc. etc.

It is free — online or hardcopy by emailing: MICRA@fws.gov and requesting a subscription. If interested ask for a current issue.

*Submitted by Bernie Skud*

## Member June leads conservation effort!

### Stimulus money pays fishermen to snare lost nets

**By Patrick Oppmann CNN**

Until recently Kenny Woodside and about 100 other divers searched Puget Sound for sea cucumbers and urchins to sell to buyers in Asia, where the items are considered delicacies. But demand for the fishermen's catch dried up with the worldwide economic crisis and left many of the divers without a reason to go out on the water.

"The fishing industry has slowed from a full-time job to just a couple months a year," said Doug Monk, the captain of the boat from which Woodside dives. "The red sea urchin market is almost nonexistent. But thanks to a small piece of the federal stimulus recovery plan, Monk, Woodside and about 40 other fishermen will go back to work hauling in a very different catch: lost fishing nets.

While many stimulus projects have come under fire as pork barrel spending, backers of the nets program say it is a model for helping those battered by the economic downturn while completing needed public works.

Thousands of the large nets stretch across the floor of Puget Sound, where they create an environmental hazard. Some of the nets were lost by fishermen to the rocky coastline decades ago but continue to catch and kill.

According to the Northwest Marine Conservation Initiative, the nets are responsible for killing tens of thousands of marine life, mammals and birds every year. The nets, some of which extend larger than a football field, can also tangle the propellers of boats and pose a danger to scuba divers.

After struggling to find funding, the group received \$4.6 million in stimulus funds to recover most of the nets that litter the unique Puget Sound ecosystem. The only reason the nets have remained underwater for so long, said Ginny Broadhurst, director of the Northwest Marine Conservation Initiative, is because the damage they are doing to the environment is invisible from the surface.

"If you had nets strung along the streets that are catching bunny rabbits and squirrels, we wouldn't be discussing whether we should be removing them. We would be pulling them. It would be immediate," said Broadhurst. "When those threats are underwater it's so much harder to know what impacts they are having."

But pulling those nets is no easy task. Divers swim close to 100 feet down to an environment that is anything but friendly. Instead of using scuba equipment, they breath through air hoses running from the boat above. When the divers find the fields of nets, they begin the labor of cutting them free piece by piece and all by hand. Removing one net can take days. The nets are then pulled to the boat waiting on the surface. In just a few hours on the water, the divers can pull free about 1,000 pounds of nets. Inside are the bones of countless fish and birds, along with several species of protected sharks and crabs. Anything still alive is cut free and thrown back in the water. Then, biologist Jeff June notes what they have brought up. So far, he says, the group had identified 112 distinct species trapped in the nets.

The fishing nets themselves are considered toxic after the years of catching so much sea life. The divers seal them in heavy duty plastic bags and, once on shore, take the nets to a landfill. But biologist June said the group is working on a plan that would have the nets burned, creating energy from lost fishing nets. Over the next 18 months the group expects to pull some 3,000 nets from Puget Sound. And in that time the fishing industry could bounce back from its slump, allowing Doug Monk and his crew to return to catching urchins and sea cucumbers.

But, the boat captain said, recovering the fishing nets has greater meaning than just riding out a rough economy. "We feel we are doing a good thing," he said. "[With] harvest diving we are taking from the resources; here we are giving them back."

*Submitted by Allen Shimada*

# Saving Atlantic Salmon, Historical record clears

## Atlantic salmon, archaeology and climate change in New England

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### ABSTRACT

A paucity of archaeological remains of Atlantic salmon in Northeast North America has been cited as evidence that the species may have been present in the region only during and after the Little Ice Age (ca. 1450-1850 AD), one of coldest periods of the Holocene. However, significant problems of preservation, recovery and identification remain. Here, improved methods of identification use vertebra structure to distinguish salmon from trout, and strontium/calcium ratios to differentiate sea-run from landlocked salmon. In addition to the Little Ice Age, Atlantic salmon is identified in tightly date contexts at 7000-6500 and 3500-3000 calendar years BP, during climate periods that were comparatively warm and wet.

*From: Journal of Archaeological Science xxx (2009) 1-8*

*Submitted by Joan Trial*

## Use of nonnative oyster officially ruled out

The idea of introducing a nonnative oyster into the Chesapeake to revive wild oyster populations or to provide a boost to private aquaculture officially came to an end in August.

Col. Andrew Backus, commander of the Norfolk District, U.S. Army Corps of Engineers, signed the “record of decision” which brings to a close a five-year study of oyster management options in the Bay.

The study, known as a Programmatic Environmental Impact Statement, began when state officials-facing a native oyster population ravaged by disease, overharvesting and destruction of habitat proposed the introduction of *Crassostrea ariakensis*, a native of China, which in tests appeared resistant to diseases that afflicted the native species.

The Corps and the states of Maryland and Virginia were lead agencies for the study, which was expanded to consider a series of oyster management alternatives. State and federal officials announced earlier this year that they would rule out the use of nonnative oysters. The record of decision cited “ecological uncertainties” about introducing a nonnative species, and “strong opposition of most stakeholders” to the use of a nonnative species.

The preferred alternative, outlined in the record of decision, incorporates three of the options that were studied:

- Expand, improve and accelerate native oyster restoration programs.
- Implement a temporary harvest moratorium on native oysters and develop a buy-out program to compensate displaced watermen, which could include work in restoration efforts.
- Expand native oyster aquaculture to support the commercial production of oysters.

While the record of decision establishes a “preferred alternative” from the study, it is not necessarily binding on the states. For instance, it does not have the authority to force states to implement a harvest moratorium and dramatically accelerate restoration efforts, which would come with a huge price tag.

But it does set a consensus direction. In August, A.C. Carpenter, executive secretary of the Potomac River Fisheries Commission, said he would recommend to the Commission in September a moratorium on oyster harvests in the river, citing continued poor harvests and the recommendations from the EIS.

*The final Environmental Impact Statement and Record of Decision can be found at [www.nao.usace.army.mil/OysterEIS/](http://www.nao.usace.army.mil/OysterEIS/).*

*From: Bay Journal 19(6) September 2009*

## EU officials warn cod is closer to disappearing

Brussels — Cod is slipping closer to disappearing from key European fishing grounds, officials warned Friday, saying that only steep catch cuts will prevent the disappearance of a species prized for centuries for its flaky white flesh.

The European Union’s executive body called for sharp cuts in the amount of cod fisherman can catch next year — up to 25 percent in some areas. The European Commission said recent studies showed cod catches in some areas are far outstripping the rate of reproduction.

Scientists estimated that in the 1970s there were more than 250,000 tons of cod in fishing grounds in the North Sea, eastern English Channel and Scandinavia’s Skagerrak strait. In recent years, however, stocks have dropped to 50,000 tons.

*From: Sun Journal New Bern, NC Oct. 17, 2009*

# Federal Fisheries Management Council Approves Measures to Protect Largest Deepwater Coral Reef in the U.S. South Atlantic

## *Historic measures aim to protect over 23,000 square miles of coral habitats*

Members of the South Atlantic Fishery Management Council voted unanimously to approve the Comprehensive Ecosystem-Based Amendment 1, a move that will bolster the layer of protection for over 23,000 square miles of complex deepwater corals located off the coasts of the Carolinas, Georgia, and eastern Florida. The amendment, upon implementation by the Secretary of Commerce, will protect specific areas of sensitive habitat, deemed Coral Habitat Areas of Particular Concern (HAPCs) that house an invaluable array of deepwater coral species living in waters ranging from 400 meters (1200 ft.) to 700 meters (2300 ft.) deep.

The South Atlantic region is home to what may be the largest contiguous distribution of deepwater corals in the world, including the common *Lophelia* coral, largely responsible for reef mound construction in these cold water areas. The parameters defined within the amendment aim to shield these areas from impacts associated with bottom-tending fishing practices. "I am delighted, after five years of effort, that the South Atlantic Fishery Management Council has taken this historic step in the protection of deep sea coral habitat," said Council Chairman Duane Harris. "This effort involved working closely with golden crab and royal red shrimp fishermen and coral reef experts to craft measures that allow continued fishing while ensuring these coral areas, some of which are thousands of years old, are protected. The measures will also protect against any possible future shifts of fishing efforts to these coral areas."

At the beginning of the decade few people knew of the existence of vast areas carpeted with corals in deep waters off the South Atlantic coast of the U.S. Scientists at that time were beginning to realize the extent and importance of these "hidden" ecosystems. In 2003, the Council tasked two of those scientists, Dr. Steve Ross, with the University of North Carolina at Wilmington, and John Reed, of the Harbor Branch Oceanographic Institution, to compile two reports on what was known to date about the deepwater coral ecosystems in the region.

Based on these two reports and following the recommendation of its Habitat and Coral Advisory Panels, the Council quickly chose to move forward to protect the area from fishing impacts. A collaborative process involving conservationists, scientists, managers, and fishermen ensued and, over the following 5 years, culminated with the development of the Comprehensive Ecosystem-Based Amendment 1. If approved for implementation by the Secretary of Commerce, regulations to establish the Coral Habitat Areas of Particular Concern would likely become effective in early 2010.

"In both the process involved and the results achieved, the South Atlantic Fishery Management Council has set a new standard for management of valuable ecosystems," stated Dr. Doug Rader, chairman of the Council's Habitat and Environmental Protection Advisory Panel. "I know of no other example where the finest science available was translated through interactive work with managers and fishermen into world-class protection." This impressive 'win-win' should be celebrated by all those who love the sea, and who appreciate eating sea food they know is harvested in ways that protect its bounty."

For many years fishermen targeting golden crab and royal red shrimp have set their traps and hauled their nets in areas now known to provide suitable habitat for deepwater corals. These small traditional fisheries, however, operate in distinct areas where fishermen can be sure their gear will not become tangled and possibly damaged. Therefore, "Allowable Golden Crab Fishing Areas" and "Shrimp Fishery Access Areas" within two of the proposed Coral HAPCs are included in the proposal to ensure the continued existence of these fisheries and the communities they support. "The Council itself initiated efforts to alert us of all the ramifications of the developing process and to minimize the impact on the golden crab fishery," said Bill Whipple, chairman of the Golden Crab Advisory Panel. "After dozens of meetings and hundreds of hours with numerous affiliates of the SAFMC, the outcome includes invaluable learning for all involved, deep-rooted respect, and a resolution of the problem which, given the limitations and complexities involved, preserves and maximizes the interests of everyone."

An international team of deepwater coral researchers, led by Dr. Ross, is currently conducting a series of research cruises that include exploration of the proposed deepwater coral protected areas off the South Atlantic coast. Using Harbor Branch Oceanographic Institution's manned submersible, the Johnson Sea-Link, scientists were able to collect coral samples at depths over 1,000 feet and record never before seen portions of the expansive reefs during the first cruise in August 2009 off of Cape Canaveral, Florida. Coral samples allow scientists to chemically measure environmental changes such as ocean temperatures and productivity, often over thousands of years. The reefs may act as barometers for impacts associated with ocean acidification and climate changes. Scientists are also studying habitat distribution and the composition of deepwater communities. Certain species associated with the corals, such as sponges, may have biomedical applications in the treatment of cancer. "The Council is spearheading efforts to define the boundaries and protect these areas," said Dr. Ross, noting that fishing practices have damaged some deepwater coral areas in other parts of the world. "We're ahead of the game. These deepwater reefs are irreplaceable."

### **Additional resources:**

High resolution images and video clips are available from the Habitat and Ecosystem Section of the Council's Web site at: [www.safmc.net](http://www.safmc.net). Daily cruise logs are posted at: U.S. Geological Survey [http://fl.biology.usgs.gov/DISCOVERY/cruise\\_plan\\_2009.html](http://fl.biology.usgs.gov/DISCOVERY/cruise_plan_2009.html) and the N.C. Museum of Natural Sciences at: <http://naturalsciences.org/microsites/education/deepsea/index.html>

Note: Copies of the award-winning film "*Revealing the Deep*" about deepwater coral exploration and a separate CD with high resolution images and video clips from recent cruises are available by contacting the Council office.

*Press Release: South Atlantic Fishery Management Council*

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